

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

- ☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2018
OR
☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
FOR THE TRANSITION PERIOD FROM TO



COMCAST

Registrant; State of Incorporation; Address and
Telephone Number

I.R.S. Employer Identification No.

Commission File Number

001-32871

COMCAST CORPORATION

27-0000798

PENNSYLVANIA
One Comcast Center
Philadelphia, PA 19103-2838
(215) 286-1700

001-36438

NBCUniversal Media, LLC

14-1682529

DELAWARE
30 Rockefeller Plaza
New York, NY 10112-0015
(212) 664-4444

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

Comcast Corporation –

Title of Each Class

Name of Each Exchange on Which Registered

Class A Common Stock, \$0.01 par value
2.0% Exchangeable Subordinated Debentures due 2029
5.50% Notes due 2029
9.455% Guaranteed Notes due 2022

NASDAQ Global Select Market
New York Stock Exchange
New York Stock Exchange
New York Stock Exchange

NBCUniversal Media, LLC – NONE

SECURITIES REGISTERED PURSUANT TO SECTION 12(g) OF THE ACT:

Comcast Corporation – NONE
NBCUniversal Media, LLC – NONE

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Comcast Corporation Yes ☒ No ☐
NBCUniversal Media, LLC Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

Comcast Corporation Yes ☐ No ☒
NBCUniversal Media, LLC Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days.

Comcast Corporation Yes ☒ No ☐
NBCUniversal Media, LLC Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).

Comcast Corporation Yes ☒ No ☐
NBCUniversal Media, LLC Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendments to this Form 10-K.

Comcast Corporation ☒
NBCUniversal Media, LLC N/A

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See definition of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act:

Comcast Corporation Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐ Emerging growth company ☐
NBCUniversal Media, LLC Large accelerated filer ☐ Accelerated filer ☐ Non-accelerated filer ☒ Smaller reporting company ☐ Emerging growth company ☐

If an emerging growth company, indicate by check mark whether the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Comcast Corporation ☐
NBCUniversal Media, LLC ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act).

Comcast Corporation Yes ☐ No ☒
NBCUniversal Media, LLC Yes ☐ No ☒

As of June 30, 2018, the aggregate market value of the Comcast Corporation common stock held by non-affiliates of the registrant was \$149.068 billion.

Indicate the number of shares outstanding of each of the registrant's classes of stock, as of the latest practicable date:

As of December 31, 2018, there were 4,516,518,147 shares of Comcast Corporation Class A common stock and 9,444,375 shares of Class B common stock outstanding.

Not applicable for NBCUniversal Media, LLC.

NBCUniversal Media, LLC meets the conditions set forth in General Instruction I(1)(a), (b) and (d) of Form 10-K and is therefore filing this form with the reduced disclosure format.

DOCUMENTS INCORPORATED BY REFERENCE

Comcast Corporation – Part III – The registrant's definitive Proxy Statement for its annual meeting of shareholders presently scheduled to be held in June 2019.
NBCUniversal Media, LLC – NONE

Comcast Corporation

2018 Annual Report on Form 10-K

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Explanatory Note

This Annual Report on Form 10-K is a combined report being filed separately by Comcast Corporation (“Comcast”) and NBCUniversal Media, LLC (“NBCUniversal”). Comcast owns all of the common equity interests in NBCUniversal, and NBCUniversal meets the conditions set forth in General Instruction I(1)(a), (b) and (d) of Form 10-K and is therefore filing its information within this Form 10-K with the reduced disclosure format. Each of Comcast and NBCUniversal is filing on its own behalf the information contained in this report that relates to itself, and neither company makes any representation as to information relating to the other company. Where information or an explanation is provided that is substantially the same for each company, such information or explanation has been combined in this report. Where information or an explanation is not substantially the same for each company, separate information and explanation has been provided. In addition, separate consolidated financial statements for each company, along with notes to the consolidated financial statements, are included in this report.

Unless indicated otherwise, throughout this Annual Report on Form 10-K, we refer to Comcast and its consolidated subsidiaries, including NBCUniversal and its consolidated subsidiaries as “we,” “us” and “our;” Comcast Cable Communications, LLC and its consolidated subsidiaries as “Comcast Cable;” Comcast Holdings Corporation as “Comcast Holdings;” NBCUniversal, LLC as “NBCUniversal Holdings;” and Sky Limited (formerly Sky plc) and its consolidated subsidiaries as “Sky”.

This Annual Report on Form 10-K is for the year ended December 31, 2018. This Annual Report on Form 10-K modifies and supersedes documents filed before it.

The Securities and Exchange Commission (“SEC”) allows us to “incorporate by reference” information that we file with it, which means that we can disclose important information to you by referring you directly to those documents. Information incorporated by reference is considered to be part of this Annual Report on Form 10-K. In addition, information that we file with the SEC in the future will automatically update and supersede information contained in this Annual Report on Form 10-K.

Our registered trademarks include Comcast, NBCUniversal and the Comcast and NBCUniversal logos. This Annual Report on Form 10-K also contains other trademarks, service marks and trade names owned by us, as well as those owned by others.

Part I

Item 1: Business

We are a global media and technology company with three primary businesses: Comcast Cable, NBCUniversal and Sky. We were incorporated under the laws of Pennsylvania in December 2001. Through our predecessors, we have developed, managed and operated cable systems since 1963. Through transactions in 2011 and 2013, we acquired NBCUniversal, and in the fourth quarter of 2018, we acquired Sky.

We present our operations for (1) Comcast Cable in one reportable business segment, referred to as Cable Communications; (2) NBCUniversal in four reportable business segments: Cable Networks, Broadcast Television, Filmed Entertainment and Theme Parks (collectively, the “NBCUniversal segments”); and (3) Sky in one reportable business segment.

- **Cable Communications:** Consists of the operations of Comcast Cable, which is one of the nation’s largest providers of high-speed internet, video, voice, and security and automation services (“cable services”) to residential customers under the Xfinity brand; we also provide these and other services to business customers and sell advertising.
- **Cable Networks:** Consists primarily of our national cable networks that provide a variety of entertainment, news and information, and sports content, our regional sports and news networks, our international cable networks, our cable television studio production operations, and various digital properties.
- **Broadcast Television:** Consists primarily of the NBC and Telemundo broadcast networks, our NBC and Telemundo owned local broadcast television stations, the NBC Universo national cable network, our broadcast television studio production operations, and various digital properties.
- **Filmed Entertainment:** Consists primarily of the operations of Universal Pictures, which produces, acquires, markets and distributes filmed entertainment worldwide; our films are also produced under the Illumination, DreamWorks Animation and Focus Features names.
- **Theme Parks:** Consists primarily of our Universal theme parks in Orlando, Florida; Hollywood, California; and Osaka, Japan. In addition, along with a consortium of Chinese state-owned companies, we are developing a Universal theme park and resort in Beijing, China.
- **Sky:** Consists of the operations of Sky, one of Europe’s leading entertainment companies, which primarily includes a direct-to-consumer business, providing video, high-speed internet, voice and wireless phone services, and a content business, operating entertainment networks, the Sky News broadcast network and Sky Sports networks.

Our other business interests consist primarily of a wireless phone service, which we launched in mid-2017 under the Xfinity Mobile brand, and Comcast Spectacor, which owns the Philadelphia Flyers and the Wells Fargo Center arena in Philadelphia, Pennsylvania.

For financial and other information about our reportable business segments, refer to Item 7: Management’s Discussion and Analysis of Financial Condition and Results of Operations and Note 2 to each of Comcast’s and NBCUniversal’s consolidated financial statements included in this Annual Report on Form 10-K.

Available Information and Websites

Comcast’s phone number is (215) 286-1700, and its principal executive offices are located at One Comcast Center, Philadelphia, PA 19103-2838. NBCUniversal’s phone number is (212) 664-4444, and its principal executive offices are located at 30 Rockefeller Plaza, New York, NY 10112-0015. Comcast and NBCUniversal’s Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and any amendments to such reports filed with or furnished to the SEC under Sections 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), are available free of charge on the SEC’s website at www.sec.gov and on Comcast’s website at www.comcastcorporation.com as soon as reasonably practicable after such reports are electronically filed with the SEC. The information posted on our websites is not incorporated into our SEC filings.

Description of Our Businesses

Cable Communications Segment

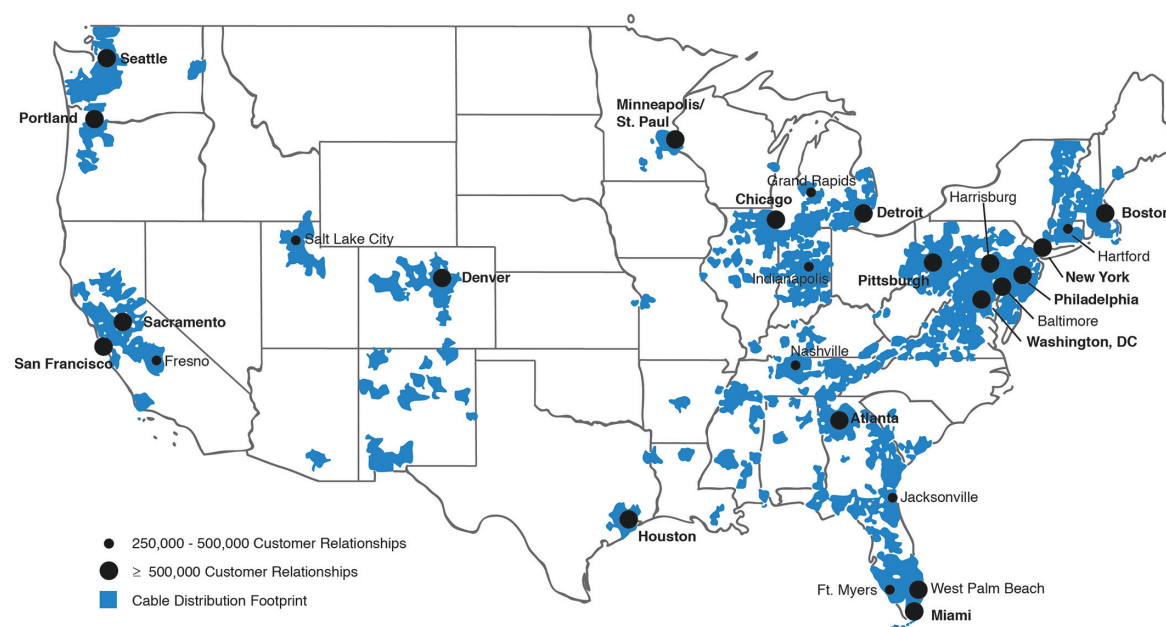
Cable Services

Cable Communications offers high-speed internet, video, voice, and security and automation services in the United States individually and as bundled services at a discounted rate over its cable distribution system to residential and business customers. Cable Communications generates revenue primarily from residential and business customers that subscribe to its cable services, which are marketed individually and as bundled services, and from the sale of advertising. Cable Communications' bundled service offerings aim to meet the needs of the various segments of its customer base, ranging from high-speed internet services packaged with video or streaming services that include a limited number of channels, to a quad product bundle, consisting of our high-speed internet, video, voice, and security and automation services. We also offer a wireless phone service as a component of our bundled services, which is reported in Corporate and Other. Subscription rates and related charges vary according to the services and features customers receive and the types of equipment they use, and customers are typically billed in advance on a monthly basis. A portion of Cable Communications' residential customers are subject to minimum-term contracts for their cable services, which are typically 2 years in length. Substantially all business customers are initially under minimum-term contracts, which typically range from 2 to 5 years. Customers with minimum-term contracts may only discontinue service in accordance with the terms of their contracts.

As of December 31, 2018, our cable systems had 30.3 million total customer relationships, including 28.0 million residential customer relationships and 2.3 million business customer relationships, and passed more than 57 million homes and businesses. Homes and businesses are considered passed if we can connect them to our distribution system without further extending the transmission lines and are estimated based on the best available information. As of December 31, 2018, total customer relationships penetration of homes and businesses passed was 53%.

The Areas We Serve

The map below highlights Cable Communications' cable distribution footprint as of December 31, 2018 and the designated market areas ("DMAs") where there are 250,000 or more customer relationships. The locations that are bolded represent the DMAs in which it operates that were also included in the top 25 U.S. television DMAs as of December 31, 2018.



High-Speed Internet Services

Cable Communications offers high-speed internet services with downstream speeds that range up to 1 gigabit per second (“Gbps”) and fiber-based speeds that range up to 2 Gbps. These services include access to an online portal and mobile apps, which provide email, an address book, calendars and online security features.

Throughout its footprint, Cable Communications is deploying wireless gateways that combine a customer’s wireless router, cable modem and voice adapter to improve the performance of multiple IP-enabled devices used at the same time within the home, provide faster internet speeds and create an in-home Wi-Fi network. Customers may personalize and manage their Wi-Fi network remotely with our xFi branded whole-home application and online portal, which includes viewing and changing their Wi-Fi password, identifying which devices are connected to their in-home network, setting parental controls and schedules, as well as other features, with our wireless gateways. Cable Communications continues to expand its network of residential, outdoor and business Wi-Fi hotspots.

As of December 31, 2018, 25.1 million residential customers subscribed to our high-speed internet services.

Video Services

Cable Communications offers a broad variety of video services that provide access to hundreds of channels depending on the customer’s level of service. Levels of service typically range from a limited basic service with access to between 20 and 40 channels to a full service with access to more than 300 channels. Video services generally include programming provided by national broadcast networks, local broadcast stations, and national and regional cable networks, as well as government and public access programming. Packages that include extensive amounts of foreign-language programming and other specialty tiers of programming with sports, family and international themes are also offered. Cable Communications tailors its video services for particular programming preferences, demographics and geographic areas according to applicable local and federal regulatory requirements.

Video customers may also subscribe to premium networks, such as HBO, Showtime, Starz and Cinemax, that generally provide, without commercial interruption, movies, original programming, live and taped sporting events and concerts, and other features.

Video services generally include access to a video on demand service (“On Demand”) and an interactive, on-screen program guide. Our On Demand service provides video customers with over 160,000 programming choices over the course of a month, including approximately 70,000 in high definition. A substantial portion of On Demand content is available at no additional charge. Other content, primarily movies and special-events programming, such as sporting events and concerts, can be rented or in some cases purchased to own digitally.

Cable Communications’ HD service provides customers with high-resolution picture quality, improved audio quality and a wide-screen format through an HD set-top box, and includes a broad selection of HD programming choices, including major broadcast networks, national and regional cable networks, and premium networks. DVR services allow video customers to record and store programs and play them at whatever time is convenient, and they also provide the ability to pause and rewind live television. HD and DVR, individually or together, are referred to as advanced services.

Cable Communications’ Internet Protocol (“IP”) and cloud-enabled video platform, referred to as the X1 platform, provides customers with integrated search functionality, including the use of a voice-activated remote control, personalized recommendations and access to, and integration of content from, certain third-party internet applications, such as Netflix, Amazon Prime Video and YouTube. Cloud DVR technology is offered in substantially all of our markets. Cloud DVR technology allows video customers to record programming via their set-top box using cloud-based servers and view those recordings on mobile devices via mobile apps.

Certain video customers have access to streaming services through mobile apps and an online portal that allow them to view certain live programming and On Demand content and to browse program listings. Depending on the customer’s level of service, these services may require an additional monthly fee. Cable Communications also launched a streaming video cable service throughout its footprint that allows high-speed internet customers to purchase its video cable service and stream live programming to a computer, tablet, smartphone or other device for a monthly fee.

As of December 31, 2018, 21.0 million residential customers subscribed to our video services.

Voice Services

Cable Communications offers voice services using interconnected Voice over Internet Protocol (“VoIP”) technology. The voice services provide either unlimited or usage-based local and domestic long-distance calling and include options for international calling plans, voicemail, voicemail transcriptions, text messaging, caller ID and call waiting. For customers with high-speed internet services, voice services also include the ability to access and manage voicemail, text messaging and other account features through an online portal or mobile apps.

As of December 31, 2018, 10.2 million residential customers subscribed to our voice services.

Business Services

Cable Communications offers a variety of products and services to businesses. The high-speed internet services for business services customers provide downstream speeds that range up to 1 Gbps and fiber-based speeds that range up to 10 Gbps. Small business services offerings primarily include high-speed internet services, as well as voice and video services, similar to those provided to residential customers. It also offers video monitoring solutions and cloud-based services that provide file sharing, online backup and web conferencing, among other features. Cable Communications also offers Ethernet network services that connect multiple locations and provide higher downstream and upstream speed options to medium-sized customers and larger enterprises, as well as advanced voice services, along with video solutions that serve hotels and other large venues. In addition, cellular backhaul services are provided to mobile network operators to help them manage their network bandwidth.

Recently, Cable Communications has expanded its enterprise service offerings to include a software-defined networking product for medium-sized and enterprise customers. Enterprise customers may also receive support services related to Wi-Fi networks, router management, network security, business continuity risks and other services. Enterprise service offerings are primarily provided to Fortune 1000 companies and other large enterprises with multiple locations both within and outside of Cable Communications’ cable distribution footprint, where we have agreements with other companies to use their networks to provide coverage outside of its service areas.

Advertising

As part of Cable Communications’ distribution agreements with cable networks, it generally receives an allocation of scheduled advertising time that is sold through its advertising business to local, regional and national advertisers. In most cases, the available advertising units are sold by our sales force. In some cases, it works with representation firms as an extension of its sales force to sell a portion of the advertising units allocated to it. Cable Communications also represents the advertising sales efforts of other multichannel video providers in some markets. In addition, it generates revenue from the sale of advertising on its digital platforms. It also provides technology, tools, data-driven services and marketplace solutions to customers in the media industry, which allow advertisers to more effectively engage with their target audiences.

Other

Cable Communications offers security and automation services that provide home monitoring services and the ability to manage other functions within the home, such as lighting and room temperature, through our online portal, mobile apps or the X1 platform. As of December 31, 2018, 1.3 million residential customers subscribed to our security and automation services.

Technology

Cable Communications’ cable distribution system uses a hybrid fiber-optic and coaxial cable network that we believe is sufficiently flexible and scalable to support its future technology requirements. This network provides the two-way transmissions that are essential to providing high-speed internet services, interactive video services such as On Demand, voice services, and security and automation services.

Cable Communications continues to focus on technology initiatives to design, develop and deploy next-generation media and content delivery platforms, such as the X1 platform and related cloud DVR technology, that use IP technology and its own cloud network servers to deliver video and advanced search capabilities, including through a voice-activated remote control, and that allow access to certain third-party internet applications.

Cable Communications continues to deploy wireless gateways to improve the performance of multiple IP-enabled devices used at the same time within the home, provide faster internet speeds and create an in-home Wi-Fi network. In addition, it continues to expand its network of residential, outdoor and business Wi-Fi hotspots.

Cable Communications is deploying 1 Gbps high-speed internet services that leverage DOCSIS 3.1 technology across its footprint and will continue to expand the capacity of its DOCSIS 3.1 infrastructure, including the implementation of DOCSIS FDX that will enable multi-gigabit services to be launched through its existing network.

Sources of Supply

For high-speed internet services, Cable Communications licenses software products, such as email and security software, and content, such as news feeds for its online portal, from a variety of suppliers. Under its contracts with these suppliers, it generally pays on a fixed-fee basis, on a per subscriber basis in the case of software product licenses or on a video advertising revenue share basis in the case of content licenses.

To offer video services, Cable Communications licenses a substantial portion of programming from cable networks and broadcast networks, as well as from local broadcast television stations. It attempts to secure long-term programming distribution agreements with these programming providers. The fees associated with these programming distribution agreements are generally based on the number of customers who are able to watch the programming and the platforms on which the content is provided. It seeks to include in distribution agreements the rights to offer such programming through multiple delivery platforms, such as through its On Demand service, online portal, mobile apps and streaming services.

For voice services, software products such as voicemail and text messaging are licensed from a variety of suppliers under multiyear contracts. The fees paid are generally based on the consumption of the related services.

Cable Communications purchases from a limited number of suppliers a significant number of set-top boxes and certain other customer premise equipment, network equipment and services to provide cable services to residential and business customers.

Cable Communications uses two primary vendors to provide customer billing for cable services to residential and business customers.

Customer and Technical Services

Cable Communications' customer service call centers provide 24/7 call-answering capability, telemarketing and other services. Its technical services group performs various tasks, including installations, plant maintenance and upgrades to its cable distribution system.

Sales and Marketing

Cable Communications offers services directly to residential and business customers through its customer service call centers, retail stores, customer service centers, websites, door-to-door selling, telemarketing, and third-party outlets, as well as through advertising via direct mail, television and the internet.

NBCUniversal Segments

NBCUniversal is one of the world's leading media and entertainment companies that develops, produces and distributes entertainment, news and information, sports, and other content for global audiences, and owns and operates theme parks worldwide.

Cable Networks

NBCUniversal's Cable Networks segment consists of a diversified portfolio of national cable networks that provide a variety of entertainment, news and information, and sports content, regional sports and news networks, international cable networks, and cable television studio production operations. It also owns various digital properties, which include brand-aligned websites.

The table below presents a summary of NBCUniversal's national cable networks and their advertising reach to U.S. households.

Cable Network	Approximate U.S. Households as of December 31, 2018 (in millions) ^(a)	Description of Programming
USA Network	90	General entertainment
E!	88	Entertainment and pop culture
Syfy	87	Imagination-based entertainment
MSNBC	86	News and information
CNBC	85	Business and financial news
Bravo	87	Entertainment, culture and arts
NBC Sports Network	83	Sports
Oxygen	72	Crime, mystery and suspense for women
Golf Channel	71	Golf competition and golf entertainment
Universal Kids	56	Children's entertainment
The Olympic Channel	33	Olympic sports events and Olympic-themed original content
CNBC World	31	Global financial reviews

(a) Household data is based on The Nielsen Company's December 2018 Household Universal Estimate report, which is derived from information provided by SNL Kagan. The Nielsen report includes estimates based on subscribers to both traditional and certain virtual multichannel video providers. The Nielsen report is not based on information provided by us and is included solely to permit comparisons between our cable networks and those operated by our peers.

The regional sports and news networks together serve more than 27 million households across the United States, including in markets such as Baltimore/Washington, Boston, Chicago, Philadelphia, Portland, Sacramento and San Francisco.

NBCUniversal's Cable Networks segment generates revenue primarily from the distribution and licensing of its programming and from the sale of advertising on its networks and digital properties. It markets and distributes cable network programming in the United States and internationally to multichannel video providers, including both traditional providers of linear programming and virtual providers who provide streaming services for linear programming. It also markets and distributes cable network programming to subscription video on demand services, such as those offered by Amazon, Hulu and Netflix. These distributors may provide its content on television, including via video on demand services, online and through mobile apps.

NBCUniversal's cable networks produce their own programs or acquire the rights to programming from third parties, including sports programming rights that are discussed below under the heading "Broadcast Television." NBCUniversal's cable television studio production operations identify, develop and produce original content for its own cable networks and third parties. It licenses its owned content, including programming from its cable network production operations, to cable and broadcast networks and subscription video on demand services. It also sells its owned content on standard-definition DVDs and Blu-ray discs (together, "DVDs") and through digital distribution services such as iTunes.

Broadcast Television

NBCUniversal's Broadcast Television segment operates the NBC and Telemundo broadcast networks, which together serve viewers and advertisers in all 50 states. The Broadcast Television segment also includes owned NBC and Telemundo local broadcast television stations, the NBC Universo national cable network, broadcast television studio production operations, and various digital properties, which primarily include brand-aligned websites. The Broadcast Television segment generates revenue primarily from the sale of advertising on its networks and digital properties, from the licensing of its programming, and from the fees received under retransmission consent agreements and associated fees received from NBC-affiliated and Telemundo-affiliated local broadcast television stations.

NBC Network

The NBC network distributes entertainment, news and sports programming that reaches viewers in virtually all U.S. television households through more than 200 affiliated stations across the United States, including NBCUniversal's 11 owned NBC-affiliated local broadcast television stations. The NBC network's programming library consists of rights of varying nature to more than 100,000 episodes of popular television content, including current and classic titles, unscripted programming, sports, news, long-form and short-form programming, and locally produced programming from around the world.

The NBC network produces its own programs or acquires the rights to programming from third parties. NBCUniversal has various contractual commitments for the licensing of rights to multiyear programming, primarily sports programming. The most significant sports programming commitments include the U.S. broadcast rights for the summer and winter Olympic Games through 2032 and

agreements with the NFL to produce and broadcast a specified number of regular season and playoff games, including *Sunday Night Football* through the 2022-23 season and two Super Bowl games, the first of which was in 2018. It also has U.S. broadcast rights to a specified number of NHL games through the 2020-21 season, English Premier League soccer through the 2021-22 season, certain NASCAR events through 2024 and certain PGA TOUR and other golf events through 2030. NBCUniversal's sports programming agreements also include the rights to distribute content on its national cable networks, including the NBC Sports Network and Golf Channel, on its regional sports networks, and online, including through its mobile apps.

The broadcast television studio production operations develop and produce original content, including scripted and unscripted programming series and talk shows. This original content is licensed to broadcast networks, cable networks and local broadcast television stations owned by NBCUniversal and third parties, as well as to subscription video on demand services, and it is sold on DVDs and through digital distribution services both in the United States and internationally. The broadcast television studio production operations also produce first-run syndicated shows for local markets that are broadcast on local broadcast television stations in the United States on a market-by-market basis. They currently distribute some of their television programs after their initial broadcast, as well as older television programs from their library, to local broadcast television stations and cable networks in the off-network syndication market.

NBC Local Broadcast Television Stations

As of December 31, 2018, NBCUniversal owned and operated 11 NBC-affiliated local broadcast television stations, including stations in 8 of the top 10 general markets, that collectively reached approximately 32 million U.S. television households and represent approximately 29% of U.S. television households. In addition to broadcasting the NBC network's national programming, its local broadcast television stations produce news, sports, public affairs and other programming that addresses local needs and acquire syndicated programming from other sources.

Telemundo

Telemundo is a leading Hispanic media company that produces, acquires and distributes Spanish-language content in the United States and internationally. Telemundo's operations include the Telemundo network, its 28 owned local broadcast television stations and the NBC Universo national cable network.

The Telemundo network is a leading Spanish-language broadcast network featuring original telenovelas, movies, news, specials and sporting events. Telemundo develops original programming primarily through its production studio and also acquires the rights to programming from third parties. It holds the Spanish-language U.S. broadcast rights to FIFA World Cup soccer through 2026.

Telemundo Local Broadcast Television Stations

As of December 31, 2018, Telemundo owned 28 local broadcast television stations affiliated with the Telemundo network, including stations in 18 of the top 20 U.S. Hispanic markets, which collectively reached approximately 70% of U.S. Hispanic television households as of December 31, 2018. Telemundo also owns an independent television station in Puerto Rico.

Filmed Entertainment

NBCUniversal's Filmed Entertainment segment primarily produces, acquires, markets and distributes filmed entertainment worldwide. It also generates revenue from Fandango, a movie ticketing and entertainment business, from the sale of consumer products, from the production and licensing of live stage plays, and from the distribution of filmed entertainment produced by third parties.

Films are produced both by the Filmed Entertainment segment alone and jointly with other studios or production companies, as well as with other entities. NBCUniversal's films are produced primarily under the Universal Pictures, Illumination, DreamWorks Animation and Focus Features names. Films are marketed and distributed worldwide primarily through NBCUniversal's own marketing and distribution operations. The Filmed Entertainment segment also acquires distribution rights to films produced by others, which may be limited to particular geographic regions, specific forms of media or certain periods of time. The Filmed Entertainment segment's content includes theatrical films, direct-to-video movies and its film library, which is comprised of more than 5,000 movies in a variety of genres.

The Filmed Entertainment segment has entered into, and may continue to enter into, film cofinancing arrangements with third parties, including both studio and nonstudio entities, to jointly finance or distribute certain of our film productions. These arrangements can take various forms, but in most cases involve the grant of an economic interest in a film to an investor. Investors generally assume the full risks and rewards of ownership proportionate to their ownership in the film.

The majority of the Filmed Entertainment segment's produced and acquired films are initially distributed for exhibition in movie theaters. After their release in movie theaters, it sells and licenses films through various methods. It distributes its films globally by selling them on DVDs to retail stores, rental kiosks and subscription by mail services and by selling them through digital distribution services and video on demand services provided by multichannel video providers, including the Cable Communications

segment. It also licenses its films, including selections from its film library, to cable, broadcast and premium networks, to subscription video on demand services, and to video on demand and pay-per-view services. The number of films licensed through subscription video on demand services is increasing as consumers continue to seek additional ways to view the Filmed Entertainment segment's content.

Theme Parks

NBCUniversal's Theme Parks segment consists primarily of Universal theme parks in Orlando, Florida; Hollywood, California; and Osaka, Japan. Universal Orlando includes two theme parks, Universal Studios Florida and Universal's Islands of Adventure, our water park, Volcano Bay, as well as Universal CityWalk Orlando, a dining, retail and entertainment complex. Universal Orlando also features on-site themed hotels in which we own a noncontrolling interest. The Universal theme park in Hollywood, California consists primarily of Universal Studios Hollywood, as well as Universal CityWalk Hollywood. The Universal theme park in Osaka, Japan consists primarily of Universal Studios Japan. NBCUniversal is also developing a Universal theme park in Beijing, China along with a consortium of Chinese state-owned companies. In addition, the Theme Parks segment licenses the right to use the Universal Studios brand name and other intellectual property, and also provides other services, to third parties that own and operate the Universal Studios Singapore theme park on Sentosa Island, Singapore.

The Theme Parks segment generates revenue primarily from ticket sales and guest spending at Universal theme parks. The Theme Parks segment licenses the right to use a substantial amount of intellectual property from third parties for its themed elements in rides, attractions and merchandising.

Sky Segment

Sky is one of Europe's leading entertainment companies operating in seven territories, including four of the five largest pay television markets in Western Europe: the United Kingdom ("U.K."), Italy, Germany and Spain. The majority of Sky's revenue is derived from its direct-to-consumer video business, which has 23.6 million retail customers, and primarily involves the distribution of a wide array of video channels to customers. Sky owns a diverse portfolio of pay television channels that offer entertainment, news, sports and movies, which are included in Sky's subscription video services and are also licensed through various distribution partnerships to third-party video providers that reach an additional 4 million households. Sky also provides high-speed internet, voice and wireless phone services in select countries.

Video Services

Sky's video services include a direct-to-home ("DTH") video service that is delivered through a combination of both satellite transmission and broadband connection and is marketed under the Sky brand in the U.K., Ireland, Italy, Germany and Austria. It also offers an over the top ("OTT") video service providing video content over the internet which is marketed as a distinct brand in these countries, as well as in Spain and Switzerland.

Sky's DTH video service is sold directly to customers in packages that include a diverse selection of Sky's owned entertainment and sports channels, channels owned by third parties and all local free-to-air public broadcasting channels. In addition to live-linear content, Sky's platform also provides access to On Demand and prior season libraries. Sky's video service offerings are tailored by country, with separate packages offered in each market. Basic packages include up to approximately 170 pay television channels in the U.K. and Ireland, approximately 84 channels in Italy, and approximately 44 channels in Germany and Austria. Specialty tiers for children's, sports, movie and HD programming are available for additional fees. Sky's video services also have pay-per-view programming for certain live sporting events and allow customers, as well as those without a subscription, to buy or rent programming for a fee.

Sky's DTH video service is primarily distributed to its customers through a set-top box video platform, including through Sky Q, which is Sky's next-generation video platform. Sky's customers have the ability to record several shows at once, to download content and recordings to watch offline on compatible devices, and for Sky Q households, to pause in one room and carry on in another. Sky Q customers are offered personalized content recommendations and the use of a voice activated remote control, as well as integrated access to content from other providers such as Netflix, Spotify, Vevo and YouTube.

Sky's OTT video service offers packages for purchase ranging from daily, weekly or monthly access for entertainment, sports, movies and children's programming. The entertainment package includes certain of Sky's owned premium channels and up to 500 TV On Demand programming series. The sports package provides access to Sky's owned sports channels and the movie package includes access to over 1,000 films. The children's package includes thousands of hours of child-friendly on demand programming.

Television Channels

Sky's owned entertainment channels include Sky One, Sky Arts and Sky Atlantic in the U.K. and Ireland; Sky Atlantic, Sky Uno and Sky Arte in Italy; and Sky Atlantic and Sky 1 in Germany and Austria. It also owns premium sports channels under the Sky Sports brand and premium movie channels under the Sky Cinema brand, including family and children's movie channels. Sky also broadcasts several Sky branded free-to-air channels, including Sky News in the U.K. and Ireland, Sky TG24 in Italy and Sky Sport News in Germany.

Sky acquires the rights to programming for its channels from third parties, in some cases on an exclusive basis, and produces its own programming. Sky has various contractual commitments for the licensing of rights to multiyear programming, primarily sports programming and exclusive entertainment programming. Its most significant sports programming commitments include the U.K. broadcast rights for English Premier League soccer games through 2022; German broadcast rights to Bundesliga and Union des Associations Européennes de Football ("UEFA") through 2021; and Italian broadcast rights to UEFA and Lega Nazionale Professionisti Serie A through 2021. Its most significant entertainment programming commitments include exclusive rights with HBO, Showtime, Warner Bros. and NBCUniversal. Sky is also increasingly creating and investing in original dramas that are broadcast simultaneously across all territories and sold to other markets through its syndication business.

In addition to including its channels as part of its video services, Sky derives revenue from the distribution of some of its channels on third-party platforms through both wholesale arrangements and arrangements with partners who distribute Sky's owned channels as agents to their respective customer bases.

Other Services

Sky offers high-speed internet and voice services in the U.K. and Ireland. Sky offers fiber-to-the-home ("FTTH"), fiber-to-the-cabinet and standard copper digital subscriber line ("DSL") broadband services, with average download speeds of 63 Mbps in the U.K. and 1 Gbps in Ireland. In the U.K., Sky uses a combination of its own core fiber network and wholesaling arrangements over third-party telecommunication providers' networks and also rents the "last mile" network from a third-party network operator. In Italy, Sky offers a bundled offering of its video service with high-speed internet and phone services through co-marketing agreements with several Italian broadband and telecommunications providers, and plans to launch FTTH services using Open Fiber to provide high-speed internet access and voice services later in 2019.

Sky offers wireless phone services to customers in the U.K. as a virtual mobile operator using its own core fiber network while renting Telefónica's radio access.

Other than those that subscribe to Sky's OTT video service, customers generally are required to subscribe for an initial contractual term of at least 1 year and may only discontinue service in accordance with the terms of their contracts. Subscription rates and related charges vary according to the services and features customers receive and the types of equipment they use, and customers are typically billed in advance on a monthly basis. Sky's video, high-speed internet, voice and wireless phone services may be sold individually or in bundles.

Advertising

Sky sells advertising and sponsorships across its owned channels and where it represents the sales efforts of third-party channels. Sky also sells targeted advertising in the U.K., Ireland and Italy, and generates revenue from online and mobile advertising and advertising across its On Demand services.

Technology and Sources of Supply

For a majority of customers, Sky's DTH video platform is delivered via one-way digital satellite transmission for the distribution of linear television channels, augmented by a set-top box with local DVR storage and high speed two-way broadband connectivity to provide access to a broad range of On Demand and other services. The Sky platform also incorporates Wi-Fi connectivity for in-home distribution enabling wires-free multi-room consumption, and Sky has also developed a range of back-end and client software applications that provide customers with access to its content across multiple third-party devices and On Demand in and out of the home. Sky's OTT video service is delivered via the internet.

Sky relies on various telecommunications providers to deliver its video, high-speed internet, voice and wireless phone services to its customers. For example, Sky relies on satellites leased from third parties to provide most of its video services. In addition, pursuant to the current regulatory regime in the U.K. and Italy, Sky is able to access networks owned by third-party telecommunication providers for a fee to provide its high-speed internet and phone services in most cases, on regulated terms.

To offer video services, in addition to its owned channels, Sky licenses programming from third-party programming providers that operate television channels. Sky attempts to secure long-term programming distribution agreements with these programming providers. The fees associated with these programming distribution agreements are generally based on the number of customers who are able to watch the programming and the platforms on which Sky provides the content. Sky seeks to include in its distribution

agreements the rights to offer such programming through multiple delivery platforms, such as through its On Demand services, online portal, mobile apps and streaming services.

Customer and Technical Services

Sky's customer service operations are increasingly a digital first offering. Its technical services group performs various tasks, including installations, plant maintenance and upgrades to its distribution system.

Sales and Marketing

Sky offers direct-to-consumer services to retail customers through customer service call centers, customer service centers, websites, telemarketing, a limited number of retail outlets, as well as through advertising via direct mail, television and the internet.

Corporate and Other

We are also pursuing other business development initiatives, such as a wireless phone service, which we launched in the second quarter of 2017, using our virtual network operator rights to provide the service over Verizon's wireless network and our existing network of in-home and outdoor Wi-Fi hotspots. The wireless phone service is offered only as part of Comcast Cable's bundled service offerings to residential customers that subscribe to its high-speed internet service within its cable distribution footprint and may in the future also be offered to our small business customers on similar terms. The wireless phone service has success-based working capital requirements, primarily associated with the procurement of handsets, which customers are able to pay for upfront or finance interest-free over 24 months, and other equipment.

Our other business interests consist primarily of the operations of Comcast Spectacor, which owns the Philadelphia Flyers and the Wells Fargo Center arena in Philadelphia, Pennsylvania.

Competition

All of our businesses operate in intensely competitive, consumer-driven and rapidly changing environments and compete with a growing number of companies that provide a broad range of communications products and services, and entertainment, news and information products and services to consumers. Technological changes are further intensifying and complicating the competitive landscape and challenging existing business models. In particular, consumers are increasingly turning to online sources for viewing and purchasing content, which has and likely will continue to reduce the number of our video customers and subscribers to our cable networks even as it makes our high-speed internet services more valuable to consumers. In addition, the increasing number of entertainment choices available has intensified audience fragmentation, which has and likely will continue to adversely affect the audience ratings of our cable networks and broadcast television programming.

Cable Communications Segment

High-Speed Internet Services

Cable Communications competes with a number of companies offering internet services, including:

- wireline phone companies and other providers of wireline internet service
- wireless phone companies and other providers of wireless internet service
- municipal broadband networks and power companies
- satellite broadband providers

Phone companies such as AT&T, CenturyLink, Frontier and Verizon have built and are continuing to build fiber-based network infrastructure farther into their networks, which allows them to provide data transmission speeds that exceed those that can be provided with traditional DSL technology, and are offering these higher-speed services in many of our service areas. Certain companies that offer DSL service have increased data transmission speeds, lowered prices or created bundled services to compete with our high-speed internet services.

Certain other companies have launched FTTH networks that provide high-speed internet services in a limited number of areas in which we operate, and certain municipalities in our service areas are also building fiber-based networks.

Various wireless companies are offering internet services using a variety of network types, including 3G and 4G, and recently 5G, wireless broadband services and Wi-Fi networks. These networks work with devices such as smartphones, laptops, tablets and mobile wireless routers, as well as wireless data cards. A growing number of commercial venues, such as retail malls, restaurants

and airports, also offer Wi-Fi service. Numerous local governments are also considering or actively pursuing publicly subsidized Wi-Fi and other internet access networks. The availability of these wireless offerings could negatively impact the demand for our high-speed internet services.

Video Services

Cable Communications competes with a number of different sources in the United States that provide news, sports, information and entertainment programming to consumers, including:

- DBS providers, including AT&T's DIRECTV and DISH Network, that transmit satellite signals to substantially all U.S. households to provide video programming and other information similar to our video services
- phone companies, including AT&T and Verizon, that have built and continue to build fiber-based networks that provide cable services similar to ours, which overlap a substantial portion of our service areas, and that in some cases offer bundled offerings that include wireless phone services
- online video distributors including:
 - virtual multichannel video providers who offer streaming services for linear programming that generally involve smaller packages of programming networks at prices lower than our traditional video service package offerings
 - subscription video on demand services, such as those offered by Amazon, Hulu and Netflix, that offer online services and devices that enable internet streaming and downloading of movies, television shows and other video programming
 - premium, cable and broadcast networks that provide content directly to consumers
- other providers that build and operate wireline communications systems in the same communities that we serve, including those operating as franchised cable operators
- satellite master antenna television systems that offer to their subscribers both improved reception of local broadcast television stations and much of the programming offered by our cable systems and generally serve MDUs, office complexes and residential developments
- other companies, such as local broadcast television stations, that provide multiple channels of free over-the-air programming, as well as video rental services and home entertainment and gaming products

Many of these competitors also have significant financial resources and have further intensified competition through mergers and acquisitions.

Voice Services

Cable Communications' voice services compete with wireline and wireless phone companies, including incumbent local exchange carriers ("ILECs") and competitive local exchange carriers ("CLECs"), and other internet-based and VoIP service providers. Certain phone companies, such as the ILECs AT&T and Verizon, have longstanding customer relationships, and extensive existing facilities and network rights-of-way. A few CLECs also have existing local networks and significant financial resources. In addition, we are increasingly competing with other phone service providers as customers replace traditional wireline phone services with wireless and internet-based phone services, such as Skype.

Business Services

Cable Communications' business services primarily compete with a variety of phone companies, including ILECs and CLECs and WAN Managed Service Providers. These companies either operate their own network infrastructure or use all or part of another carrier's network. It also competes with satellite operators who offer video services to businesses and VoIP companies that target businesses of all sizes. Our video monitoring services compete with companies that provide video surveillance services that use both traditional and cloud-based/digital solutions.

NBCUniversal Segments

Cable Networks and Broadcast Television

NBCUniversal's cable networks, broadcast networks and owned local broadcast television stations compete for viewers' attention and audience share with all forms of programming provided to viewers, including cable, broadcast and premium networks; subscription video on demand services; local broadcast television stations; home entertainment products; pay-per-view and video on demand services; online activities, such as social networking and viewing user-generated content; gaming products; and other forms of entertainment, news and information.

NBCUniversal's cable networks, broadcast networks and owned local broadcast television stations compete for the acquisition of programming and for on-air and creative talent with other cable and broadcast networks, local television stations, and subscription video on demand services. The market for programming is very competitive, particularly for sports programming, where the cost for such programming is significant.

NBCUniversal's cable networks compete with other cable networks and programming providers for carriage of their programming by traditional and virtual multichannel video providers and subscription video on demand services. Its broadcast networks compete with the other broadcast networks in markets across the United States to secure affiliations with independently owned television stations, which are necessary to ensure the effective distribution of broadcast network programming to a nationwide audience.

In addition, NBCUniversal's cable television and broadcast television studio production operations compete with other production companies and creators of content for the acquisition of story properties, for creative, performing and technical personnel, and for distribution of, and consumer interest in, their content.

Filmed Entertainment

The filmed entertainment business competes for audiences for its films and other entertainment content with other major studios and, to a lesser extent, with independent film producers, as well as with alternative forms of entertainment. The competitive position of the filmed entertainment business primarily depends on the number of films produced, their distribution and marketing success, and consumer response. The filmed entertainment business also competes to obtain creative, performing and technical talent, including writers, actors, directors and producers, as well as scripts for films. The filmed entertainment business also competes with the other major studios and other producers of entertainment content for the exhibition of its films in theaters and the distribution of its films on premium networks and on subscription video on demand services.

Theme Parks

NBCUniversal's theme parks business competes with other multi-park entertainment companies. It also competes with other providers of entertainment, lodging, tourism and recreational activities. To help maintain the competitiveness of our theme parks, we have invested and continue to invest in existing and new theme park attractions, hotels and infrastructure.

Sky Segment

Sky faces competition from a broad range of companies engaged in media, entertainment and communications services in Europe, including cable operators, providers of both paid-for and free-to-air programming, service providers making use of new fiber optic networks, other satellite television providers, digital terrestrial television providers, telecommunications providers, other internet service providers, content aggregators, home entertainment products companies, companies developing new technologies and devices, and other suppliers and providers of news, information, sports and entertainment that deliver streaming and downloading online video services. Sky's competitive position may be negatively impacted by an increase in the capacity of, or developments in, the means of delivery which its competitors use to provide their services. Sky's competitors also include organizations that are publicly funded, in whole or in part, which fulfill a public service broadcasting mandate.

Sky competes for the acquisition of programming content with a wide range of providers, particularly for sports programming, where the cost for such programming is significant.

Advertising

The cable communications business, cable networks, broadcast networks, owned local broadcast television stations and Sky compete for the sale of advertising with other television networks and stations, as well as with all other advertising platforms, such as digital, radio and print media. The willingness of advertisers to purchase advertising from us may be adversely affected by lower audience ratings at NBCUniversal's cable networks, broadcast networks and owned local broadcast television stations and Sky's owned channels. Declines in audience ratings also can be caused by increased competition for the leisure time of viewers and by

audience fragmentation resulting from the increasing number of entertainment choices available, including content from subscription video on demand services and other digital sources. In addition, advertising revenue is adversely affected by the growing use of technologies, such as DVRs and video on demand services, which give consumers greater flexibility to watch programming on a time-delayed or on-demand basis or to fast-forward or skip advertisements within programming.

Seasonality and Cyclicalities

Each of our businesses is subject to seasonal and cyclical variations. In our Cable Communications segment, our results are impacted by the seasonal nature of residential customers receiving our cable services in college and vacation markets. This generally results in fewer net customer relationship additions in the second quarter of each year.

Revenue in our Cable Communications, Cable Networks and Broadcast Television segments is subject to cyclical advertising patterns and changes in viewership levels. Advertising revenue in the U.S. is generally higher in the second and fourth quarters of each year, due in part to increases in consumer advertising in the spring and in the period leading up to and including the holiday season. Advertising revenue in the U.S. is also cyclical, with a benefit in even-numbered years due to advertising related to candidates running for political office and issue-oriented advertising. Revenue in our Cable Networks and Broadcast Television segments fluctuates depending on the timing of when our programming is aired, which typically results in higher advertising revenue in the second and fourth quarters of each year.

Our revenue and operating costs and expenses (comprised of total costs and expenses, excluding depreciation and amortization expense and other operating gains) are cyclical as a result of our periodic broadcasts of major sporting events, such as the Olympic Games, which affect our Cable Networks and Broadcast Television segments, and the Super Bowl, which affects our Broadcast Television segment. In particular, our advertising revenue increases due to increased demand for advertising time and our distribution revenue increases in the period of these broadcasts. Our operating costs and expenses also increase as a result of our production costs for these broadcasts and the amortization of the related rights fees.

Revenue in our Filmed Entertainment segment fluctuates due to the timing, nature and number of films released in movie theaters, on DVDs, and through various other distribution platforms. Release dates are determined by several factors, including competition and the timing of vacation and holiday periods. As a result, revenue tends to be seasonal, with increases experienced each year during the summer months and around the holiday season. Content licensing revenue in our Cable Networks, Broadcast Television and Filmed Entertainment segments also fluctuates due to the timing of when our content is made available to licensees.

Revenue in our Theme Parks segment fluctuates with changes in theme park attendance that result from the seasonal nature of vacation travel and weather variations, local entertainment offerings and the opening of new attractions, as well as with changes in currency exchange rates. Our theme parks generally experience peak attendance during the spring holiday period, the summer months when schools are closed and the holiday season.

Our Sky segment results are impacted by the seasonal nature of residential customers receiving our DTH and OTT video services, including the start of the new soccer seasons and the Christmas holiday. This generally results in greater net customer relationship additions and higher subscriber acquisition costs in the fourth quarter of each year due to higher marketing expenses. Growth in Sky's wireless phone business is also similarly impacted by seasonal trends, as well as by the length of consumer cycles to upgrade their handsets.

Exclusive tier one sports rights, such as domestic and UEFA Champions League soccer, Formula 1, and English cricket, play a key role within Sky's wider content strategy. In Europe broadcasting rights for tier one sports are usually tendered through a competitive auction process, with the winning bidder or bidders acquiring rights over a three to five-year period. This creates some level of cyclicalities for Sky, although the staggered timing of tier one sports rights auctions usually gives Sky time to react to any material changes in the competitive dynamics of the prevailing market.

The results of Sky's advertising business are subject to cyclical advertising patterns and changes in viewership levels. This includes seasonally higher audience levels in winter months and increased competition during major sporting events where public service broadcasters lease the rights, such as the Olympic Games and the FIFA World Cup™. The results for Sky's content business are also subject to fluctuations as a result of changes in timing, nature and quantity of original programming distributed to other markets.

Legislation and Regulation

The Communications Act of 1934, as amended (the “Communications Act”), and FCC regulations and policies affect significant aspects of our businesses that operate in the United States. These businesses are also subject to other regulation by federal, state and local authorities and to agreements we enter into with local cable franchising authorities. In addition, our international businesses are subject to the laws and the jurisdiction of the foreign regulatory authorities where they operate.

Legislators and regulators at all levels of government frequently consider changing, and sometimes do change, existing statutes, rules or regulations, or interpretations of existing statutes, rules or regulations, or prescribe new ones, any of which may significantly affect our businesses. These legislators and regulators have been active in considering rulemakings and legislation, and they, along with some state attorneys general and foreign governmental authorities, have also been active in conducting inquiries and reviews, regarding our services. Any future legislative, judicial, regulatory or administrative actions may increase our costs or impose additional restrictions on our businesses, some of which may be significant. The U.S. Congress may consider proposals to address communications issues, including whether it should rewrite the entire Communications Act to account for changes in the communications marketplace, whether it should enact new, permanent open internet requirements, and whether it should fund new broadband infrastructure. We are unable to predict the outcome or effects of any of these potential actions or any other legislative or regulatory proposals on our businesses.

The following paragraphs summarize material existing and potential future legal and regulatory requirements affecting our businesses, although reference should be made to the Communications Act, FCC regulations and other legislation and regulations for further information.

Cable Communications Segment

High-Speed Internet Services

We provide high-speed internet services to our customers. Many of these services are subject to a number of regulatory obligations described below. As an internet service provider (“ISP”), we are also subject to a requirement to implement certain network capabilities to assist law enforcement in conducting surveillance of persons suspected of criminal activity. From time to time, the FCC considers imposing new regulatory obligations on ISPs. New broadband regulations, if adopted, may have adverse effects on our businesses.

Open Internet Regulations

In 2015, the FCC reclassified broadband internet access service as a “telecommunications service” subject to new open internet regulations and certain common carrier regulations under Title II of the Communications Act. These included, among other things, prohibiting ISPs from blocking access to lawful content; impairing or degrading lawful internet traffic on the basis of content, applications or services (“throttling”); prioritizing certain internet traffic in exchange for consideration (“paid prioritization”); and generally prohibiting ISPs from unreasonably interfering with or unreasonably disadvantaging consumers’ ability to access and use the lawful internet content, applications, services or devices of their choosing or edge providers’ ability to make lawful content, applications, services or devices available to consumers (“general conduct”).

In 2017, the FCC reversed its prior classification of broadband internet access service as a Title II telecommunication service and classified it as an “information service” under Title I. In addition, it eliminated its prior no-blocking, no-throttling, no paid-prioritization and general conduct rules, stating that jurisdiction to regulate ISP conduct would rest at the FTC. In addition, it revised the transparency rule to require ISPs to disclose any blocking and throttling practices, and any paid or affiliated prioritization practices associated with their broadband offerings. We have disclosed that we do not block, throttle, or engage in affiliated or paid prioritization, and have committed not to block, throttle, or discriminate against lawful content. The FTC has authority to enforce these public commitments, and the FCC has authority to enforce compliance with its transparency rule. The Order also preempted any state and local laws and regulations that conflict with the FCC’s deregulatory policies.

The FCC’s 2017 decision is currently on appeal in federal court. In addition, several states have passed or introduced legislation, or have adopted executive orders, that impose Open Internet requirements in a variety of ways. Certain of these state initiatives have been challenged in court, and additional challenges may be filed. Such attempts by the states to regulate have the potential to create a patchwork of differing and/or conflicting state regulations. Congress may also consider legislation addressing these regulations and the regulatory framework for broadband internet access services. We cannot predict whether or how the rules might be changed, the impact of potential new legislation or the outcome of any litigation.

Broadband Deployment/Infrastructure Initiatives

In 2018, the FCC adopted rules aimed at removing barriers to the deployment of broadband infrastructure, including the preemption of certain state and local laws or regulations that may unreasonably impede the deployment of wireless broadband networks. These orders are being challenged in federal court, and we cannot predict the outcome of the litigation. If the orders are upheld, some of these reforms may create regulatory imbalances that favor wireless services over wireline broadband services like our own. The FCC is considering similar reforms for wireline networks, including our networks, as part of its ongoing efforts to promote broadband deployment. We cannot predict whether or how any FCC rules might be changed, how state or local laws or regulations may be impacted, or how such changes may affect our business. In addition, as part of any federal infrastructure program, governmental subsidies or funding of additional internet broadband networks may be encouraged. We cannot predict how successful those efforts will be and how they might affect our business.

Municipally Owned Broadband Networks

A number of local municipalities operate municipally owned broadband networks and there may be further efforts by local governments to expand or create government-owned networks. Certain states have enacted laws that restrict or prohibit local municipalities from operating municipally owned broadband networks, and there may be efforts in other state legislatures to restrict the development of government-owned networks, although some may choose to ease or facilitate such networks. We cannot predict how successful those efforts will be and how they might affect our business.

Video Services

Program Carriage

FCC regulations prohibit us from unreasonably restraining the ability of an unaffiliated video programming network to compete fairly by discriminating against the network on the basis of its non-affiliation in the selection, terms or conditions for its carriage. In addition, Cable operators and other multichannel video programming distributors (“MVPDs”) in the United States are prohibited from requiring as a condition of carriage a financial interest in, or exclusive distribution rights for, a video programming network. We have been involved in program carriage disputes at the FCC and may be subject to new complaints in the future.

Must-Carry/Retransmission Consent

Cable operators are required to carry, without compensation, programming transmitted by most local commercial and noncommercial broadcast television stations. As an alternative to this “must-carry” requirement, local broadcast television stations may choose to negotiate with the cable operator for “retransmission consent,” under which the station gives up its must-carry rights and instead seeks to negotiate a carriage agreement with the cable operator, which frequently will involve payments to the station. We currently pay certain local broadcast television stations in exchange for their required consent for the retransmission of the stations’ broadcast programming to our video services customers and expect to continue to be subject to demands for increased payments and other concessions from local broadcast television stations. In 2017, the FCC adopted an order relaxing the broadcast media ownership rules and is considering additional revisions to the rules, which could lead to further broadcast television station consolidation. The FCC also adopted an order authorizing voluntary implementation of a new broadcast technical standard that permits broadcasters to seek carriage of signals using the new standard through retransmission consent. Together, these actions may impact retransmission consent negotiations and the fees we pay broadcasters. For information on must-carry and retransmission consent issues relating to our broadcast television business, see “NBCUniversal Segments - Broadcast Television” below and refer to the “Must-Carry/Retransmission Consent” discussion within that section.

Pricing and Packaging

We are subject to rate regulation of charges for certain of our video service, equipment and installation in certain communities in Massachusetts, but all of the other areas we serve have unregulated prices. In addition to the FCC’s rate regulation rules, certain state entities monitor and may challenge the marketing and advertising of our services. For example, in 2016, the Washington State Attorney General filed a lawsuit, currently being litigated in state court, alleging that our service protection plan, an optional plan that protects customers from incurring charges for service visits to diagnose and repair installed in-home wiring for residential cable services, violates state consumer protection laws. We cannot predict the outcome of this litigation or whether other states may file similar suits.

Pole Attachments

The FCC regulates the rates, terms and conditions that most pole-owning utility companies charge cable operators and telecommunications carriers for allowing attachments to their poles. States are permitted to preempt FCC jurisdiction and regulate the rates, terms and conditions of attachments themselves, and many states in which we operate have done so and have generally followed the FCC’s pole attachment rate standards, which set rates for telecommunications service pole attachments to levels at or near the rates for cable service attachments. The rates, terms and conditions of some municipal and cooperative pole owners, however, are not regulated by the FCC or states.

Franchising

Cable operators generally operate their cable systems under nonexclusive franchises granted by local or state franchising authorities. While the terms and conditions of franchises vary materially from jurisdiction to jurisdiction, franchises typically last for a fixed term, obligate the franchisee to pay franchise fees and meet service quality, customer service and other requirements, and are terminable if the franchisee fails to comply with material provisions. Franchising authorities also may establish reasonable requirements for public, educational and governmental access programming. The Communications Act also contains provisions governing the franchising process, including renewal procedures designed to protect incumbent franchisees against arbitrary denials of renewal, including unreasonable renewal conditions. We believe that our franchise renewal prospects are generally favorable but cannot guarantee the future renewal of any individual franchise. In response to a remand by the U.S. Court of Appeals for the Sixth Circuit, the FCC has proposed to clarify that in-kind contribution requirements in a cable franchise are generally subject to the statutory five percent cap on franchise fees and reaffirm that state and local authorities are barred from imposing duplicative franchise and/or fee requirements on the operation of cable systems to provide non-cable services. We cannot predict the outcome of this proceeding or its impact on our businesses.

Voice Services

We provide voice services using VoIP technology. The FCC has adopted a number of regulations for providers of nontraditional voice services such as ours, including regulations relating to privacy of customer proprietary network information, local number portability duties and benefits, disability access, E911, law enforcement assistance, outage reporting, Universal Service Fund contribution obligations, rural call completion, back-up power, service discontinuance and certain regulatory filing requirements. The FCC has not yet ruled on whether VoIP services such as ours should be classified as an “information service” or a “telecommunications service” under the Communications Act. The classification determination is important because telecommunications services are regulated more extensively than information services. Recently, the U.S. Court of Appeals for the Eighth Circuit held that VoIP is an information service and preempted state regulation of VoIP, but that ruling is limited to the seven states located in the Eighth Circuit. State regulatory commissions and legislatures in other jurisdictions may continue to consider imposing regulatory requirements on our voice services as long as the regulatory classification of VoIP remains unsettled at the federal level.

Voice Interconnection

Because the FCC has not determined the appropriate classification of our voice services, providers of VoIP services typically either secure CLEC authorization or obtain interconnection to traditional wireline phone company networks by contracting with an existing CLEC, which has the right, as a telecommunications carrier, to request and obtain interconnection with the traditional wireline phone companies. We have arranged for such interconnection rights through affiliated CLECs. If a regulatory or judicial authority were to deny our ability to interconnect through one of our affiliated CLECs, our ability to provide voice services and compete in the area in question would be negatively impacted. The FCC regulates the arrangements by which telecommunications carriers compensate one another for exchanged traffic and has affirmed the right of CLECs to collect intercarrier compensation when providing interconnection for VoIP providers.

Wireless Service

In 2017, we began offering a wireless voice and data service. We offer this service using our mobile virtual network operator (“MVNO”) rights to provide the service over Verizon’s wireless network. MVNOs are subject to many of the same FCC regulations as facilities-based wireless carriers (e.g., E911 services, local number portability, etc.), as well as certain state or local regulations. The FCC or other regulatory authorities may adopt new or different regulations for MVNOs and/or mobile broadband providers in the future, or impose new taxes or fees, which could adversely affect our wireless phone service offering or our business generally.

Universal Service

The federal Universal Service program generally requires us and other phone service providers to pay a fee based on revenue from interstate and international services into a fund used to subsidize the provision of voice services and broadband-capable voice networks in high-cost areas, the provision of voice services to low-income consumers, and the provision of internet, voice and telecommunications services to schools, libraries and certain health care providers. Some states also have analogous programs that support service in high-cost areas or to low-income consumers.

The FCC has shifted its focus away from supporting traditional telephone service, and toward subsidizing deployment of broadband-capable networks and broadband facilities. This shift could assist some of our competitors. For example, the FCC has revised the high-cost federal Universal Service mechanism to support broadband-capable networks and substantially has revised the program that provides Universal Service support for services to schools and libraries to begin phasing out support for voice services, with greater support directed to broadband services and the deployment of Wi-Fi networks. Similarly, the FCC has expanded its Lifeline subsidy program for low-income consumers to include broadband services in addition to voice services. The

FCC or Congress may revisit these subsidy programs and how they are funded. We cannot predict whether or how these programs will be changed in the future.

NBCUniversal Segments

Cable Networks

Program Access

The Communications Act and FCC regulations generally prevent cable networks affiliated with cable operators from favoring cable operators over competing MVPDs. The FCC and Congress have considered proposals that would require companies that own multiple cable networks to make each of their networks available individually when negotiating distribution agreements with MVPDs and potentially with online video distributors. We currently offer our cable networks both on a bundled basis and, when requested, individually. We have been involved in program access disputes at the FCC and may be subject to new complaints in the future.

Children's Programming

Under federal regulations, the amount of commercial content that may be shown on cable networks, broadcast networks and broadcast television stations during programming originally produced and broadcast primarily for an audience of children under 13 years of age is limited, and certain television station programming must serve the educational and informational needs of children under 17 years of age. In 2018, the FCC initiated a proceeding to review its regulations regarding children's programming, and we cannot predict the outcome of this proceeding.

Broadcast Television

Licensing

Local broadcast television stations may be operated only in accordance with a license issued by the FCC upon a finding that the grant of the license will serve the public interest, convenience and necessity. The FCC grants broadcast television station licenses for specific periods of time, which may be renewed with or without conditions. The FCC recently renewed all of our broadcast television station licenses without conditions. Although our licenses have been renewed, there can be no assurance that we will always obtain renewal grants.

Local Television Ownership

The FCC recently revised its rules to generally permit a licensee to own up to two broadcast stations in the same DMA as long as at least one of the stations is not among the top four-ranked stations in the DMA based on audience share. In addition, the new rules permit a licensee to own up to two stations ranked in the top four in a DMA based on a case-by-case analysis of the circumstances surrounding the proposed combination. These recent changes are subject to judicial appeal. These ownership restrictions do not apply if the signal coverage of the stations involved do not overlap in the same market. As part of its 2018 quadrennial review of media ownership regulations, the FCC raised questions about the two-station-per-DMA ownership limit and the criteria by which top-four combinations should be assessed.

National Television Ownership

The Communications Act and FCC regulations limit the number of broadcast television stations one entity may own or control nationally. No entity may have an attributable interest in broadcast television stations that reach, in the aggregate, more than 39% of all U.S. television households. The FCC also has a rule that affords a 50% discount to UHF stations (channels 14 and above) in calculating the extent of an individual station owner's holdings under the national cap. The FCC has initiated a proceeding to consider whether to retain the 50% discount and whether to modify the national television ownership limit. Our owned broadcast television station reach does not exceed the current limit even without considering the discount for UHF stations, but elimination of the 50% discount without an increase in the 39% national cap would place us closer to the national cap and limit our flexibility to acquire stations in the future.

Foreign Ownership

The Communications Act generally limits foreign ownership in a broadcast television station to 20% direct ownership and 25% indirect ownership, although the limit on indirect ownership can be waived if the FCC finds it to be in the public interest.

Dual Network Rule

Each of the four major broadcast television networks - ABC, CBS, Fox and NBC - is prohibited from being under common ownership or control with another of the four. As part of its 2018 quadrennial review of media ownership regulations, the FCC raised questions about whether the dual network rule remains necessary in the public interest.

Must Carry/Retransmission Consent

Every three years, each commercial television station must elect for each cable system in its DMA either must carry or retransmission consent. A similar regulatory scheme applies to satellite providers. For the current three-year period, which commenced on January 1, 2018, all of our owned NBC broadcast television stations and our owned Telemundo broadcast television stations elected retransmission consent.

Indecency

A federal statute and FCC regulations prohibit the broadcast of obscene material on television stations at any time and indecent or profane material between the hours of 6 a.m. and 10 p.m. From time to time, we have received and may receive in the future letters of inquiry from the FCC prompted by complaints alleging that certain programming on our owned local broadcast television stations included indecent or profane material.

Filmed Entertainment

Our filmed entertainment business is subject to “trade practice laws” in effect in 25 states and Puerto Rico relating to theatrical distribution of motion pictures. In countries outside the United States, a variety of existing or contemplated laws and regulations may affect our ability to distribute and license motion picture and television products, as well as consumer merchandise products. The ability of countries to deny market access or refuse national treatment to products originating outside their territories is regulated under various international agreements.

Theme Parks

Our theme parks are subject to various regulations, including laws and regulations regarding environmental protection, privacy and data protection, consumer product safety and theme park operations, such as health, sanitation, safety and fire standards, as well as liquor licenses.

Sky Segment

Sky is subject to regulation primarily under Austrian, German, Irish, Italian, U.K. and European Union (“EU”) law, including telecommunications- and media-specific regulation described below, as well as regulation under generally applicable laws, such as competition, consumer protection, data protection and taxation. Sky is currently, and may be in the future, subject to proceedings or investigations from regulatory and antitrust authorities in the jurisdictions in which it operates. In addition, in connection with our acquisition of Sky, we have made certain legally binding commitments with respect to Sky’s operations, including for example, to maintain annual funding for Sky News in an amount no lower than Sky News’ 2017 fiscal year expenditures, as adjusted by inflation, until 2029.

Platform Services

In the U.K., under the U.K. Communications Act of 2003, Sky is required to ensure that agreements to provide electronic program guide (“EPG”) and conditional access (“CA”) services to other programming providers are on fair, reasonable, and non-discriminatory terms, among other things, so that those providers’ content is available on Sky’s satellite platform via the EPG on Sky’s set-top boxes. Sky also has voluntarily committed to Ofcom, the U.K. regulator, to provide access control services to third parties that enable them to provide interactive services. Sky is subject to similar EPG and CA obligations in Germany under the Interstate Treaty on Broadcasting and Telemedia, as amended by the 20th State Broadcasting Amendment Treaty (the “RStV”).

Television Channels

Sky holds a number of licenses and authorizations for its portfolio of pay TV channels. In the U.K., as a broadcast licensee, Sky is subject to various codes issued by Ofcom affecting the content and delivery of these channels. These codes include, for example, Ofcom’s Broadcasting Code, the Code on the Scheduling of Television Advertising, and the Cross-Promotion Code. Sky also holds various nationwide broadcast licenses in Germany, and must comply with the RStV; the applicable laws of the federal state in Germany that has granted the broadcasting license; and with the Interstate Treaty on the Protection of Minors. These include regulations regarding media concentration, television advertising, accessibility, airtime for commercials and teleshopping, sponsorship, and the requirement for a clear distinction between program content and advertising. Sky is also a holder of broadcasting licenses in Austria and is subject to broadcast regulations under the Austrian Act on Audiovisual Media Services, such as regulations governing content, advertisements, and the protection of children. In addition, Sky is subject to Austrian rules on media plurality, which prohibit broadcasters in Austria from exceeding certain media coverage thresholds. In Italy, Sky must comply with various requirements regarding broadcast authorizations, including provisions that protect media plurality, obligations requiring broadcasters to guarantee equal treatment between political parties during elections, advertising limits, the protection of children and parental controls, the protection of IP rights, and consumer protections. NBCUniversal’s international television channels are subject to similar regulations in jurisdictions in which they operate.

High-Speed Internet and Voice Services

Sky provides broadband and voice services in the U.K. and Ireland pursuant to wholesale distribution agreements that third-party broadband and telecommunications companies are required to make available under applicable laws in those jurisdictions. Material changes to these regulations could affect Sky's business. Sky is also subject to EU open internet regulations, which prohibit the blocking, throttling, or discrimination of online content, applications, and services and require ISPs to disclose their traffic management, throughput limitations, and other practices impacting quality of service in customer contracts.

Other Areas of Regulation

Intellectual Property

Copyright, trademark, unfair competition, patent, trade secret and other proprietary-rights laws of the United States and other countries help protect our intellectual property rights. In particular, unauthorized copying, distribution, and piracy of programming and films over the internet, through devices, software and websites, and through counterfeit DVDs, and other platforms, interfere with the market for copyrighted works and present challenges for NBCUniversal's cable networks, broadcast television and filmed entertainment businesses and Sky's businesses. We have actively engaged in the enforcement of our intellectual property rights and likely will continue to expend substantial resources to protect our content. Although many legal protections exist to combat such practices, the extent of copyright protection and the use of technological protections are controversial. Modifications to existing laws, a weakening of these protections, or a failure of existing laws, in the United States or internationally, to adapt to new technologies could have an adverse effect on our ability to license and sell our programming.

U.S. copyright laws also require that our video business contribute a percentage of revenue to a federal copyright royalty pool in exchange for retransmitting copyrighted material in broadcast signals under a cable compulsory license and that we pay standard industry licensing fees for the public performance of music in the programs we create or distribute. The cable compulsory license royalties we pay are subject to audit by copyright owners, and we cannot predict how any disputes regarding our royalty calculations will impact those fees in the future. In addition, the Copyright Office has initiated a rulemaking to consider how royalty payments should be calculated under the cable compulsory license. We cannot predict the outcome of this rulemaking, but there is a risk that it could result in higher royalty payments. It is also possible that Congress will eliminate or modify the cable compulsory license in the future, which could impact the retransmission of broadcast signals over cable systems. The music fees we pay are typically renegotiated when we renew licenses with performing rights organizations. The landscape for music licensing is constantly changing. New performing rights organizations have formed to seek higher royalties for the use of music they represent, and other organizations seek royalties for performance rights for which no compensation is currently required. We cannot predict how renegotiation of current rights and future changes in music royalties will affect the music fees that we pay.

Privacy and Data Security Regulation

The Communications Act generally restricts cable operators' nonconsensual collection and disclosure to third parties of cable customers' personally identifiable information, except for rendering service, conducting legitimate business activities related to the service, and responding to legal requests. We are also subject to various state and federal regulations that provide privacy protections for customer proprietary network information related to our voice services.

The FTC generally exercises oversight of consumer privacy protections using its enforcement authority over unfair and deceptive acts or practices.

In addition, certain states have exercised oversight of consumer privacy protections in their respective states. The FTC and state attorney generals regularly initiate efforts to update or enforce transparency requirements about the collection and use of consumer information, which may require ongoing review of new and rapidly evolving technologies and methods for delivering content and advertising to ensure that appropriate notice is given to consumers and consent is obtained where required.

In May 2018, the EU's General Data Protection Regulation ("GDPR"), which broadly regulates the processing of personal data collected from individuals in the EU regardless of whether the processing actually takes place in the EU, came into effect. GDPR and the Member States' legislation implementing the GDPR, affect our ability to process certain personal data. We cannot predict how regulators will interpret the scope or requirements of GDPR.

Privacy and data security legislation remained a priority issue in 2018 in many U.S. states and localities, as well as foreign jurisdictions outside of the EU. For example, California enacted the California Consumer Privacy Act ("CCPA"), which broadly regulates the sale of the consumer information of California residents and grants California residents certain rights to, among other things, access and delete data about them in certain circumstances. CCPA goes into effect on January 1, 2020, and compliance with the CCPA may increase the cost of providing our services in California. Other states are considering similar proposals. Such attempts by the states to regulate have the potential to create a patchwork of differing and/or conflicting state regulations.

Additionally, there are pending federal legislative proposals that, if enacted, could create new consumer privacy protections or impose new requirements on entities that collect and use consumer personal information, including us. We cannot predict whether such legislation will be enacted at the federal or state level and, if so, the impact of any such laws on our business.

We are also subject to stringent data security and data retention requirements that apply to website operators and online services directed to children under 13 years of age, or that knowingly collect or post personal information from children under 13 years of age. In addition, we are subject to state and federal laws and regulations regarding data security that primarily apply to any person's sensitive personal information that could be used to commit identity theft. Most states have security breach notification laws that generally require a business to give notice to consumers and government agencies when certain information has been disclosed to an unauthorized party due to a security breach, and the FCC has adopted security breach rules for voice services. Several states have also enacted general data security requirements to safeguard consumer information, including the proper disposal of consumer information.

We are also subject to state and federal "do not call" laws regarding telemarketing and state and federal laws regarding unsolicited commercial emails, as well as FCC regulations relating to automated telemarketing calls, texts and SMS messages.

FCC Spectrum Auction and Repacking

In 2017, as a result of an incentive auction conducted by the FCC to repurpose television broadcast spectrum for mobile broadband use, NBCUniversal sold broadcast spectrum rights associated with television stations in three of its markets. Those stations vacated their sold spectrum but continue to operate by sharing channels with other NBCUniversal stations in those markets. The FCC assigned 23 of NBCUniversal's other television stations that did not sell their spectrum rights to new channels; those stations are in the process of transitioning to their new channels in a post-auction repacking process that is scheduled to conclude in the third quarter of 2020, and the FCC will reimburse those stations for a portion of their reasonable relocation costs (subject to a nationwide aggregate limit of \$2.75 billion). As a result of the repacking process, Comcast will have to make changes to its cable systems to accommodate broadcasters on their newly assigned channels, and will be reimbursed by the FCC for a portion of those related costs (subject to a nationwide aggregate limit of \$2.75 billion).

In addition, we acquired 73 new mobile broadband licenses in this auction for \$1.7 billion. We will be obligated to meet certain regulatory requirements concerning the use of these licenses over the coming years.

FCC 5G Spectrum Proceedings and Other Wireless Laws and Regulations

In multiple regulatory proceedings, the FCC is currently considering establishing and/or modifying its rules to make available additional spectrum that will likely be used to provide the next generation of commercial wireless broadband services, commonly referred to as 5G services. Some of this spectrum is currently used for satellite delivery of broadcast and cable programming to cable headends and broadcast stations, including our own, and there is a risk that such satellite delivery could be disrupted if the FCC were to adopt certain proposals. In addition, there is potential for new legislation or FCC regulations that could enable wireless providers to offer video and other services over their networks subject to different, and possibly fewer, regulatory obligations than the services we provide. We cannot predict what rules or legislation, if any, will ultimately be adopted or how any such changes would affect our businesses.

State and Local Taxes

Some states and localities have imposed or are considering imposing, through both legislative and administrative channels, new or additional taxes or fees on, or limiting or eliminating incentives or credits earned or monetized by, the businesses operated by our Cable Communications and NBCUniversal segments, or imposing adverse methodologies by which taxes, fees, incentives or credits are computed, earned or monetized. These include combined reporting or other changes to general business taxes, central assessments for property tax and taxes and fees on the businesses operated or services provided by our Cable Communications and NBCUniversal segments. In some situations, DBS providers and other competitors that deliver their services over a high-speed internet connection do not face the same state tax and fee burdens. Congress has also considered, and may consider again, proposals to bar or limit states from imposing taxes on these DBS providers or other competitors that are equivalent to the taxes or fees that we pay. The Internet Tax Freedom Act, which prohibits most states and localities from imposing sales and other taxes on our internet access charges, was made permanent by 2016 legislation; however, some jurisdictions have or may assert that certain taxes akin to right-of-way fees are not preempted by Internet Tax Freedom Act.

Environmental Matters

Certain of our business operations are subject to environmental laws and regulations since they involve air emissions, wastewater discharges and the use, disposal and cleanup of toxic and hazardous substances. Any failure to comply with environmental requirements could result in monetary fines, civil or criminal sanctions, third-party claims or other costs or liabilities. Environmental requirements have become more stringent over time, and pending or proposed new regulations could impact our operations or costs.

U.K. Exit from the European Union

The telecommunications and media regulatory framework applicable to Sky and NBCUniversal's businesses in the U.K. and the EU may be subject to greater uncertainty in the event that the U.K. leaves the EU. We cannot predict the extent of any potential changes to the regulatory framework involving U.K. and EU regulation of telecommunications and media, or changes to certain mutual recognition arrangements for media and broadcasting.

Other Regulations

U.S. states and localities, and various regulatory authorities actively regulate other aspects of our businesses, including accessibility to our video and voice services and broadcast television programming for people with disabilities, customer service standards, inside wiring, cable equipment, leased access, loudness of commercial advertisements, advertising, Emergency Alert System, equal employment opportunity and other employment-related laws, lottery programming, recordkeeping and public file requirements, regulatory fees and technical standards relating to the operation of cable systems and television stations. In addition, our international businesses are subject to various international regulations, including those that cover television broadcasting, programming and advertising. We are occasionally subject to enforcement actions and investigations at the FCC and other federal, state, and local agencies, as well as foreign governments and regulatory authorities, which can result in us having to pay fines to the agency or being subject to other sanctions.

Employees

As of December 31, 2018, we had approximately 184,000 full-time and part-time employees calculated on a full-time equivalent basis. Of these employees, approximately 88,000, 64,000 and 30,000 were associated with our cable communications business, our NBCUniversal businesses and our Sky business, respectively. We also use freelance and temporary employees in the normal course of our business.

Caution Concerning Forward-Looking Statements

The SEC encourages companies to disclose forward-looking information so that investors can better understand a company's future prospects and make informed investment decisions. In this Annual Report on Form 10-K, we state our beliefs of future events and of our future financial performance. In some cases, you can identify these so-called "forward-looking statements" by words such as "may," "will," "should," "expects," "believes," "estimates," "potential," or "continue," or the negative of these words, and other comparable words. You should be aware that these statements are only our predictions. In evaluating these statements, you should consider various factors, including the risks and uncertainties listed in "Risk Factors" and in other reports we file with the SEC.

Additionally, we operate in a highly competitive, consumer-driven and rapidly changing environment. This environment is affected by government regulation; economic, strategic, political and social conditions; consumer response to new and existing products and services; technological developments; and, particularly in view of new technologies, the ability to develop and protect intellectual property rights. Our actual results could differ materially from our forward-looking statements as a result of any of such factors, which could adversely affect our businesses, results of operations or financial condition. We undertake no obligation to update any forward-looking statements.

Item 1A: Risk Factors

Our businesses currently face a wide range of competition, and our businesses and results of operations could be adversely affected if we do not compete effectively.

All of our businesses operate in intensely competitive, consumer-driven and rapidly changing environments and compete with a growing number of companies that provide a broad range of communications products and services and entertainment, news and information content to consumers. Online video distribution platforms are further intensifying and complicating the competitive landscape and influencing consumer behavior, which is discussed in the risk factor immediately below under the heading "Changes in consumer behavior driven by online video distribution platforms for viewing content could adversely affect our businesses and challenge existing business models."

Competition for Cable Communications' cable services consists primarily of phone companies with fiber-based networks and DBS providers that typically offer features, pricing and packaging for services comparable to ours. Some of these competitors are also offering smaller packages of channels at price points lower than our standard packages, both through traditional and online video distribution platforms, which could cause us to offer more customized programming packages that may be less profitable. Consolidation between phone companies (which are also wireless distributors) and content providers in the United States provides competitors with the ability to offer free or lower cost streaming services for viewing their content, potentially on an exclusive basis, through unlimited data-usage plans for their internet or wireless phone services. Additional companies, some with significant financial resources, continue to enter or are seeking to enter the video distribution market, either by offering OTT streaming services or selling devices that aggregate viewing of various OTT services.

Sky faces competition in video, high-speed internet and voice services from cable and/or telecommunications providers in each of its European markets. More providers in Europe now offer customers bundles of services, which has increased competition. The intensity of this competition has increased in recent years, including as a result of OTT streaming services.

Cable Communications' and Sky's high-speed internet services compete primarily against phone companies with fiber-based networks offering speeds and pricing comparable to ours. Wireless internet services, such as 4G and 5G wireless broadband services, satellite-delivered internet services and Wi-Fi networks, and devices such as smartphones, tablets, wireless data cards, and mobile wireless routers that connect to such devices, also may compete with our high-speed internet services, particularly as wireless technology evolves. Some municipalities in the United States own and operate their own broadband networks, and additional municipalities may do so as well. Cable Communications' and Sky's wireline voice services are facing increased competition as customers replace wireline phones with wireless and internet-based phone services.

We continue to seek ways to enhance the value of Cable Communications' cable services network, such as by growing high-speed internet services and business services and by launching additional services, such as our security and automation services. Sky also is seeking ways to enhance the value of its services. There can be no assurance that we can execute on these and other initiatives in a manner sufficient to grow or maintain our Cable Communications or Sky segment revenue, maintain Cable Communications or Sky segment operating margins or to compete successfully in the future.

Each of NBCUniversal's businesses and Sky also face substantial and increasing competition from providers of similar types of content, as well as from other forms of entertainment and recreational activities. NBCUniversal and Sky must compete to obtain talent, content and other resources required in operating these businesses.

The ability of all of our businesses to compete effectively depends on our perceived image and reputation among our various constituencies, including our customers, consumers, advertisers, investors and government authorities. Our ability to compete will be negatively affected if we do not provide our customers with a satisfactory customer experience.

There can be no assurance that we will be able to compete effectively against existing or newer competitors or that competition will not have an adverse effect on our businesses. For a more detailed description of the competition facing our businesses, see Item 1: Business and refer to the "Competition" discussion within that section.

Changes in consumer behavior driven by online video distribution platforms for viewing content could adversely affect our businesses and challenge existing business models.

Distribution platforms for viewing and purchasing content over the internet have been, and will likely continue to be, developed that further increase the number of competitors that all our businesses face and challenge existing business models. These distribution platforms are driving changes in consumer behavior as consumers seek more control over when, where and how they consume content and access communications services, and how much they pay for such content.

Consumers are increasingly turning to online sources for viewing and purchasing content, which has and likely will continue to reduce the number of Cable Communications' video customers and subscribers to NBCUniversal's cable networks even as it makes Cable Communications' high-speed internet services more important to consumers. While these changes are primarily affecting our U.S. businesses today, there can be no assurance that they will not also affect Sky's businesses to a similar extent in the future, even with Sky offering a standalone OTT video streaming service. Although we have attempted to adapt our video service offerings to changing consumer behaviors, for example, by deploying the X1 platform and adding apps such as Netflix and Amazon Prime Video on set-top boxes, virtual multichannel video providers, online video distributors and programming networks providing their content directly to consumers over the internet rather than through traditional video distribution services continue to emerge, gain consumer acceptance and disrupt traditional video distribution services. Many of these service offerings charge no fee or a lower fee than traditional video packages for access to their content, which could have an adverse effect on demand for Cable Communications' and Sky's video services, including for expanded video packages, premium networks, and DVR and On Demand services.

An increasing number of companies offering OTT streaming services, including some with exclusive high-quality original video programming, as well as programming networks offering content directly to consumers over the internet, have increased the number of entertainment choices available to consumers, which has intensified audience fragmentation. The increase in entertainment choices adversely affects the audience ratings of NBCUniversal's cable networks and broadcast television programming and Sky's owned television channels. Time-shifting technologies, such as video on demand services and DVR and cloud-based recording services, also reduce the viewing of content through traditional and virtual multichannel video providers, which has caused and likely will continue to cause audience ratings declines for NBCUniversal's cable networks and broadcast television programming and Sky's owned television channels, and may adversely affect the price and amount of advertising that advertisers are willing to purchase from us and the amount NBCUniversal and Sky receive for distribution of their content.

The success of any of these ongoing or future developments or our failure to effectively anticipate or adapt to emerging competitors or changes in consumer behavior, including among younger consumers, could have an adverse effect on our competitive position, businesses and results of operations.

A decline in advertisers' expenditures or changes in advertising markets could negatively impact our businesses.

Our cable communications, cable networks, broadcast television, and Sky businesses compete for the sale of advertising time with other television networks and stations, as well as with all other advertising platforms, such as digital media, radio and print. We derive substantial revenue from the sale of advertising, and a decline in expenditures by advertisers, including through traditional linear television distribution models, could negatively impact our results of operations. Declines can be caused by the economic prospects of specific advertisers or industries, increased competition for the leisure time of viewers, such as from social media and video games, and audience fragmentation, increased viewing of ad-free content through online video distribution platforms, regulatory intervention regarding where advertising may be placed, or the economy in general. In addition, advertisers' willingness to purchase advertising from us may be adversely affected by lower audience ratings, which many of NBCUniversal's networks and Sky's television channels have experienced and likely will continue to experience. Advertising sales and rates also are dependent on the methodology used for audience measurement and could be negatively affected if methodologies do not accurately reflect actual viewership levels. For example, certain methods of viewing content, such as viewing content through many online video distribution platforms or delayed viewing on DVRs, might not be counted in audience measurements or may generate less, if any, revenue than traditional linear television distribution methods, which could have an adverse effect on our advertising revenue.

Our businesses depend on keeping pace with technological developments.

Our success is, to a large extent, dependent on our ability to acquire, develop, adopt and leverage new and existing technologies, and our competitors' use of certain types of technology and equipment may provide them with a competitive advantage. For example, current and new wireless internet technologies such as 4G and 5G wireless broadband services continue to evolve rapidly to allow for greater speed and reliability, and some companies and municipalities are building advanced fiber-based networks that provide very fast internet access speeds. We expect other advances in communications technology to occur in the future. If we choose technology or equipment that is not as effective or attractive to consumers as that employed by our competitors, if we fail to employ technologies desired by consumers before our competitors do so, or if we fail to execute effectively on our technology initiatives, our businesses and results of operations could be adversely affected. We also will continue to incur additional costs as we execute our technology initiatives, such as the U.S. deployment of DOCSIS 3.1 and DOCSIS FDX, our X1 and Sky Q set-top boxes, cloud DVR and wireless gateways. There can be no assurance that we can execute on these and other initiatives in a manner sufficient to grow or maintain our revenue or to compete successfully in the future. We also may generate less revenue or incur increased costs if changes in our competitors' product offerings require that we offer certain of our existing services or enhancements at a lower or no cost to our customers or that we increase our research and development expenditures.

We are subject to regulation by federal, state, local and foreign authorities, which impose additional costs and restrictions on our businesses.

In the United States, federal, state and local governments extensively regulate the high-speed internet, video and voice services industries. Our broadcast television business is also highly regulated by U.S. laws and regulations. NBCUniversal's cable networks, filmed entertainment and theme parks businesses are also subject to various other laws and regulations at the international, federal, state and local levels. Sky's business is subject to various telecommunications and media-specific regulations in most of the countries where it operates. The FCC and certain state attorneys general and foreign governmental authorities also have been active in conducting inquiries and reviews regarding our services, and this trend likely will continue. Failure to comply with the laws and regulations applicable to our businesses could result in administrative enforcement actions, fines, and civil and criminal liability.

Legislators and regulators at all levels of government, including foreign authorities, frequently consider changing, and sometimes do change, existing statutes, rules or regulations, or interpretations of existing statutes, rules or regulations, or prescribe new ones, any of which may significantly affect our businesses. These legislators and regulators have been active in considering rulemakings and legislation regarding our services. For example, some states have passed or introduced legislation or executive orders that

impose various open internet and data privacy requirements. Such attempts by the states to regulate portions of our businesses have the potential to create a patchwork of differing and/or conflicting state regulations. These requirements and any future legislative, judicial, regulatory or administrative actions may increase our costs or impose additional restrictions on our businesses, some of which may be significant. The U.S. Congress may consider proposals to address communications issues, including whether it should rewrite the entire Communications Act to account for changes in the communications marketplace, whether it should enact new, permanent open internet requirements and whether it should fund new broadband infrastructure. We are unable to predict the outcome or effects of any of these potential actions or any other legislative or regulatory proposals on our businesses. Any changes to the legal and regulatory framework applicable to any of our services or businesses could have an adverse impact on our businesses and results of operations. For a more extensive discussion of the significant risks associated with the regulation of our businesses, see Item 1: Business and refer to the “Legislation and Regulation” discussion within that section.

Programming expenses for our video services are increasing, which could adversely affect Cable Communications’ and Sky’s video businesses.

We expect programming expenses for our video services to continue to be the largest single expense item for our Cable Communications and Sky segments and to increase for the foreseeable future. Our programming expenses may also increase as we add programming to our video services or distribute existing programming to more of our customers or through additional delivery platforms, such as On Demand or streaming services. Additionally, Cable Communications pays certain local broadcast television stations in exchange for their required consent for the retransmission of broadcast network programming to video services customers; we expect to continue to be subject to increasing demands for payment and other concessions from local broadcast television stations. These market factors may be exacerbated by increased consolidation in the media industry, which may further increase our programming expenses. If we are unable to raise our customers’ rates or offset programming cost increases through the sale of additional services or cost management initiatives, the increasing cost of programming could have an adverse effect on our Cable Communications and Sky segments’ results of operations.

Moreover, as our contracts with content providers expire, there can be no assurance that they will be renewed on acceptable terms, if renewed at all, in which case we may be unable to provide such content as part of Cable Communications’ or Sky’s video services, and our businesses and results of operations could be adversely affected.

NBCUniversal’s and Sky’s success depends on consumer acceptance of their content, and their businesses may be adversely affected if their content fails to achieve sufficient consumer acceptance or the costs to create or acquire content increase.

Most of NBCUniversal’s, as well as Sky’s, businesses create and acquire media and entertainment content, the success of which depends substantially on consumer tastes and preferences that change in often unpredictable ways. The success of these businesses depends on our ability to consistently create, acquire, market and distribute NBCUniversal’s cable network and broadcast television programming, Sky’s owned television channels, filmed entertainment, theme park attractions and other content that meet the changing preferences of the broad domestic and international consumer markets. We have invested, and will continue to invest, substantial amounts in our content, including in the production of original content on NBCUniversal’s cable networks and broadcast television networks and Sky’s owned television channels, in our films and for theme park attractions, before learning the extent to which it will earn consumer acceptance.

NBCUniversal and Sky also obtain a significant portion of their content from third parties, such as movie studios, television production companies, sports organizations and other suppliers, including in the case of Sky, sometimes on an exclusive basis. Competition for popular content, particularly for sports programming, is intense, and we may have to increase the price we are willing to pay or be outbid by our competitors for popular content. Entering into or renewing contracts for such programming rights or acquiring additional rights may result in significantly increased costs. Particularly with respect to long-term contracts for sports programming rights for NBCUniversal and Sky, our results of operations and cash flows over the term of a contract depend on a number of factors, including the strength of the advertising market, audience size, the ability to secure distribution from and impose surcharges or obtain carriage on multichannel video providers for NBCUniversal’s content, and the timing and amount of rights payments. There can be no assurance that revenue from these contracts will exceed our costs for the rights, as well as the other costs of producing and distributing the programming. If our content does not achieve sufficient consumer acceptance, or if we cannot obtain or retain rights to popular content on acceptable terms, or at all, NBCUniversal’s and Sky’s businesses may be adversely affected.

The loss of NBCUniversal's programming distribution agreements, or the renewal of these agreements on less favorable terms, could adversely affect our businesses.

NBCUniversal's cable networks depend on their ability to secure and maintain distribution agreements with traditional and virtual multichannel video providers. Increasingly, NBCUniversal's cable networks, broadcast television and filmed entertainment businesses are entering into agreements to license their prior season and library content on other distribution platforms, including subscription video on demand services. If NBCUniversal's programming does not attract sufficient viewers, traditional and virtual multichannel video providers may decide not to distribute NBCUniversal's broadcast and cable networks, and OTT video streaming services may not license programming we create. In addition, the number of subscribers to NBCUniversal's cable networks has been, and may continue to be reduced, as a result of multichannel video providers offering smaller packages of channels as part of their virtual or traditional television programming packages and by overall reduced viewing of television programming through multichannel video providers.

NBCUniversal's broadcast television networks depend on their ability to secure and maintain network affiliation agreements with third-party local broadcast television stations in the markets where it does not own the affiliated local broadcast television station. In addition, every three years, each of its owned local broadcast television stations must elect, with respect to its retransmission by multichannel video providers within its DMA, either "must-carry" status, in which the distributor's carriage of the station is mandatory and does not generate any compensation for the local station, or "retransmission consent," in which the station gives up its right to mandatory carriage and instead seeks to negotiate the terms and conditions of carriage with the distributor, including the amount of compensation, if any, paid to the station by such distributor. For the current three-year period, which commenced on January 1, 2018, all of our owned NBC broadcast television stations and our owned Telemundo broadcast television stations elected retransmission consent. However, certain illegal online entities may stream our broadcast television content online without our consent and without paying any compensation to us.

There can be no assurance that any of our distribution agreements will be renewed in the future on acceptable terms, or at all. The loss of any of these agreements, or the renewal of these agreements on less favorable terms, could reduce NBCUniversal's revenues and the reach of our television programming and its attractiveness to advertisers, which in turn could adversely affect NBCUniversal's cable networks, broadcast television and filmed entertainment businesses.

Less favorable regulation, the loss of Sky's transmission agreements with satellite or telecommunications providers or the renewal of these agreements on less favorable terms, could adversely affect Sky's businesses.

Sky relies on various telecommunications providers to deliver its video, high-speed internet, voice and wireless phone services to its customers. For example, Sky relies on satellites leased from third parties to provide most of its video services. In addition, pursuant to the current regulatory regime in the U.K. and Italy, Sky is able to access networks owned by third-party telecommunication providers to provide its high-speed internet and phone services, in most cases, on regulated terms, including price. These regulated terms could become less favorable. Moreover, while Sky is able to receive wholesale fiber access on fair, reasonable and non-discriminatory terms, pricing terms are not regulated. If Sky is unable to enter into or renew its transmission agreements with satellite or telecommunications operators on commercially reasonable terms or if these operators were to terminate their agreements, Sky may be unable to deliver some of its services to customers in one or more of the countries in which it operates.

The loss of Sky's wholesale distribution agreements with traditional multichannel video providers could adversely affect Sky's businesses.

Sky benefits from its ability to secure and maintain wholesale distribution agreements for its television channels with traditional multichannel video providers. There can be no assurance that any of its distribution agreements will be renewed in the future on acceptable terms, or at all. The loss of any of these agreements, or the renewal of these agreements on less favorable terms, could reduce Sky's revenues and the reach of its television programming and its attractiveness to advertisers, which in turn could adversely affect Sky's businesses.

We rely on network and information systems and other technologies, as well as key properties, and a disruption, cyber attack, failure or destruction of such networks, systems, technologies or properties may disrupt our businesses.

Network and information systems and other technologies, including those related to our network management, customer service operations, and programming delivery, and technology embedded in our products and services, are critical to our business activities. Cyber threats and attacks are directed at both known and newly discovered software and hardware vulnerabilities and are constantly evolving, which increases the difficulty of detecting and successfully defending against them. Cyber threats and attacks can have cascading impacts that unfold with increasing speed across networks, information systems and other technologies. Network, information systems and technology-related events, including those caused by us, such as process breakdowns, security architecture or design vulnerabilities, or by third parties, such as computer hackings, cyber attacks, computer viruses, worms or other destructive or disruptive software, denial of service attacks, malicious social engineering or other malicious activities, or power outages, natural disasters, infectious disease outbreaks, terrorist attacks or other similar events, could result in a degradation or disruption of our products and services, excessive call volume to call centers, theft or misuse of our intellectual property or other assets, a reduction in demand for our theme parks, disruption of the security of our internal systems and products and services or satellite transmission signals, the compromise of confidential or technical business information or damage to our equipment, data, properties and reputation. In addition, severe weather events such as hurricanes and wild fires have impacted our services, products and properties from time to time in the past and will in the future. The occurrence of these events may result in large expenditures to repair or replace the damaged properties, products, services, networks or information systems to protect them from similar events in the future, and any such events could lead to litigation or otherwise have an adverse effect on our results of operations.

In addition, we obtain certain confidential, proprietary and personal information about our customers, personnel and vendors, and may in some cases provide this information to third parties, in connection with our business. While we generally obtain assurances that these third parties will protect this information, there is a risk that this information may be compromised. Any security breaches, such as misappropriation, misuse, leakage, falsification or accidental release or loss of information maintained in our third-party's information technology systems, including customer, personnel and vendor data, could damage our reputation and require us to expend significant capital and other resources to remedy any such security breach, could lead to litigation or could cause regulators to impose fines or other remedies for failure to comply with relevant customer privacy rules.

The risk of systems-related events and security breaches occurring continues to intensify in many of our businesses, and our businesses may be at a disproportionately heightened risk of these events occurring, due to the nature of our businesses and because we maintain certain information necessary to conduct our business in digital form. In the ordinary course of our business, there are frequent attempts to cause such systems-related events and security breaches. We have experienced minor systems-related events that, to date, have not resulted in any significant degradation or disruption to our network or information systems or our products, services or operations. While we develop and maintain systems, and operate an extensive security program, seeking to prevent systems-related events and security breaches from occurring, the development, maintenance and operation of these systems and programs is costly and requires ongoing monitoring and updating as technologies change and efforts to overcome security measures become more sophisticated and evolve rapidly. Despite our efforts to prevent these events and security breaches, there can be no assurance that they will not occur in the future or will not have an adverse effect on our businesses. Moreover, the amount and scope of insurance we maintain against losses resulting from any such events or security breaches likely would not be sufficient to cover our losses or otherwise adequately compensate us for any disruptions to our business that may result, and the occurrence of any such events or security breaches could have an adverse effect on our business.

Our businesses depend on using and protecting certain intellectual property rights and on not infringing the intellectual property rights of others.

We rely on our intellectual property, such as patents, copyrights, trademarks and trade secrets, as well as licenses and other agreements with our vendors and other third parties, to use various technologies, conduct our operations and sell our products and services. Legal challenges to our intellectual property rights and claims of intellectual property infringement by third parties could require that we enter into royalty or licensing agreements on unfavorable terms, incur substantial monetary liability, or be enjoined preliminarily or permanently from further use of the intellectual property in question, from importing into the United States or other jurisdictions in which we operate hardware that uses such intellectual property or from the continuation of our businesses as currently conducted. We may need to change our business practices if any of these events occur, which may limit our ability to compete effectively and could have an adverse effect on our results of operations. Even if we believe any such challenges or claims are without merit, they can be time-consuming and costly to defend and divert management's attention and resources away from our businesses. Moreover, if we are unable to obtain or continue to obtain licenses from our vendors and other third parties on reasonable terms, our businesses could be adversely affected.

In addition, intellectual property constitutes a significant part of the value of NBCUniversal's and Sky's businesses, and their success is highly dependent on protecting the intellectual property rights of the content they create or acquire against third-party misappropriation, reproduction or infringement. The unauthorized reproduction, distribution or display of copyrighted material

negatively affects our ability to generate revenue from the legitimate sale of our content, as well as from the sale of advertising in connection with our content, and increases our costs due to our active enforcement of our intellectual property rights.

Piracy and other unauthorized uses of content are made easier, and the enforcement of intellectual property rights more challenging, by technological advances that allow the conversion of programming, films and other content into digital formats, which facilitates the creation, transmission and sharing of high-quality unauthorized copies. In particular, piracy of programming and films through unauthorized distribution on DVDs, peer-to-peer computer networks and other platforms continues to present challenges for NBCUniversal's cable networks, broadcast television and filmed entertainment businesses. It also presents similar challenges for Sky's businesses, including as a result of illegal retransmission of sports events. While piracy is a challenge in the United States, it is particularly prevalent in many parts of the world that lack developed copyright laws, effective enforcement of copyright laws and technical protective measures like those in effect in the United States. If any U.S. or international laws intended to combat piracy and protect intellectual property rights are repealed or weakened or are not adequately enforced, or if the legal system fails to adapt to new technologies that facilitate piracy, we may be unable to effectively protect our rights, the value of our intellectual property may be negatively impacted and our costs of enforcing our rights may increase.

We may be unable to obtain necessary hardware, software and operational support.

We depend on third-party vendors to supply us with a significant amount of the hardware, software and operational support necessary to provide certain of our products and services. Some of these vendors represent our primary source of supply or grant us the right to incorporate their intellectual property into some of our hardware and software products. While we actively monitor the operations and financial condition of key vendors in an attempt to detect any potential difficulties, there can be no assurance that we would timely identify any operating or financial difficulties associated with these vendors or that we could effectively mitigate our risks with respect to any such difficulties. If any of these vendors experience operating or financial difficulties, if our demand exceeds their capacity or if they are otherwise unable to meet our specifications or provide the equipment, products or services we need in a timely manner (or at all), or at reasonable prices, our ability to provide some products or services may be adversely affected and we may incur additional costs.

Weak economic conditions may have a negative impact on our businesses.

A substantial portion of our revenue comes from customers whose spending patterns may be affected by prevailing economic conditions. Weak economic conditions in the United States or globally could adversely affect demand for any of our products and services and have a negative impact on our results of operations. For example, customers may reduce the level of cable services to which they subscribe, or may discontinue subscribing to one or more of Cable Communications' cable services or Sky's services. This risk may be increased by the expanded availability of free or lower cost competitive services, such as OTT video services, or substitute services for high-speed internet and voice services, such as mobile phones and Wi-Fi networks. Weak economic conditions also may have a negative impact on our advertising revenue, the performance of our films and home entertainment releases, and attendance and spending in our theme parks.

Weak economic conditions and disruption in the global financial markets may also have an impact on the ability of third parties to satisfy their obligations to us or increase our exposure to currency fluctuations in countries where we operate. In addition, in connection with our acquisition of Sky, we incurred and assumed a significant amount of additional debt. If our businesses are negatively impacted by weak economic conditions, we may not be able to reduce the amount of our debt outstanding as quickly as expected. Further, a significant increase in interest rates or disruption in the global financial markets may affect our ability to obtain financing or to refinance existing debt on acceptable terms, if at all, and could increase the cost of our borrowings.

Acquisitions and other strategic initiatives present many risks, and we may not realize the financial and strategic goals that we had contemplated.

From time to time, we make acquisitions and investments and may pursue other strategic initiatives, including our 2018 acquisition of Sky and 2017 launch of a wireless phone service using virtual network operator rights. In connection with such acquisitions and strategic initiatives, we may incur unanticipated expenses, fail to realize anticipated benefits and synergies, have difficulty incorporating an acquired or new line of business, disrupt relationships with current and new employees, customers and vendors, incur significant debt, or have to delay or not proceed with announced transactions or initiatives. Additionally, federal regulatory agencies such as the FCC or DOJ or international regulators may impose restrictions on the operation of our businesses as a result of our seeking regulatory approvals for any significant acquisitions and strategic initiatives, or may dissuade us from pursuing certain transactions. The occurrence of any of these events could have an adverse effect on our business and results of operations.

Unfavorable litigation or governmental investigation results could require us to pay significant amounts or lead to onerous operating procedures.

We are subject from time to time to a number of lawsuits both in the United States and in foreign countries, including claims relating to competition, intellectual property rights (including patents), employment and labor matters, personal injury and property damage, customer privacy, regulatory requirements, advertising, marketing and selling practices, and credit and

collection issues. We also spend substantial resources complying with various regulatory and government standards, including any related investigations and litigation. We may incur significant expenses defending any such suit or government charge and may be required to pay amounts or otherwise change our operations in ways that could adversely impact our businesses, results of operations or financial condition.

Labor disputes, whether involving employees or sports organizations, may disrupt our operations and adversely affect our businesses.

Many of NBCUniversal's employees, including writers, directors, actors, technical and production personnel and others, as well as some of our on-air and creative talent employees, are covered by collective bargaining agreements or works councils. Most of NBCUniversal's collective bargaining agreements are industry-wide agreements, and we may lack practical control over the negotiations and terms of the agreements. If we are unable to reach agreement with a labor union before the expiration of a collective bargaining agreement, our employees who were covered by that agreement may have a right to strike or take other actions that could adversely affect us, which could disrupt our operations and reduce our revenue, and the resolution of any disputes may increase our costs. There can be no assurance that we will renew our collective bargaining agreements as they expire or that we can renew them on favorable terms or without any work stoppages.

In addition, our cable networks and broadcast television networks have programming rights agreements of varying scope and duration with various sports organizations to broadcast and produce sporting events, including certain NFL, NHL, NBA and MLB games. Labor disputes in these and other sports organizations could have an adverse effect on our businesses.

The loss of key management personnel or popular on-air and creative talent could have an adverse effect on our businesses.

We rely on certain key management personnel in the operation of our businesses. While we maintain long-term and emergency transition plans for key management personnel and believe we could either identify internal candidates or attract outside candidates to fill any vacancy created by the loss of any key management personnel, the loss of one or more of our key management personnel could have a negative impact on our businesses.

In addition, our cable networks, broadcast television, filmed entertainment and Sky businesses depend on the abilities and expertise of on-air and creative talent. If we fail to attract or retain on-air or creative talent, if the costs to attract or retain such talent increase materially, if we need to make significant termination payments, or if these individuals lose their current appeal, our businesses could be adversely affected.

We face risks relating to doing business internationally that could adversely affect our businesses.

We, primarily through Sky and NBCUniversal, operate our businesses worldwide. There are risks inherent in doing business internationally, including global financial market turmoil; economic volatility and global economic slowdown; currency exchange rate fluctuations and inflationary pressures; the requirements of local laws and customs relating to the publication and distribution of content and the display and sale of advertising; import or export restrictions and changes in trade regulations; difficulties in developing, staffing and managing foreign operations; issues related to occupational safety and adherence to diverse local labor laws and regulations; and potentially adverse tax developments. Sky's businesses in particular are also subject to risks relating to uncertainties and effects of the implementation of the United Kingdom's referendum to withdraw membership from the EU (referred to as "Brexit"), including financial, legal, tax and trade implications. In addition, doing business internationally subjects us to risks relating to political or social unrest, as well as corruption and government regulation, including U.S. laws such as the Foreign Corrupt Practices Act and the U.K. Bribery Act, that impose stringent requirements on how we conduct our foreign operations. If any of these events occur, our businesses may be adversely affected.

Our Class B common stock has substantial voting rights and separate approval rights over several potentially material transactions, and our Chairman and CEO has considerable influence over our company through his beneficial ownership of our Class B common stock.

Our Class B common stock has a non-dilutable 33 ⅓% of the combined voting power of our Class A and Class B common stock. This non-dilutable voting power is subject to proportional decrease to the extent the number of shares of Class B common stock is reduced below 9,444,375, which was the number of shares of Class B common stock outstanding on the date of our 2002 acquisition of AT&T Corp.'s cable business, subject to adjustment in specified situations. Stock dividends payable on the Class B common stock in the form of Class B or Class A common stock do not decrease the non-dilutable voting power of the Class B common stock. The Class B common stock also has separate approval rights over several potentially material transactions, even if they are approved by our Board of Directors or by our other shareholders and even if they might be in the best interests of our other shareholders. These potentially material transactions include mergers or consolidations involving us, transactions (such as a sale of all or substantially all of our assets) or issuances of securities that require shareholder approval, transactions that result in any person or group owning shares representing more than 10% of the combined voting power of the resulting or surviving corporation, issuances of Class B common stock or securities exercisable or convertible into Class B common stock, and amendments to our articles of incorporation or by-laws that would limit the rights of holders of our Class B common stock. Brian L. Roberts, our chairman and CEO, beneficially owns all of the outstanding shares of our Class B common stock and, accordingly, has considerable influence over our company and the potential ability to transfer effective control by selling the Class B common stock, which could be at a premium.

Item 1B: Unresolved Staff Comments

None.

Item 2: Properties

We believe that substantially all of our physical assets were in good operating condition as of December 31, 2018. Our corporate headquarters and Cable Communications segment headquarters are located in Philadelphia, Pennsylvania at One Comcast Center. We own 80% interests in entities whose primary assets are the Comcast Center and the Comcast Technology Center, which is adjacent to the Comcast Center. The Comcast Technology Center opened in 2018 and is a center for Cable Communications' technology and engineering workforce, as well as the home of our NBCUniversal and Telemundo owned local broadcast stations in Philadelphia, Pennsylvania. We also have leases for numerous business offices, warehouses and properties throughout the United States that house divisional information technology operations.

Cable Communications Segment

Our principal physical assets consist of operating plant and equipment, including cable system signal receiving, encoding and decoding devices, headends and distribution networks, and equipment at or near our customers' homes. Our distribution network consists primarily of headends, content distribution servers, coaxial and fiber-optic cables, lasers, routers, switches and related electronic equipment. Our cable plant and related equipment generally are connected to utility poles under pole rental agreements with local public utilities, although in some areas the distribution cable is buried in underground ducts or trenches. Customer premise equipment consists primarily of set-top boxes, cable modems and wireless gateways. The physical components of cable systems require periodic maintenance and replacement.

Our cable system signal reception sites, which consist primarily of antenna towers and headends, and our microwave facilities are located on owned and leased parcels of land, and we own or lease space on the towers on which certain of our equipment is located. We own most of our service vehicles.

Our high-speed internet network consists of fiber-optic cables owned or leased by us and related equipment. We also operate national and regional data centers with equipment that is used to provide services, such as email and web services, to our high-speed internet and voice customers, as well as cloud services to our video customers. In addition, we maintain network operations centers with equipment necessary to monitor and manage the status of our services and network.

We own or lease buildings throughout the U.S. that contain customer service call centers, retail stores and customer service centers, warehouses and administrative space. We also own a building that houses our digital media center. The digital media center contains equipment that we own or lease, including equipment related to network origination, video transmission via satellite and terrestrial fiber-optics, broadcast studios, post-production services and interactive television services.

NBCUniversal Segments

NBCUniversal's corporate headquarters are located in New York, New York at 30 Rockefeller Plaza and include offices and studios, which are used by Headquarters and Other and the Cable Networks and Broadcast Television segments. NBCUniversal owns the space it occupies at 30 Rockefeller Plaza. NBCUniversal also leases space in 10 Rockefeller Plaza which includes *The Today Show* studio, production facilities and offices used by the Broadcast Television segment. Telemundo's leased headquarters and production facilities are located in Miami, Florida and are used by the Broadcast Television segment and Headquarters and Other. The Universal City owned location in California includes offices, studios, and theme park and retail operations which are owned by NBCUniversal and used by all NBCUniversal segments. Our owned CNBC headquarters and production facilities and disaster recovery center are located in Englewood Cliffs, New Jersey and are used by the Cable Networks and Broadcast Televisions segments and Headquarters and Other. We also own or lease offices, studios, production facilities, screening rooms, retail operations, warehouse space, satellite transmission receiving facilities and data centers in numerous locations in the United States and around the world, including property for our owned local broadcast television stations. In addition, we own theme parks and own or lease related facilities in Orlando, Florida; Hollywood, California; and Osaka, Japan, which are used in the Theme Parks segment, and are building a new theme park in Beijing, China.

Sky Segment

Sky's corporate headquarters are located in Middlesex, United Kingdom. Sky owns the space it occupies at Middlesex. Sky leases the Sky Deutschland headquarters located in Unterföhring, Germany and the Sky Italia headquarters located in Milan, Italy.

Additionally, Sky owns and leases offices, production facilities and studios, broadcasting facilities and customer support centers throughout Europe, including in the U.K., Ireland, Germany, Italy and Austria.

Other

The Wells Fargo Center, a large, multipurpose arena in Philadelphia, Pennsylvania that we own, was the principal physical operating asset of our other businesses as of December 31, 2018.

Item 3: Legal Proceedings

Refer to Note 17 to Comcast's consolidated financial statements included in this Annual Report on Form 10-K for a discussion of recent developments related to our legal proceedings.

NBCUniversal is subject to legal proceedings and claims that arise in the ordinary course of its business and it does not expect the final disposition of these matters to have a material adverse effect on its results of operations, cash flows or financial condition, although any such matters could be time-consuming and costly and could injure its reputation.

Item 4: Mine Safety Disclosures

Not applicable.

Part II

Item 5: Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Comcast's Class A common stock is listed on the NASDAQ Global Select Market under the symbol CMCSA. There is no established public trading market for Comcast's Class B common stock. The Class B common stock can be converted, on a share for share basis, into Class A common stock.

Dividends Declared

2018		2017	
Month Declared:	Dividend Per Share	Month Declared:	Dividend Per Share
January	\$ 0.1900	January	\$ 0.1575
May	\$ 0.1900	May	\$ 0.1575
July	\$ 0.1900	July	\$ 0.1575
October (paid in January 2019)	\$ 0.1900	October (paid in January 2018)	\$ 0.1575
Total	\$ 0.76	Total	\$ 0.63

We expect to continue to pay quarterly dividends, although each dividend is subject to approval by our Board of Directors. In January 2019, our Board of Directors approved a 10% increase in our dividend to \$0.84 per share on an annualized basis.

Holders of Class A common stock in the aggregate hold 66⅔% of the voting power of our common stock. The number of votes that each share of Class A common stock has at any given time depends on the number of shares of Class A common stock and Class B common stock then outstanding, with each share of Class B common stock having 15 votes per share. The Class B common stock represents 33⅓% of the combined voting power of our common stock, which percentage is generally non-dilutable under the terms of our articles of incorporation. Mr. Brian L. Roberts beneficially owns all outstanding shares of Class B common stock. Generally, including as to the election of directors, holders of Class A common stock and Class B common stock vote as one class except where class voting is required by law.

Record holders as of December 31, 2018 are presented in the table below.

Stock Class	Record Holders
Class A Common Stock	409,899
Class B Common Stock	3

The table below summarizes Comcast's common stock repurchases during 2018.

Period	Total Number of Shares Purchased	Average Price Per Share	Total Number of Shares Purchased as Part of Publicly Announced Authorization	Total Dollar Amount Purchased Under the Publicly Announced Authorization	Maximum Dollar Value of Shares That May Yet Be Purchased Under the Publicly Announced Authorization ^(a)
First Quarter 2018	38,659,357	\$ 38.92	38,551,261	\$ 1,500,000,000	\$ 5,500,000,013
Second Quarter 2018	38,315,943	\$ 32.62	38,315,943	\$ 1,250,000,000	\$ 4,250,000,013
Third Quarter 2018	35,627,730	\$ 35.09	35,627,730	\$ 1,250,000,000	\$ 3,000,000,013
October 1-31, 2018	—	\$ —	—	\$ —	\$ 3,000,000,013
November 1-30, 2018	13,946,514	\$ 35.85	13,946,514	\$ 500,000,000	\$ 2,500,000,013
December 1-31, 2018	13,234,018	\$ 37.78	13,234,018	\$ 500,000,000	\$ 2,000,000,013
Total	139,783,562	\$ 35.80	139,675,466	\$ 5,000,000,000	\$ 2,000,000,013

(a) Effective January 1, 2017, our Board of Directors increased our share repurchase program authorization to \$12 billion, which does not have an expiration date. As of December 31, 2018, \$2 billion remained under this authorization.

The total number of shares purchased during 2018 includes 108,096 shares received in the administration of employee share-based compensation plans.

Under our publicly announced share repurchase program authorization, we may repurchase shares in the open market or in private transactions.

Stock Performance Graph

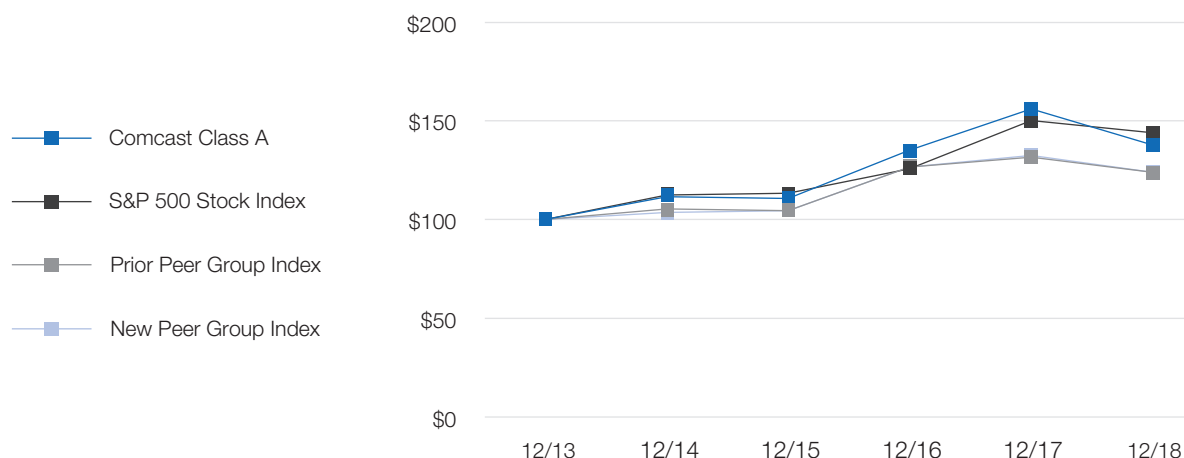
Comcast

The following graph compares the annual percentage change in the cumulative total shareholder return on Comcast's Class A common stock during the five years ended December 31, 2018 with the cumulative total returns on the Standard & Poor's 500 Stock Index and a select peer group consisting of us and other companies engaged in the cable, communications and media industries. This peer group (the "new peer group index") consists of our common stock, DISH Network Corporation (Class A), Charter Communications, Inc., AT&T Inc., Verizon Communications Inc., CenturyLink, Inc., T-Mobile US, Inc., and Sprint Corporation (the "transmission and distribution subgroup"); and Walt Disney Company, Viacom Inc. (Class B), Twenty-First Century Fox, Inc. (Class A), Discovery, Inc. (Class A), and CBS Corporation (Class B) (the "media subgroup"). T-Mobile US, Inc. and Discovery, Inc. (Class A) were added to the new peer group index in 2018.

The prior peer group (the "prior peer group index") consists of our common stock, DISH Network Corporation (Class A), Charter Communications, Inc., AT&T Inc., Verizon Communications Inc., CenturyLink, Inc., and Sprint Corporation (the "transmission and distribution subgroup"); and Time Warner Inc. (which is included through June 14, 2018 when it merged with AT&T Inc.), Walt Disney Company, Viacom Inc. (Class B), Twenty-First Century Fox, Inc. (Class A), and CBS Corporation (Class B) (the "media subgroup").

Both the prior peer group and new peer group are constructed as a composite peer group in which the transmission and distribution subgroup is weighted 61% and the media subgroup is weighted 39% based on the respective revenue of our Cable Communications and NBCUniversal segments. Sky has been excluded from the revenue amounts used to determine the weighting to the transmission and distribution subgroup and media subgroup based on the timing of the acquisition. The comparison assumes \$100 was invested on December 31, 2013 in our Class A common stock and in each of the following indices and assumes the reinvestment of dividends.

Comparison of 5 Year Cumulative Total Return



	2014	2015	2016	2017	2018
Comcast Class A	\$113	\$112	\$140	\$164	\$143
S&P 500 Stock Index	\$114	\$115	\$129	\$157	\$150
Prior Peer Group Index	\$106	\$105	\$130	\$136	\$127
New Peer Group Index	\$104	\$105	\$130	\$137	\$127

NBCUniversal

NBCUniversal is a wholly owned subsidiary of NBCUniversal Holdings and there is no market for its equity securities.

Item 6: Selected Financial Data

Comcast

Year ended December 31 (in millions, except per share data)	2018 ^{(b)(c)}	2017 ^{(b)(d)}	2016 ^(b)	2015	2014
Statement of Income Data					
Revenue	\$ 94,507	\$ 85,029	\$ 80,736	\$ 74,510	\$ 68,775
Operating income	19,009	18,018	16,831	15,998	14,904
Net income attributable to Comcast Corporation ^(a)	11,731	22,735	8,678	8,163	8,380
Basic earnings per common share attributable to Comcast Corporation shareholders	2.56	4.83	1.80	1.64	1.62
Diluted earnings per common share attributable to Comcast Corporation shareholders	2.53	4.75	1.78	1.62	1.60
Dividends declared per common share	0.76	0.63	0.55	0.50	0.45
Balance Sheet Data (at year end)					
Total assets	\$ 251,684	\$ 187,462	\$ 181,017	\$ 166,574	\$ 159,186
Total debt, including current portion	111,743	64,556	61,046	52,621	48,081
Comcast Corporation shareholders' equity	71,613	68,616	53,932	52,269	52,711
Statement of Cash Flows Data					
Net cash provided by (used in):					
Operating activities	24,297	21,261	19,691	19,485	17,596
Investing activities	(50,854)	(13,533)	(18,265)	(11,964)	(8,733)
Financing activities	27,140	(7,572)	(434)	(9,136)	(6,671)

(a) For 2018, 2017 and 2016, refer to Item 7: Management's Discussion and Analysis of Financial Condition and Results of Operations included in this Annual Report on Form 10-K for a discussion of the effects of items impacting net income attributable to Comcast Corporation. In 2018, 2017, 2016, 2015 and 2014, net income attributable to Comcast Corporation is stated after deducting net income attributable to noncontrolling interests of \$131 million, \$187 million, \$350 million, \$250 million and \$212 million, respectively.

(b) Reflects the impact of the adoption of the new accounting standard in 2018 related to revenue recognition. Refer to Note 9 to Comcast's consolidated financial statements for further discussion.

(c) 2018 amounts include the operations of Sky from October 9, 2018 to December 31, 2018. Refer to Note 8 to Comcast's consolidated financial statements for further discussion.

(d) 2017 net income attributable to Comcast Corporation and earnings per common share attributable to Comcast Corporation shareholders included a \$12.7 billion net income tax benefit as a result of the impacts of the 2017 tax reform legislation. Refer to Item 7: Management's Discussion and Analysis of Financial Condition and Results of Operations and Note 5 to Comcast's consolidated financial statements for further discussion.

NBCUniversal

Omitted pursuant to General Instruction I(2)(a) to Form 10-K.

Item 7: Management's Discussion and Analysis of Financial Condition and Results of Operations

Introduction

Management's discussion and analysis of financial condition and results of operations is provided as a supplement to and should be read in conjunction with the consolidated financial statements and related notes to enhance the understanding of our operations and our present business environment. Components of the management's discussion and analysis of financial condition and results of operations section include:

- Overview
- Results of Operations
- Non-GAAP Financial Measure
- Liquidity and Capital Resources
- Contractual Obligations
- Off-Balance Sheet Arrangements
- Recent Accounting Pronouncements
- Critical Accounting Judgments and Estimates

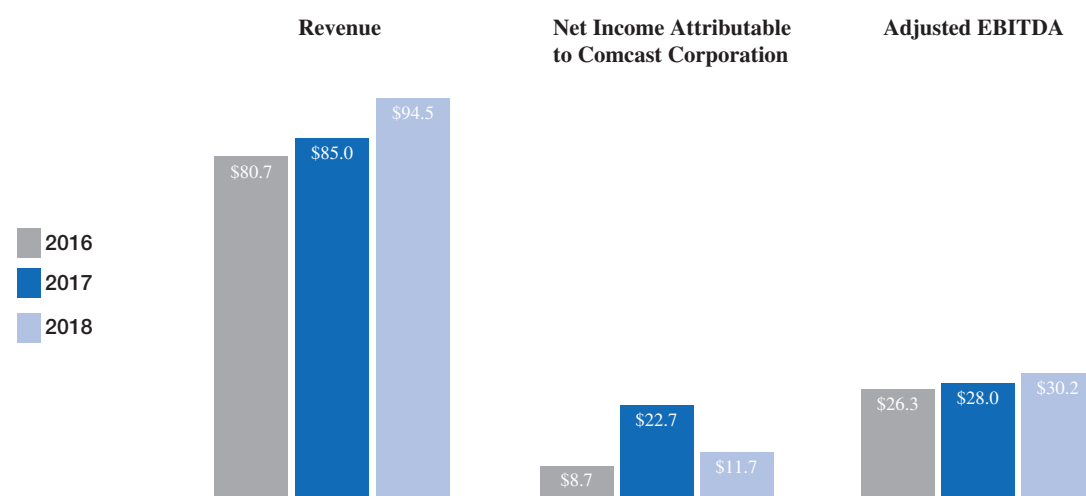
Overview

We are a global media and technology company with three primary businesses: Comcast Cable, NBCUniversal and Sky. We present our operations for (1) Comcast Cable in one reportable business segment, referred to as Cable Communications; (2) NBCUniversal in four reportable business segments: Cable Networks, Broadcast Television, Filmed Entertainment and Theme Parks (collectively, the "NBCUniversal segments"); and (3) Sky in one reportable business segment. In the fourth quarter of 2018, we acquired a 100% interest in Sky through a series of transactions, and Sky's results of operations for the period October 9, 2018 to December 31, 2018 are included in our consolidated results of operations. For more information about our company's operations, see Item 1: Business.

We adopted the updated accounting guidance related to revenue recognition on January 1, 2018 on a full retrospective basis, which required us to reflect the impact of the updated guidance for all periods presented (see Note 9 to Comcast's consolidated financial statements and Note 8 to NBCUniversal's consolidated financial statements).

Consolidated Revenue, Net Income Attributable to Comcast Corporation and Adjusted EBITDA^(a)

(in billions)



- (a) Adjusted EBITDA is a financial measure that is not defined by generally accepted accounting principles in the United States (“GAAP”). Refer to the “Non-GAAP Financial Measure” section on page 54 for additional information, including our definition and our use of Adjusted EBITDA, and for a reconciliation from net income attributable to Comcast Corporation to Adjusted EBITDA.

2018 Developments

The following are the more significant developments in our businesses during 2018:

Cable Communications Segment

- An increase in revenue of 3.9% to \$55.1 billion was primarily driven by increases in high-speed internet, business services and advertising revenue, partially offset by a decline in video and voice revenue
- An increase in Adjusted EBITDA of 6.5% to \$22.4 billion
- An increase in operating margin from 39.7% to 40.7% that reflects increases in revenue from high-speed internet and business services, partially offset by higher programming expenses
- A decrease in capital expenditures of 3.0% to \$7.7 billion that reflects:
 - decreased spending on customer premise equipment and support capital
 - an increase in investments in scalable infrastructure to increase network capacity
 - an increase in investments in line extensions, primarily for the expansion of our business services

NBCUniversal Segments

- An increase in total NBCUniversal revenue of 8.9% to \$35.8 billion and an increase in total NBCUniversal Adjusted EBITDA of 4.6% to \$8.6 billion, including the impact of our broadcasts of the 2018 PyeongChang Olympics and 2018 Super Bowl
- An increase in Cable Networks and Broadcast Television segments revenue of 12.2% and 19.6%, respectively, including the impact of our broadcasts of the 2018 PyeongChang Olympics and 2018 Super Bowl; excluding revenue associated with our broadcasts of the 2018 PyeongChang Olympics and the 2018 Super Bowl, revenue in our Cable Networks and Broadcast Television segments increased 8.6% and 7.1%, respectively, primarily due to increases in distribution revenue
- A decrease in Filmed Entertainment segment revenue of 5.8% reflecting lower home entertainment, theatrical, other and content licensing revenue
- An increase in Theme Parks segment revenue of 4.4% reflecting higher guest spending, driven by increased ticket prices and merchandise, food and beverage spend, partially offset by the impact of inclement weather conditions and natural disasters in Japan

Sky Segment

- We acquired Sky in the fourth quarter of 2018 through a series of transactions with total cash consideration of £30.2 billion (approximately \$39.4 billion using the exchange rates on the purchase dates)
- For the period October 9, 2018 to December 31, 2018, Sky’s total revenue was \$4.6 billion and Adjusted EBITDA was \$692 million

Corporate and Other

- An increase in Corporate and Other revenue of 17.5% to \$1.4 billion primarily due to revenue associated with our wireless phone service
- An increase in Adjusted EBITDA losses of 12.6% to \$1.5 billion primarily due to losses associated with our wireless phone service of \$743 million
- Cash capital contributions to Atairos totaling \$282 million; as of December 31, 2018, our total investment in Atairos is \$2.7 billion
- An effective tax rate of 22.2% and a reduction in income tax payments of \$824 million primarily due to federal income tax overpayments related to the 2017 tax year that were applied to reduce tax payments in the current year, as well as a reduction in the federal income tax rate from 35% to 21%, effective January 1, 2018

Competition

The results of operations of our reportable business segments are affected by competition, as all of our businesses operate in intensely competitive, consumer-driven and rapidly changing environments and compete with a growing number of companies that provide a broad range of communications products and services, and entertainment, news and information products and services to consumers. Technological changes are further intensifying and complicating the competitive landscape and challenging existing business models. In particular, consumers are increasingly turning to online sources for viewing and purchasing content, which has and likely will continue to reduce the number of our video customers and subscribers to our cable networks even as it makes our high-speed internet services more valuable to consumers. In addition, the increasing number of entertainment choices available has intensified audience fragmentation, which has and likely will continue to adversely affect the audience ratings of our cable networks and broadcast television programming.

For additional information on the competition our businesses face, see Item 1: Business and Item 1A: Risk Factors. Within the Business section, refer to the “Competition” discussion, and within the Risk Factors section, refer to the risk factors entitled “Our businesses currently face a wide range of competition, and our businesses and results of operations could be adversely affected if we do not compete effectively” and “Changes in consumer behavior driven by online video distribution platforms for viewing content could adversely affect our businesses and challenge existing business models.”

Seasonality and Cyclicalities

Each of our businesses is subject to seasonal and cyclical variations. See Item 1: Business and refer to the “Seasonality and Cyclicalities” discussion within that section for additional information.

Consolidated Operating Results

Year ended December 31 (in millions)	2018	2017	2016	% Change 2017 to 2018	% Change 2016 to 2017
Revenue	\$ 94,507	\$ 85,029	\$ 80,736	11.1%	5.3%
Costs and Expenses:					
Programming and production	29,692	25,355	24,348	17.1	4.1
Other operating and administrative	28,094	25,449	23,840	10.4	6.7
Advertising, marketing and promotion	7,036	6,519	6,291	7.9	3.6
Depreciation	8,281	7,914	7,464	4.6	6.0
Amortization	2,736	2,216	1,962	23.5	12.9
Other operating gains	(341)	(442)	—	NM	NM
Operating income	19,009	18,018	16,831	5.5	7.1
Interest expense	(3,542)	(3,086)	(2,942)	14.8	4.9
Investment and other income (loss), net	(225)	421	437	(153.4)	(3.5)
Income before income taxes	15,242	15,353	14,326	(0.7)	7.2
Income tax (expense) benefit	(3,380)	7,569	(5,298)	(144.7)	NM
Net income	11,862	22,922	9,028	(48.2)	153.9
Less: Net income attributable to noncontrolling interests and redeemable subsidiary preferred stock	131	187	350	(29.8)	(46.5)
Net income attributable to Comcast Corporation	\$ 11,731	\$ 22,735	\$ 8,678	(48.4)%	162.0%
Adjusted EBITDA^(a)	\$ 30,165	\$ 27,956	\$ 26,257	7.9%	6.5%

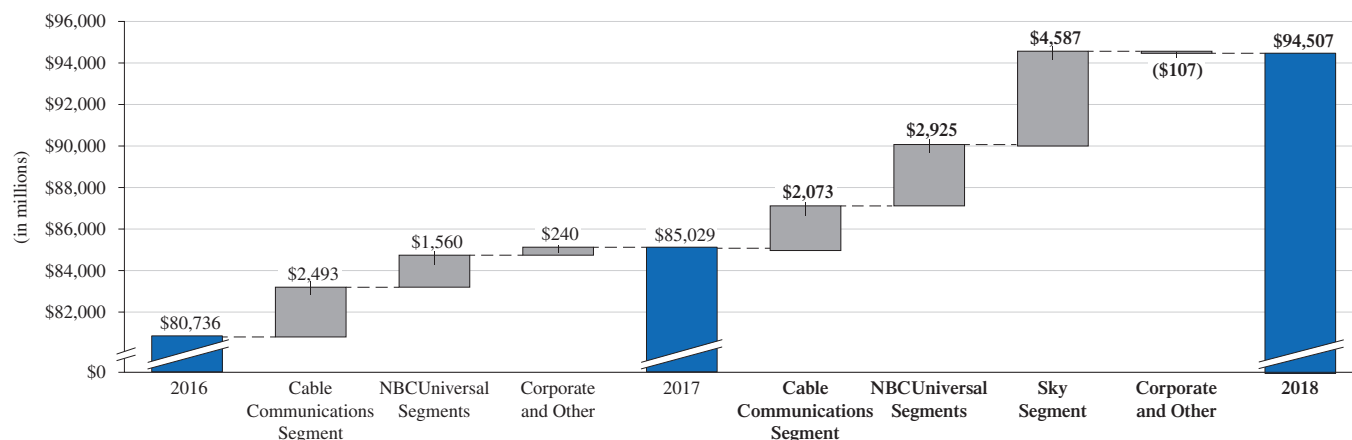
All percentages are calculated based on actual amounts. Minor differences may exist due to rounding.

Percentage changes that are considered not meaningful are denoted with NM.

(a) Adjusted EBITDA is a non-GAAP financial measure. Refer to the “Non-GAAP Financial Measure” section on page 54 for additional information, including our definition and our use of Adjusted EBITDA, and for a reconciliation from net income attributable to Comcast Corporation to Adjusted EBITDA.

Consolidated Revenue

The following graph illustrates the contributions to the increases in consolidated revenue made by our Cable Communications, NBCUniversal and Sky segments, as well as by Corporate and Other activities including eliminations.



The primary drivers of the changes in revenue were as follows:

2018

- Growth in our Cable Communications segment driven by revenue from residential high-speed internet, business services and advertising
- Our broadcasts of the 2018 PyeongChang Olympics and 2018 Super Bowl generated \$1.6 billion of revenue, which was reported in our Cable Networks and Broadcast Television segments
- Sky contributed \$4.6 billion of revenue from October 9, 2018 to December 31, 2018

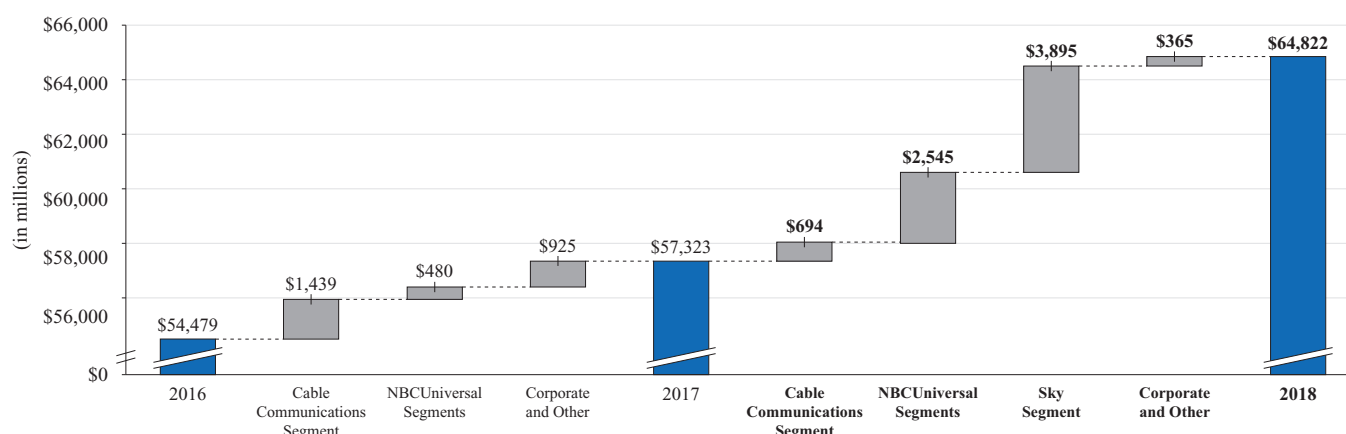
2017

- Growth in our Cable Communications segment driven by revenue from residential high-speed internet and video services and business services
- Growth in our NBCUniversal segments driven by Filmed Entertainment and Theme Parks, partially offset by revenue in 2016 associated with our broadcast of the 2016 Rio Olympics

Revenue for our segments is discussed separately below under the heading “Segment Operating Results.” Revenue for our business development initiatives and other businesses is discussed separately under the heading “Corporate and Other Results of Operations.”

Consolidated Costs and Expenses

The following graph illustrates the contributions to the increases in consolidated operating costs and expenses, representing total costs and expenses excluding depreciation and amortization expense and other operating gains, made by our Cable Communications, NBCUniversal and Sky segments, as well as by Corporate and Other activities including eliminations.



The primary drivers of the changes in operating costs and expenses were as follows:

2018

- Increase in programming expenses in our Cable Communications segment
- Increase in programming and production expenses in our NBCUniversal segments due to our broadcasts of the 2018 PyeongChang Olympics and 2018 Super Bowl
- Operating costs and expenses for Sky for the period October 9, 2018 to December 31, 2018 were \$3.9 billion
- Increase in Corporate and Other activities driven by our wireless phone service

2017

- Increase in programming expenses in our Cable Communications segment
- Increase in programming and production expenses in our Filmed Entertainment segment, partially offset by expenses in 2016 associated with our broadcast of the 2016 Rio Olympics
- Increase in Corporate and Other activities driven by the launch of our wireless phone service

Operating costs and expenses for our segments is discussed separately below under the heading “Segment Operating Results.” Operating costs and expenses for our corporate operations, business development initiatives and other businesses is discussed separately below under the heading “Corporate and Other Results of Operations.”

Consolidated Depreciation and Amortization Expense

Year ended December 31 (in millions)	2018	2017	2016	% Change 2017 to 2018	% Change 2016 to 2017
Cable Communications	\$ 8,264	\$ 8,006	\$ 7,538	3.2%	6.2%
NBCUniversal	2,108	2,041	1,805	3.3	13.1
Sky	539	—	—	NM	NM
Corporate and Other	106	83	83	26.9	(0.5)
Comcast Consolidated	\$ 11,017	\$ 10,130	\$ 9,426	8.8%	7.5%

Consolidated depreciation and amortization expense increased in 2018 and 2017 primarily due to the acquisition of Sky in the current year period and increases in capital expenditures, as well as expenditures for software, in our Cable Communications segment in recent years. Capital expenditures increased in our Cable Communications segment as we continue to invest in network capacity and in customer premise equipment, primarily for our X1 platform, cloud DVR technology and wireless gateways. Certain assets in our Cable Communications segment have relatively short estimated useful lives, which also contributed to the increase in depreciation expense in 2018 and 2017 and will continue to increase depreciation expense in 2019. NBCUniversal depreciation and amortization expense also increased primarily due to our continued investment in new attractions in our Theme Parks segment,

including for Universal Studios Japan. Sky depreciation and amortization expense is related primarily to property and equipment and customer relationship intangible assets.

Amortization expense from acquisition-related intangible assets, such as customer relationships, totaled \$1.1 billion, \$824 million and \$790 million for 2018, 2017 and 2016, respectively. Amounts primarily relate to customer relationship intangible assets recorded in connection with the NBCUniversal transaction in 2011, and 2018 included \$267 million related to our preliminary estimates of Sky customer relationship intangible assets for the period October 9, 2018 to December 31, 2018. Amounts related to Sky are estimates and subject to change as we finalize acquisition accounting (see Note 8 to Comcast's consolidated financial statements for additional information).

Consolidated Other Operating Gains

Consolidated other operating gains for 2018 included \$200 million related to the sale of a controlling interest in our arena management-related businesses in Corporate and other and \$141 million related to the sale of a business in our Filmed Entertainment segment (see Note 10 to Comcast's consolidated financial statements). Consolidated other operating gains for 2017 included \$337 million related to NBCUniversal's relinquishment of spectrum rights (see Note 8 to Comcast's consolidated financial statements and Note 7 to NBCUniversal's consolidated financial statements) and \$105 million related to the sale of a business in Corporate and other (see Note 10 to Comcast's consolidated financial statements).

Consolidated Interest Expense

Interest expense increased in 2018 primarily due to higher levels of debt outstanding and financing costs resulting from the Sky transaction. Interest expense increased in 2017 primarily due to higher levels of debt outstanding.

Consolidated Investment and Other Income (Loss), Net

Year ended December 31 (in millions)	2018	2017	2016
Equity in net income (losses) of investees, net	\$ (364)	\$ 107	\$ (104)
Realized and unrealized gains (losses) on equity securities, net	(187)	(17)	12
Other income (loss), net	326	331	529
Total investment and other income (loss), net	\$ (225)	\$ 421	\$ 437

Equity in Net Income (Losses) of Investees, Net

The changes in equity in net income (losses) of investees, net in 2018 and 2017 were primarily due to our equity method investments in Atairos Group, Inc. and Hulu, LLC. Atairos, which commenced operations in 2016, follows investment company accounting and records its investments at their fair values each reporting period with the net gains or losses reflected in its statement of income. We recognize our share of these gains and losses in equity in net income (losses) of investees, net. The losses at Hulu were driven by its higher programming, advertising and marketing costs, and higher other administrative expenses. The table below summarizes the equity in net income (losses) of Atairos and Hulu in 2018, 2017 and 2016.

Year ended December 31 (in millions)	2018	2017	2016
Atairos	\$ (31)	\$ 281	\$ (38)
Hulu	\$ (454)	\$ (276)	\$ (168)

Realized and Unrealized Gains (Losses) on Equity Securities, Net

The change in realized and unrealized gains (losses) on equity securities, net for 2018 compared to 2017 was primarily due to the adoption of updated accounting guidance for our marketable equity securities, which primarily relates to our investment in Snap (see Note 10 to Comcast's consolidated financial statements and Note 9 to NBCUniversal's consolidated financial statements).

Other Income (Loss), Net

Other income (loss), net for 2018 and 2017 primarily included interest and dividend income.

Other income (loss), net for 2016 included \$225 million recognized in connection with the settlement of amounts owed to us under an agency agreement that had provided for, among other things, Verizon Wireless' sale of our cable services and \$108 million related to the sale of our investment in The Weather Channel's product and technology business to IBM.

Consolidated Income Tax (Expense) Benefit

Income tax (expense) benefit reflects an effective income tax rate that differs from the federal statutory rate primarily due to state and foreign income taxes and adjustments associated with uncertain tax positions. Our effective income tax rate in 2018 was 22.2%, which included the effects of the 2017 Tax Act and also an income tax benefit of \$128 million recognized during the first quarter of 2018 related to the enactment of additional federal tax legislation in 2018, which were partially offset by higher taxable income from operations and \$148 million of income tax expense due to state and federal tax law changes that were enacted in the third quarter of 2018. The 2017 Tax Act, among other things, reduced the federal corporate income tax rate to 21% from 35%, effective January 1, 2018. We recognized an income tax benefit of \$244 million during the fourth quarter of 2018 related to a reduction of our net deferred tax liability as a result of the acquisition of Sky. See Note 5 to Comcast's consolidated financial statements for further discussion on tax reform.

Our effective income tax rate in 2017 was a benefit of 49.3%. The enactment of the 2017 Tax Act resulted in a net income tax benefit of \$12.7 billion in 2017, primarily related to a reduction of our net deferred tax liability. Excluding this tax benefit, our effective income tax rate in 2017 would have been an expense of 33.3%.

Additionally, in 2017, we prospectively adopted certain provisions of the new accounting guidance related to share-based compensation, which resulted in an increase in income tax benefit of \$297 million in 2017. Our income tax benefit also increased \$121 million due to the impact of an internal legal reorganization in the third quarter of 2017, which was partially offset by a decrease of \$53 million due to changes in state tax laws. Our effective income tax rate in 2016 was an expense of 37.0%.

Consolidated Net Income Attributable to Noncontrolling Interests and Redeemable Subsidiary Preferred Stock

The decrease in net income attributable to noncontrolling interests and redeemable subsidiary preferred stock in 2018 was primarily due to the noncontrolling interest holders' share of the loss related to Universal Beijing Resort. In 2018, we entered into an agreement with a consortium of Chinese state-owned companies to build and operate a Universal theme park and resort in Beijing, China and obtained a 30% interest in Universal Beijing Resort. See Note 8 to Comcast's consolidated financial statements for further discussion on noncontrolling interest related to Universal Beijing Resort. The decrease in net income attributable to noncontrolling interests and redeemable subsidiary preferred stock in 2017 was primarily due to our acquisition of the remaining interests in Universal Studios Japan that we did not already own in April 2017.

Segment Operating Results

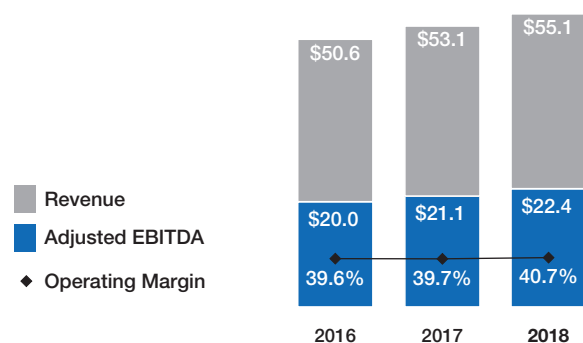
Our segment operating results are presented based on how we assess operating performance and internally report financial information. We use Adjusted EBITDA as the measure of profit or loss for our operating segments. Adjusted EBITDA is defined as net income attributable to Comcast Corporation before net income (loss) attributable to noncontrolling interests and redeemable subsidiary preferred stock, income tax benefit (expense), investment and other income (loss), net, interest expense, depreciation and amortization expense, and other operating gains and losses (such as impairment charges related to fixed and intangible assets and gains or losses on the sale of long-lived assets), if any. From time to time we may exclude from Adjusted EBITDA the impact of certain events, gains, losses or other charges (such as significant legal settlements) that affect the period-to-period comparability of our operating performance. Adjusted EBITDA for our segments is not a non-GAAP financial measure. We reconcile the aggregate amount of Adjusted EBITDA for our reportable business segments to consolidated income before income taxes in the notes to our consolidated financial statements (see Note 2 to Comcast's consolidated financial statements and NBCUniversal's consolidated financial statements).

To be consistent with our current management reporting presentation, certain 2017 and 2016 operating results were reclassified within the Cable Communications segment and certain 2018, 2017 and 2016 operating results were reclassified related to certain NBCUniversal businesses now presented in the Sky segment.

Cable Communications Segment Results of Operations

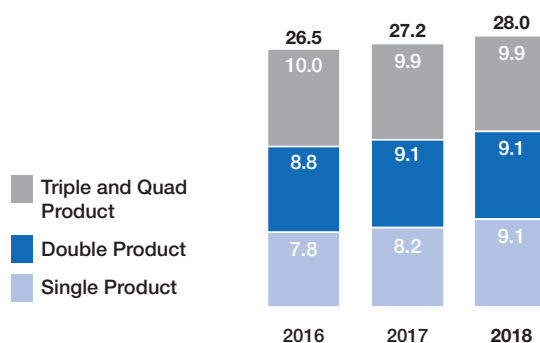
Revenue and Adjusted EBITDA

(in billions)



Residential Customer Relationships

(in millions)



Year ended December 31 (in millions)	2018	2017	2016	% Change 2017 to 2018	% Change 2016 to 2017
Revenue					
Residential:					
High-speed internet	\$ 17,144	\$ 15,681	\$ 14,421	9.3%	8.7%
Video	22,455	22,874	22,204	(1.8)	3.0
Voice	3,960	4,090	4,159	(3.2)	(1.7)
Business services	7,129	6,437	5,705	10.7	12.8
Advertising	2,795	2,450	2,626	14.1	(6.7)
Other	1,660	1,538	1,462	7.9	5.2
Total revenue	55,143	53,070	50,577	3.9	4.9
Operating costs and expenses					
Programming	13,249	12,907	11,576	2.7	11.5
Technical and product support	6,530	6,293	6,207	3.8	1.4
Customer service	2,386	2,448	2,481	(2.6)	(1.3)
Advertising, marketing and promotion	3,747	3,711	3,674	1.0	1.0
Franchise and other regulatory fees	1,566	1,589	1,550	(1.5)	2.5
Other	5,218	5,054	5,075	3.2	(0.4)
Total operating costs and expenses	32,696	32,002	30,563	2.2	4.7
Adjusted EBITDA	\$ 22,447	\$ 21,068	\$ 20,014	6.5%	5.3%

Customer Metrics

(in thousands, except per customer amounts)	Total Customers			Net Additional Customers		
	2018	2017	2016	2018	2017	2016
Customer relationships						
Residential customer relationships	28,046	27,168	26,533	878	635	705
Business services customer relationships	2,303	2,179	2,044	123	135	157
Total customer relationships	30,349	29,347	28,577	1,002	770	862
Average monthly total revenue per customer relationship	\$ 153.95	\$ 152.70	\$ 149.75			
Average monthly Adjusted EBITDA per customer relationship	\$ 62.67	\$ 60.62	\$ 59.26			
Residential customer relationships mix						
Single product customers	9,074	8,196	7,756	878	439	110
Double product customers	9,092	9,056	8,797	36	259	319
Triple and quad product customers	9,880	9,916	9,980	(36)	(64)	277
High-speed internet						
Residential customers	25,097	23,863	22,827	1,234	1,036	1,218
Business services customers	2,125	2,006	1,874	120	132	155
Total high-speed internet customers	27,222	25,869	24,701	1,353	1,168	1,373
Video						
Residential customers	20,959	21,303	21,488	(344)	(186)	103
Business services customers	1,027	1,054	1,019	(27)	35	57
Total video customers	21,986	22,357	22,508	(370)	(151)	161
Voice						
Residential customers	10,153	10,316	10,546	(163)	(231)	110
Business services customers	1,297	1,236	1,140	60	96	101
Total voice customers	11,449	11,552	11,687	(103)	(135)	211
Security and automation						
Security and automation customers	1,317	1,131	891	186	239	279

Customer metrics are presented based on actual amounts. Minor differences may exist due to rounding. For multiple dwelling units (“MDUs”), including buildings located on college campuses, whose residents have the ability to receive additional cable services, such as additional programming choices or our high-definition video (“HD”) or digital video recorder (“DVR”) advanced services, we count and report customers based on the number of potential billable relationships within each MDU. For MDUs whose residents are not able to receive additional cable services, the MDU is counted as a single customer. In 2017, we began to offer prepaid services that allow customers to prepay for at least 30 days of service. Residential high-speed internet and video customers as of December 31, 2018 included prepaid customers totaling approximately 135,000 and 5,000, respectively. Customer relationships represent the number of residential and business customers that subscribe to at least one of our cable services. Single product, double product, and triple and quad product customers represent residential customers that subscribe to one, two, or three and four of our cable services, respectively.

Average monthly total revenue per customer relationship for 2018 and 2017 was \$153.95 and \$152.70, respectively. This metric is impacted by rate adjustments and changes in the types and levels of services received by our residential and business services customers, as well as changes in advertising revenue. While revenue from our residential high-speed internet, video and voice services are also impacted by changes in the allocation of revenue among services sold in a bundle, the allocation does not impact average monthly total revenue per customer relationship.

Average monthly Adjusted EBITDA per customer relationship for 2018 and 2017 was \$62.67 and \$60.62, respectively. Each of our cable services has a different contribution to operating margin. We use average monthly Adjusted EBITDA per customer relationship to evaluate the profitability of our customer base across our service offerings. We believe this metric is useful particularly as we continue to focus on growing our higher-margin businesses, including residential high-speed internet and business services.

Cable Communications Segment – Revenue

Cable Communications is one of the nation’s largest providers of high-speed internet, video, voice and security and automation services (“cable services”) to residential customers under the Xfinity brand; we also provide these and other services to business customers and sell advertising. Our Cable Communications segment generates revenue primarily from residential and business customers that subscribe to our cable services, which we market individually and as bundled services. Our Cable Communications segment also generates revenue from selling through our allocation of scheduled advertising time on cable networks that is received as part of distribution agreements with these networks to local, regional and national advertisers.

High-Speed Internet

Cable Communications offers high-speed internet services with downstream speeds that range up to 1 gigabit per second (“Gbps”) and fiber-based speeds that range up to 2 Gbps. We are also deploying wireless gateways to improve the performance of multiple IP-enabled devices used at the same time within the home, provide faster internet speeds and create an in-home Wi-Fi network. Customers with xFi-enabled wireless gateways may personalize and manage their Wi-Fi network remotely, which includes viewing and changing their Wi-Fi password, identifying which devices are connected to their in-home network, setting parental controls and schedules, as well as other features. We believe our customer base will continue to grow as consumers choose our high-speed internet service and seek higher-speed offerings.

High-speed internet revenue increased 9.3% and 8.7% in 2018 and 2017, respectively, primarily due to:

- Increase in the number of residential customers receiving our high-speed internet services, which accounted for 4.9% and 5.1% in 2018 and 2017, respectively
- Increase in average high-speed internet rates

Video

Cable Communications offers a broad variety of video services packages that may include premium networks, pay-per-view services and our On Demand service. Our video customers may also subscribe for additional fees to our HD and DVR advanced services.

Video revenue decreased 1.8% in 2018 primarily due to:

- Decline in the number of residential video customers
- To a lesser extent, changes in average video rates

Video revenue increased 3.0% in 2017 primarily due to:

- Increase in average video rates
- Decline in the number of residential video customers

As of December 31, 2018, 15.5 million customers subscribed to at least one of our HD or DVR advanced services compared to 15.0 million customers and 14.8 million customers as of December 31, 2017 and 2016, respectively.

We have experienced, and expect that we will continue to experience, declines in the number of residential video customers due to competitive pressures, and we expect that our video revenue will continue to decline. Competition is intense, both from traditional multichannel video providers and online video distribution services. We believe our X1 platform helps us compete more effectively against this competition, and have also continued to employ sales and marketing programs, such as promotions, bundled service offerings and service offerings targeted at specific market segments.

Voice

Cable Communications offers voice services that provide local and long-distance calling and other related features.

Voice revenue decreased 3.2% in 2018 primarily due to:

- Decline in the number of residential voice customers
- Decrease due to the amount allocated to voice revenue for bundled services

Voice revenue decreased 1.7% in 2017 primarily due to:

- Decrease due to the amount allocated to voice revenue for bundled services
- Decline in the number of residential voice customers

We expect that the number of residential voice customers and voice revenue will continue to decline.

Business Services

Cable Communications offers a variety of products and services to businesses. Small business services offerings primarily include high-speed internet services, as well as voice and video services. Cable Communications also offers Ethernet network services to medium-sized customers and larger enterprises, as well as advanced voice services, along with video solutions that serve hotels and other large venues. In addition, cellular backhaul services are provided to mobile network operators to help them manage their network bandwidth.

Cable Communications has expanded its enterprise service offerings to include a software-defined networking product for our medium-sized and enterprise customers. Enterprise customers may also receive support services related to Wi-Fi networks, router management, network security, business continuity risks and other services. Enterprise service offerings are primarily provided to Fortune 1000 companies and other large enterprises with multiple locations.

Business services revenue increased 10.7% and 12.8% in 2018 and 2017, respectively, primarily due to:

- Increase in the number of customers receiving our small and medium-sized business services offerings
- Increase in average rates

In 2018, 2017 and 2016, revenue from our small business services offerings represented the majority of our total business services revenue. We believe the increases in the number of business customers are primarily the result of our efforts to gain market share from competitors by offering competitive services and pricing. We expect that the contribution to our growth rate from medium-sized and enterprise customers will increase relative to that of our small-business customers as small business service matures.

Advertising

As part of Cable Communications' distribution agreements with cable networks, it generally receives an allocation of scheduled advertising time that is sold through its advertising business to local, regional and national advertisers. In most cases, the available advertising units are sold by our sales force. In some cases, it works with representation firms as an extension of its sales force to sell a portion of the advertising units allocated to it. Cable Communications also represents the advertising sales efforts of other multichannel video providers in some markets. In addition, it generates revenue from the sale of advertising on its digital platforms. It also provides technology, tools, data-driven services and marketplace solutions to customers in the media industry, which allow advertisers to more effectively engage with their target audiences. Advertising revenue is affected by the strength of the advertising market, general economic conditions, and cyclicalities related to political campaigns and issue-oriented advertising.

Advertising revenue increased 14.1% in 2018 primarily due to an increase in political advertising revenue. Advertising revenue decreased 6.7% in 2017 primarily due to a decrease in political advertising revenue. Excluding the impact of political advertising revenue, advertising increased 1.7% and 0.3% in 2018 and 2017, respectively.

In 2018, 4% of our Cable Communications segment advertising revenue was generated from our NBCUniversal segments, compared to 5% in both 2017 and 2016. These amounts are eliminated in our consolidated financial statements but are included in the amounts presented above.

Other

Other revenue primarily includes revenue related to residential customer late fees. We also receive revenue related to fees from other services, such as our security and automation services.

Other revenue increased 7.9% and 5.2% in 2018 and 2017, respectively, primarily due to:

- Increase in revenue related to the licensing of our X1 platform to other multichannel video providers
- Increase in revenue from our security and automation services

Cable Communications Segment – Operating Costs and Expenses

Programming Expenses

Programming expenses, which represent our most significant operating expense, are the fees we incur to provide content to our video customers. These expenses are affected by the programming license fees charged by cable networks, the fees charged for retransmission of the signals from local broadcast television stations, the number of video customers we serve and the amount of content we provide.

Programming expenses increased in 2018 and 2017 primarily due to:

- Increase in programming license fees, including retransmission consent fees and sports programming costs
- Increase in 2017 due to the timing of contract renewals

We anticipate that our programming expenses will continue to increase, which may be at rates higher than those experienced recently, due to the timing of contract renewals in the future.

Technical and Product Support Expenses

Technical and product support expenses include costs to complete service call and installation activities, as well as costs for network operations, product development, fulfillment and provisioning.

Technical and product support expenses increased in 2018 and 2017 primarily due to:

- Increased expenses related to the continued development, deployment and support of our X1 platform, cloud DVR technology and wireless gateways
- Increased expenses related to the continued growth in business services and security and automation services

Customer Service Expenses

Customer service expenses include the personnel and other costs associated with handling the sale of services to customers and customer service activity.

Customer service expenses decreased in 2018 primarily due to lower personnel costs as a result of reduced call volumes.

Customer service expenses decreased slightly in 2017 primarily due to reduced call volume, which were partially offset by increased personnel costs.

Advertising, Marketing and Promotion Expenses

Advertising, marketing and promotion expenses include the costs associated with attracting new customers and promoting our service offerings.

Advertising, marketing and promotion expenses were relatively flat in 2018 and 2017.

Franchise and Other Regulatory Fees

Cable franchise and other regulatory fees represent the fees we are required to pay to federal, state and local authorities under the terms of our cable franchise agreements. Franchise and other regulatory fees decreased in 2018 primarily due to a decrease in the revenue to which the fees apply. Franchise and other regulatory fees increased in 2017 primarily due to an increase in the revenue to which the fees apply.

Other Operating Costs and Expenses

Other operating costs and expenses increased in 2018 due to an increase in costs to support our advertising sales business. Other operating costs and expenses remained relatively flat in 2017.

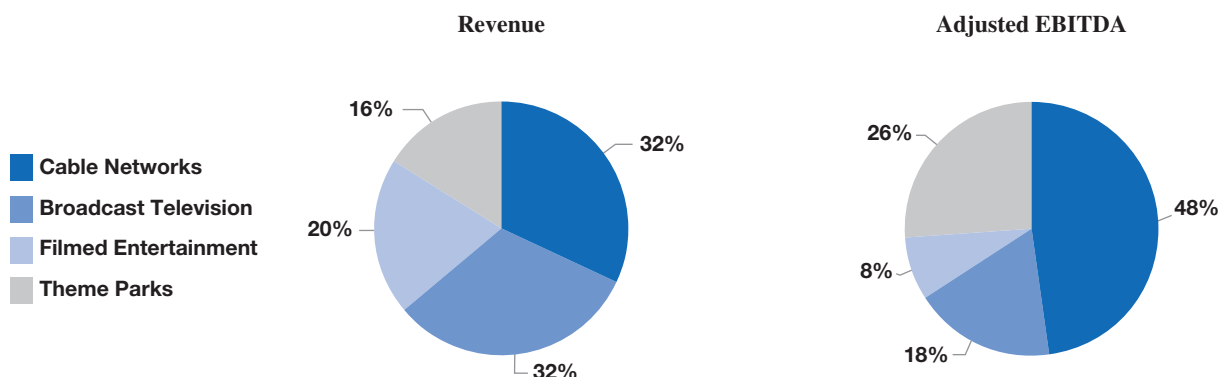
Cable Communications Segment – Operating Margin

Our Cable Communications segment operating margin is Adjusted EBITDA as a percentage of revenue. The most significant operating costs and expenses for our Cable Communications segment are the programming expenses we incur to provide content to our video customers, which increased 2.7% and 11.5% in 2018 and 2017, respectively. We will continue to focus on growing our higher-margin businesses, particularly residential high-speed internet and business services, and on overall operating cost management.

Our Cable Communications segment operating margin was 40.7%, 39.7% and 39.6% in 2018, 2017 and 2016, respectively.

NBCUniversal Segments Overview

2018 NBCUniversal Segments Operating Results^(a)



(a) Charts exclude the results of NBCUniversal Headquarters, Other, and eliminations.

Year ended December 31 (in millions)	2018	2017	2016	% Change 2017 to 2018	% Change 2016 to 2017
Revenue					
Cable Networks	\$ 11,773	\$ 10,497	\$ 10,324	12.2%	1.7%
Broadcast Television	11,439	9,563	10,085	19.6	(5.2)
Filmed Entertainment	7,152	7,595	6,229	(5.8)	21.9
Theme Parks	5,683	5,443	4,946	4.4	10.0
Headquarters, other and eliminations	(286)	(262)	(308)	NM	NM
Total revenue	\$ 35,761	\$ 32,836	\$ 31,276	8.9%	5.0%
Adjusted EBITDA					
Cable Networks	\$ 4,428	\$ 4,053	\$ 3,681	9.3%	10.1%
Broadcast Television	1,657	1,251	1,293	32.5	(3.3)
Filmed Entertainment	734	1,276	662	(42.5)	92.6
Theme Parks	2,455	2,384	2,190	3.0	8.9
Headquarters, other and eliminations	(676)	(746)	(688)	NM	NM
Total Adjusted EBITDA	\$ 8,598	\$ 8,218	\$ 7,138	4.6%	15.1%

Cable Networks Segment Results of Operations

Year ended December 31 (in millions)	2018	2017	2016	% Change 2017 to 2018	% Change 2016 to 2017
Revenue					
Distribution	\$ 6,826	\$ 6,081	\$ 5,978	12.3%	1.7%
Advertising	3,587	3,359	3,530	6.8	(4.9)
Content licensing and other	1,360	1,057	816	28.6	29.6
Total revenue	11,773	10,497	10,324	12.2	1.7
Operating costs and expenses					
Programming and production	5,357	4,599	4,863	16.5	(5.4)
Other operating and administrative	1,453	1,326	1,279	9.5	3.7
Advertising, marketing and promotion	535	519	501	3.2	3.6
Total operating costs and expenses	7,345	6,444	6,643	14.0	(3.0)
Adjusted EBITDA	\$ 4,428	\$ 4,053	\$ 3,681	9.3%	10.1%

Cable Networks Segment – Revenue

Distribution

Distribution revenue is generated from the distribution of our cable network programming to traditional and virtual multichannel video providers and is affected by the number of subscribers receiving our cable networks and the fees we charge per subscriber.

Year ended December 31 (in millions)	2018	2017	2016	% Change 2017 to 2018	% Change 2016 to 2017
Distribution	\$ 6,826	\$ 6,081	\$ 5,978	12.3%	1.7%
<i>Distribution, excluding 2018 PyeongChang Olympics and 2016 Rio Olympics</i>	<i>6,590</i>	<i>6,081</i>	<i>5,680</i>	<i>8.4</i>	<i>7.1</i>

Distribution revenue increased in 2018 primarily due to:

- Increase in revenue associated with our broadcast of the 2018 PyeongChang Olympics
- Increases in the contractual rates charged under distribution agreements
- Increases due to timing of contract renewals
- Decrease due to continued decline in the number of subscribers at our cable networks

Distribution revenue increased in 2017 primarily due to:

- Increases in the contractual rates charged under distribution agreements
- Increases due to timing of contract renewals

- Decrease due to absence of revenue associated with our broadcast of the 2016 Rio Olympics
- Decrease due to continued decline in the number of subscribers at our cable networks

Advertising

Advertising revenue is generated from the sale of advertising units sold on our cable networks and digital properties. Advertising revenue is primarily based on the price we charge for each advertising unit, which is generally based on audience ratings, the value of our viewer demographics to advertisers and the number of advertising units we can place in our cable networks' programming schedules. Advertising revenue is affected by the audience ratings of our programming, the strength of the national advertising market and general economic conditions.

Year ended December 31 (in millions)	2018	2017	2016	% Change 2017 to 2018	% Change 2016 to 2017
Advertising	\$ 3,587	\$ 3,359	\$ 3,530	6.8%	(4.9)%
<i>Advertising, excluding 2018 PyeongChang Olympics and 2016 Rio Olympics</i>	<i>3,445</i>	<i>3,359</i>	<i>3,396</i>	<i>2.6</i>	<i>(1.1)</i>

Advertising revenue increased in 2018 primarily due to:

- Increase in revenue associated with our broadcast of the 2018 PyeongChang Olympics
- Increase due to higher prices for advertising units sold
- Decrease due to the impact of continued declines in audience ratings at our networks

Advertising revenue decreased in 2017 primarily due to:

- Decrease in revenue due to the absence of our broadcast of the 2016 Rio Olympics
- Decrease due to the impact of continued declines in audience ratings at our networks
- Increase due to higher prices for advertising units sold

Content Licensing and Other

Content licensing and other revenue is generated primarily from the licensing of our owned programming in the United States and internationally to cable and broadcast networks and subscription video on demand services, as well as from the sale of our owned programming on DVDs and through digital distribution services such as iTunes. In addition, our cable television studio production operations generate revenue from programming the studio produces for third-party networks and for subscription video on demand services.

Content licensing and other revenue increased in 2018 and 2017 primarily due to the timing of content provided under our licensing agreements.

In 2018, 2017 and 2016, 14%, 15% and 15%, respectively, of our Cable Networks segment revenue was generated from our Cable Communications segment. These amounts are eliminated in Comcast's consolidated financial statements but are included in the amounts presented above.

Cable Networks Segment – Operating Costs and Expenses

Programming and Production Costs

Programming and production costs include the amortization of owned and acquired programming, sports rights, direct production costs, residual and participation payments, production overhead, costs associated with the distribution of our programming to third-party networks and other distribution platforms, and on-air talent costs.

Programming and production costs increased in 2018 primarily due to:

- Increase in costs associated with our broadcast of the 2018 PyeongChang Olympics
- Increase in costs related to our continued investment in original programming
- Increase in studio production costs
- Increase in other sports programming rights

Programming and production costs decreased in 2017 primarily due to:

- Decrease in costs due to the absence of our broadcast of the 2016 Rio Olympics

- Increase in other sports programming rights costs and higher studio production costs

Other Operating and Administrative Costs and Expenses

Other operating and administrative costs and expenses include salaries, employee benefits, rent and other overhead expenses.

These expenses increased in 2018 primarily due to:

- Increases in employee-related costs
- Increases in costs associated with our various digital properties

These expenses increased in 2017 primarily due to increases in employee-related costs.

Advertising, Marketing and Promotion Expenses

Advertising, marketing and promotion expenses consist primarily of the costs associated with promoting programming on our cable networks and digital properties.

Advertising, marketing and promotion expenses increased in 2018 primarily due to:

- Increases in spending related to the 2018 PyeongChang Olympics
- Increases in spending related to our digital properties

Advertising, marketing and promotion expenses increased in 2017 primarily due to increased spending on marketing related to programming on our cable networks and our new digital platforms.

Broadcast Television Segment Results of Operations

Year ended December 31 (in millions)	2018	2017	2016	% Change 2017 to 2018	% Change 2016 to 2017
Revenue					
Advertising	\$ 7,010	\$ 5,654	\$ 6,834	24.0%	(17.3)%
Content licensing	2,182	2,114	1,837	3.2	15.1
Distribution and other	2,247	1,795	1,414	25.2	26.9
Total revenue	11,439	9,563	10,085	19.6	(5.2)
Operating costs and expenses					
Programming and production	7,789	6,440	6,949	20.9	(7.3)
Other operating and administrative	1,547	1,391	1,381	11.1	0.7
Advertising, marketing and promotion	446	481	462	(7.3)	4.2
Total operating costs and expenses	9,782	8,312	8,792	17.7	(5.5)
Adjusted EBITDA	\$ 1,657	\$ 1,251	\$ 1,293	32.5%	(3.3)%

Broadcast Television Segment – Revenue

Advertising

Advertising revenue is generated from the sale of advertising units sold on our broadcast networks, owned local broadcast television stations and digital properties. Advertising revenue is primarily based on the price we charge for each advertising unit, which is generally based on audience ratings and the value of our viewer demographics to advertisers, and the number of advertising units we can place in our broadcast networks' and owned local television stations' programming schedules. Advertising revenue is affected by the strength of the national and local advertising markets, general economic conditions, cyclical related to political campaigns and issue-oriented advertising, and the success and ratings of our programming.

Year ended December 31 (in millions)	2018	2017	2016	% Change 2017 to 2018	% Change 2016 to 2017
Advertising	\$ 7,010	\$ 5,654	\$ 6,834	24.0%	(17.3)%
<i>Advertising, excluding 2018 PyeongChang Olympics, 2018 Super Bowl and 2016 Rio Olympics</i>	<i>5,929</i>	<i>5,654</i>	<i>5,786</i>	<i>4.9</i>	<i>(2.3)</i>

Advertising revenue increased in 2018 primarily due to:

- Increase in revenue associated with our broadcasts of the 2018 PyeongChang Olympics and 2018 Super Bowl

- Increase due to higher prices for advertising units sold
- Decrease due to the impact of continued declines in audience ratings

Advertising revenue decreased in 2017 primarily due to:

- Decrease due to the absence of revenue associated with our broadcast of the 2016 Rio Olympics
- Decrease due to the impact of continued declines in audience ratings
- Increase due to higher prices for advertising units sold

Content Licensing

Content licensing revenue is generated from the licensing of our owned programming in the United States and internationally to various distribution platforms, including to cable and broadcast networks, and to subscription video on demand services. In addition, our broadcast television studio production operations develop and produce original content that they license to broadcast networks, cable networks and local broadcast television stations owned by us and third parties, as well as to subscription video on demand services. The production and distribution costs related to our owned programming generally exceed the revenue generated from the initial network license, which means the subsequent licensing of our owned programming series following the initial network license is critical to their financial success.

Content licensing revenue increased in 2018 and 2017 primarily due to the timing of content provided under our licensing agreements.

Distribution and Other

We generate distribution and other revenue primarily from fees for retransmission consent of our owned local broadcast television stations and associated fees received from NBC-affiliated local broadcast television stations, as well as from the sale of our owned programming on DVDs and through digital distribution services. The sale of our owned programming is driven primarily by the popularity of our broadcast networks and programming series and therefore fluctuates based on consumer spending and acceptance. Distribution and other revenue also includes distribution revenue associated with our periodic broadcasts of the Olympic Games.

Year ended December 31 (in millions)	2018	2017	2016	% Change 2017 to 2018	% Change 2016 to 2017
Distribution and other	\$ 2,247	\$ 1,795	\$ 1,414	25.2%	26.9%
<i>Distribution and other, excluding 2018 PyeongChang Olympics and 2016 Rio Olympics</i>	2,135	1,795	1,274	19.0	40.9

Distribution and other revenue increased in 2018 primarily due to:

- Increases in fees recognized under our retransmission consent agreements
- Increase in revenue from our broadcast of the 2018 PyeongChang Olympics

Distribution and other revenue increased in 2017 primarily due to:

- Increase in fees recognized under our retransmission consent agreements
- Decrease due to the absence of revenue associated with our broadcast of the 2016 Rio Olympics

Broadcast Television Segment – Operating Costs and Expenses

Programming and Production Costs

Programming and production costs relate to content that originates on our broadcast networks and owned local broadcast television stations, as well as owned content that is licensed to third parties. These costs include the amortization of owned and acquired programming costs, sports rights, direct production costs, residual and participation payments, production overhead, costs associated with the distribution of our programming to third-party networks and other distribution platforms, and on-air talent costs.

Programming and production costs increased in 2018 primarily due to costs associated with our broadcasts of the 2018 PyeongChang Olympics and the 2018 Super Bowl.

Programming and production costs decreased in 2017 primarily due to:

- Decrease in costs due to the absence of our broadcast of the 2016 Rio Olympics

- Increase due to higher studio production costs, our continued investment in original programming and increases in other sports programming rights costs

Other Operating and Administrative Costs and Expenses

Other operating and administrative costs and expenses include salaries, employee benefits, rent and other overhead expenses, and these costs increased in 2018 primarily due to employee-related costs and overhead expenses. Other operating and administrative costs and expenses increased slightly in 2017.

Advertising, Marketing and Promotion Expenses

Advertising, marketing and promotion expenses consist primarily of the costs associated with promoting our owned and acquired television programming, as well as the marketing of DVDs and costs associated with our digital properties. These expenses decreased in 2018 primarily due to decreased spending on marketing related to our news and local programming. These expenses increased in 2017 primarily due to increased spending on marketing related to our entertainment and news programming.

Filmed Entertainment Segment Results of Operations

Year ended December 31 (in millions)	2018	2017	2016	% Change 2017 to 2018	% Change 2016 to 2017
Revenue					
Theatrical	\$ 2,111	\$ 2,192	\$ 1,560	(3.7)%	40.5%
Content licensing	2,899	2,956	2,518	(1.9)	17.4
Home entertainment	1,048	1,287	1,182	(18.6)	9.0
Other	1,094	1,160	969	(5.7)	19.6
Total revenue	7,152	7,595	6,229	(5.8)	21.9
Operating costs and expenses					
Programming and production	3,446	3,500	2,881	(1.5)	21.5
Other operating and administrative	1,189	1,260	1,086	(5.7)	16.0
Advertising, marketing and promotion	1,783	1,559	1,600	14.3	(2.5)
Total operating costs and expenses	6,418	6,319	5,567	1.6	13.5
Adjusted EBITDA	\$ 734	\$ 1,276	\$ 662	(42.5)%	92.6%

Filmed Entertainment Segment – Revenue

Theatrical

Theatrical revenue is generated from the worldwide theatrical release of our produced and acquired films for exhibition in movie theaters and is significantly affected by the timing of each release and the number of films we distribute, as well as their acceptance by audiences. Theatrical revenue is also affected by the number of exhibition screens, ticket prices, the percentage of ticket sale retention by the exhibitors and the popularity of competing films at the time our films are released. The success of a film in movie theaters is a significant factor in determining the revenue a film is likely to generate in succeeding distribution platforms.

Theatrical revenue decreased in 2018 primarily due to the timing of releases and the strong performance of prior year releases, which were partially offset by successful releases in the current year. Theatrical revenue increased in 2017 primarily due to the strong performances of several releases in our 2017 film slate. The following key titles released in each respective fiscal year were contributors to the drivers of changes in revenue:

Worldwide Theatrical Releases		
2018	2017	2016
<i>Jurassic World: Fallen Kingdom</i> <i>Dr. Seuss' The Grinch</i> <i>Mamma Mia! Here We Go Again</i> <i>Fifty Shades Freed</i>	<i>The Fate of the Furious</i> <i>Despicable Me 3</i> <i>Fifty Shades Darker</i>	<i>The Secret Life of Pets</i> <i>Sing</i>

Content Licensing

Content licensing revenue is generated primarily from the licensing of our produced and acquired films to cable, broadcast and premium networks, and to subscription video on demand services.

Content licensing revenue decreased in 2018 primarily due to the timing of when content was made available under licensing agreements.

Content licensing revenue increased in 2017 primarily due to the timing of when content was made available under licensing agreements, including content from DreamWorks Animation.

Home Entertainment

Home entertainment revenue is generated from the sale of our produced and acquired films on DVDs to retail stores, rental kiosks and by mail services, and in digital formats. Home entertainment revenue is significantly affected by the timing and number of our releases and their acceptance by consumers. Release dates are determined by several factors, including the timing of the exhibition of a film in movie theaters, holiday periods and the timing of competitive releases. The overall DVD market continues to experience declines due to the maturation of the DVD format from increasing shifts in consumer behavior toward digital distribution services and subscription rental services, both of which generate less revenue per transaction than DVD sales, as well as due to piracy.

Home entertainment revenue decreased in 2018 primarily due to higher sales of 2017 releases in the prior year period, which were partially offset by sales of 2018 releases in the current year period. Home entertainment revenue increased in 2017 primarily due to strong sales of several 2017 releases. The following key titles released in each respective fiscal year were contributors to the drivers of changes in home entertainment revenue:

Home Entertainment Releases		
2018	2017	2016
<i>Jurassic World: Fallen Kingdom</i> <i>Fifty Shades Freed</i> <i>Mamma Mia! Here We Go Again</i>	<i>Sing</i> <i>The Fate of the Furious</i> <i>Despicable Me 3</i>	<i>Jason Bourne</i> <i>The Secret Life of Pets</i>

Other

We also generate revenue from Fandango, our movie ticketing and entertainment business, from the sale of consumer products, from the production and licensing of live stage plays, and from the distribution of filmed entertainment produced by third parties.

Other revenue decreased in 2018 primarily due to:

- Decrease due to the absence of revenue associated with the sale of a business in 2018
- Decrease in revenue from consumer products

Other revenue increased in 2017 primarily due to:

- Increase in revenue from consumer products, including from DreamWorks Animation
- Increase in revenue from Fandango

Filmed Entertainment Segment – Operating Costs and Expenses

Programming and Production Costs

Programming and production costs include the amortization of capitalized film production and acquisition costs, residual and participation payments, and distribution expenses. Residual payments represent amounts payable to individuals hired under collective bargaining agreements to work on productions and are calculated based on post-theatrical revenue. Participation payments are primarily based on film performance and represent contingent consideration payable to creative talent, to third parties that have entered into cofinancing agreements with us and to other parties involved in the production of a film. The costs associated with producing films have generally increased in recent years and may continue to increase in the future.

Programming and production costs decreased in 2018 due to:

- Decrease due to higher amortization of film production costs in 2017 compared to 2018

Programming and production costs increased in 2017 primarily due to:

- Increase due to higher amortization of film production costs for our 2017 releases
- Increase in costs due to the inclusion of costs associated with DreamWorks Animation

Other Operating and Administrative Costs and Expenses

Other operating and administrative costs and expenses include salaries, employee benefits, rent and other overhead expenses.

Other operating and administrative expenses decreased in 2018 primarily due to:

- Decrease in employee-related costs

- Decrease due to the absence of expenses associated with the sale of a business in 2018

Other operating and administrative expenses increased in 2017 primarily due to:

- Increase in employee-related costs
- Increase in costs due to the inclusion of a full year of expenses associated with DreamWorks Animation

Advertising, Marketing and Promotion Expenses

Advertising, marketing and promotion expenses consist primarily of expenses associated with advertising for our theatrical releases and the marketing of our films on DVDs and in digital formats. We incur significant marketing expenses before and throughout the release of a film in movie theaters. As a result, we typically incur losses on a film prior to and during the film's exhibition in movie theaters and may not realize profits, if any, until the film generates home entertainment and content licensing revenue. The costs associated with marketing films have generally increased in recent years and may continue to increase in the future.

Advertising, marketing and promotion expenses increased in 2018 primarily due to a higher number of releases in the current year period. Advertising, marketing and promotion expenses decreased in 2017 due to a higher number of releases in 2016 compared to 2017.

Theme Parks Segment Results of Operations

Year ended December 31 (in millions)	2018	2017	2016	% Change 2017 to 2018	% Change 2016 to 2017
Revenue	\$ 5,683	\$ 5,443	\$ 4,946	4.4%	10.0%
Operating costs and expenses	3,228	3,059	2,756	5.5	11.0
Adjusted EBITDA	\$ 2,455	\$ 2,384	\$ 2,190	3.0%	8.9%

Theme Parks Segment – Revenue

The Theme Parks segment generates revenue primarily from ticket sales and guest spending at Universal theme parks. Guest spending includes in-park spending on food, beverages and merchandise. Guest attendance at our theme parks and guest spending depend heavily on the general environment for travel and tourism, including consumer spending on travel and other recreational activities.

Theme Parks segment revenue increased in 2018 primarily due to:

- Increases in guest spending, driven by increased ticket prices and spending on merchandise, food and beverage
- Decrease due to the impact of inclement weather conditions and natural disasters in Japan

Theme Parks segment revenue increased in 2017 primarily due to:

- Increases in guest spending and higher guest attendance driven by the continued success of *The Wizarding World of Harry Potter*™ attraction in Hollywood, and the openings of *Minion Park*™ in Japan and *Volcano Bay*™ in Orlando

Theme Parks Segment – Operating Costs and Expenses

Our Theme Parks segment operating costs and expenses consist primarily of theme park operations, including repairs and maintenance and related administrative expenses; food, beverage and merchandise costs; labor costs; and sales and marketing costs.

Theme Parks segment operating costs and expenses increased in 2018 primarily due to higher operating costs related to newer attractions at our domestic theme parks.

Theme Parks segment operating costs and expenses increased in 2017 primarily due to:

- Increase in operating costs related to higher guest attendance and new attractions
- Increase in marketing costs associated with our domestic theme parks

NBCUniversal Headquarters, Other and Eliminations

Headquarters and Other operating costs and expenses incurred by our NBCUniversal businesses include overhead, personnel costs and costs associated with corporate initiatives. Operating costs and expenses decreased in 2018 primarily due to lower employee-related costs. Operating costs and expenses increased in 2017 primarily due to higher employee-related costs.

Sky Segment

In the fourth quarter of 2018, we acquired a 100% interest in Sky through a series of transactions. Sky is one of Europe's leading entertainment companies, which primarily includes a direct-to-consumer business, providing video, high-speed internet, voice and wireless phone services, and a content business, operating entertainment networks, the Sky News broadcast network and Sky Sports networks. Sky results for the period from October 9, 2018 to December 31, 2018 are included in our consolidated financial results as presented below. These results are not indicative of a full quarter of Sky's operations.

(in millions)	For the period October 9, 2018 to December 31, 2018
Revenue	
Direct-to-consumer	\$ 3,632
Content	304
Advertising	651
Total revenue	4,587
Operating costs and expenses	
Programming and production	2,137
Direct network costs	399
Other	1,359
Total operating costs and expenses	3,895
Adjusted EBITDA	\$ 692

Customer Metrics

(in thousands)	December 31, 2018
Total customer relationships	23,600

Sky Segment – Revenue

Direct-to-Consumer

Direct-to-consumer revenue is derived from subscription and transactional revenue from residential and business customers. Subscription revenue includes revenue from residential and business subscribers to video, high-speed internet, phone and wireless phone services, including OTT subscriptions and income from set-top boxes, wireless phone handset and tablet sales, installation, service calls and warranties. Transactional revenue includes the purchase of physical and digital content, OTT daily, weekly and monthly passes, and pay-per-view programming.

Content

Content revenue is derived from the distribution of Sky's owned television channels on third-party platforms and the licensing of owned programming to third-party video providers.

Advertising

Advertising revenue is derived from the sale of advertising and sponsorships across Sky's owned television channels and where it represents the sales efforts of third-party channels.

Sky Segment – Operating Costs and Expenses

Programming and Production Costs

Programming and production costs primarily relate to content originating on Sky's channels. These costs include the amortization of owned and acquired programming costs, sports rights, direct production costs, residual and participation payments, production overhead, and on-air talent costs. These expenses also include the fees associated with programming distribution agreements for channels owned by third parties, which are generally based on the number of customers who are able to watch the programming and the platforms on which the content is provided.

Direct Network Costs

Direct network costs primarily include costs directly related to the supply of high-speed internet and voice services, including wireless phone services, to Sky's customers. This includes call costs, monthly wholesale access fees and other variable costs associated with our network. In addition, it includes the cost of mobile handsets sold to customers.

Other

Other expenses include costs related to marketing, subscriber management, supply chain, transmission, technology, fixed networks and general administrative costs.

Corporate and Other Results of Operations

Year ended December 31 (in millions)	2018	2017	2016	% Change 2017 to 2018	% Change 2016 to 2017
Revenue	\$ 1,403	\$ 1,193	\$ 886	17.5%	34.7%
Operating costs and expenses	3,428	2,815	1,735	21.7	62.3
Adjustment for legal settlement	(125)	(250)	—	NM	NM
Adjustment for Sky transaction-related costs	(355)	—	—	NM	NM
Adjusted EBITDA	\$ (1,545)	\$ (1,372)	\$ (849)	(12.6)%	(61.6)%

Corporate and Other – Revenue

Other revenue primarily relates to revenue from business development initiatives, such as our wireless phone service that launched in 2017, and from Comcast Spectacor, which owns the Philadelphia Flyers and the Wells Fargo Center arena in Philadelphia, Pennsylvania.

Other revenue increased in 2018 primarily due to:

- Increase in revenue associated with our wireless phone service
- Decrease in revenue due to the sale of a controlling interest in our arena management-related businesses in the second quarter of 2018 and the sale of a business in the third quarter of 2017

Corporate and Other – Operating Costs and Expenses

Corporate and Other operating costs and expenses primarily include overhead and personnel costs, the costs of other business development initiatives, including our wireless phone service, and operating costs and expenses associated with Comcast Spectacor.

Corporate and Other operating costs and expenses increased in 2018 primarily due to:

- Increase in expenses associated with our wireless phone service
- Increase in expenses directly related to the Sky transaction, including the U.K. share acquisition tax and success-based investment banker fees, and legal, accounting and valuation services, as well as certain other impacts resulting from the Sky transaction, such as expenses resulting from the replacement of share-based compensation awards
- Decrease in operating costs and expenses due to the sale of a controlling interest in our arena management-related businesses in the second quarter of 2018 and the sale of a business in the third quarter of 2017
- Corporate and Other Adjusted EBITDA excludes \$355 million of costs incurred in the fourth quarter of 2018 in connection with the Sky transaction, including the U.K. share acquisition tax and success-based investment banker fees, and \$125 million of expenses related to a legal settlement

Corporate and Other operating costs and expenses increased in 2017 primarily due to:

- Increase in expenses associated with our new wireless phone service
- Increase of \$171 million related to a one-time special cash bonus for eligible employees
- Corporate and Other Adjusted EBITDA excludes \$250 million of expense related to a legal settlement in 2017

Non-GAAP Financial Measure

Consolidated Adjusted EBITDA is a non-GAAP financial measure of performance and is defined as net income attributable to Comcast Corporation before net income (loss) attributable to noncontrolling interests and redeemable subsidiary preferred stock, income tax benefit (expense), investment and other income (loss), net, interest expense, depreciation and amortization expense, and other operating gains and losses (such as impairment charges related to fixed and intangible assets and gains or losses on the sale of long-lived assets), if any. From time to time we may exclude from Adjusted EBITDA the impact of certain events, gains, losses or other charges (such as significant legal settlements) that affect the period-to-period comparability of our operating performance. This measure eliminates the significant level of noncash depreciation and amortization expense that results from the

capital-intensive nature of certain of our businesses and from intangible assets recognized in business combinations. It is also unaffected by our capital and tax structures, and by our investment activities, including the results of entities that we do not consolidate, as our management excludes these results when evaluating our operating performance. Our management and Board of Directors use this financial measure to evaluate our consolidated operating performance and the operating performance of our operating segments and to allocate resources and capital to our operating segments. It is also a significant performance measure in our annual incentive compensation programs. Additionally, we believe that Adjusted EBITDA is useful to investors because it is one of the bases for comparing our operating performance with that of other companies in our industries, although our measure of consolidated Adjusted EBITDA may not be directly comparable to similar measures used by other companies. We reconcile consolidated Adjusted EBITDA to net income attributable to Comcast Corporation. This measure should not be considered a substitute for operating income (loss), net income (loss), net income (loss) attributable to Comcast Corporation, or net cash provided by operating activities that we have reported in accordance with GAAP.

Reconciliation from Net Income Attributable to Comcast Corporation to Adjusted EBITDA

Year ended December 31 (in millions)	2018	2017	2016
Net income attributable to Comcast Corporation	\$ 11,731	\$ 22,735	\$ 8,678
Net income attributable to noncontrolling interests and redeemable subsidiary preferred stock	131	187	350
Income tax (benefit) expense	3,380	(7,569)	5,298
Investment and other (income) loss, net	225	(421)	(437)
Interest expense	3,542	3,086	2,942
Depreciation	8,281	7,914	7,464
Amortization	2,736	2,216	1,962
Other operating gains	(341)	(442)	—
Adjustment for Sky transaction-related costs	355	—	—
Adjustment for legal settlement	125	250	—
Adjusted EBITDA	\$ 30,165	\$ 27,956	\$ 26,257

Liquidity and Capital Resources

Our businesses generate significant cash flows from operating activities. We believe that we will be able to continue to meet our current and long-term liquidity and capital requirements, including fixed charges, through our cash flows from operating activities; existing cash, cash equivalents and investments; available borrowings under our existing credit facilities; and our ability to obtain future external financing. We anticipate that we will continue to use a substantial portion of our cash flows in repaying our debt obligations, funding our capital expenditures, investing in business opportunities and returning capital to shareholders.

We also maintain significant availability under our revolving credit facilities and our commercial paper programs to meet our short-term liquidity requirements. Our commercial paper programs provide a lower-cost source of borrowing to fund our short-term working capital requirements. See Note 7 to Comcast's consolidated financial statements for additional information on the Comcast, NBCUniversal Enterprise and Sky revolving credit facilities and the related guarantees. As of December 31, 2018, amounts available under our consolidated revolving credit facilities, net of amounts outstanding under our commercial paper programs and outstanding letters of credit, totaled \$9.2 billion, which included \$0.9 billion available under the NBCUniversal Enterprise revolving credit facility and \$0.7 billion available under the Sky revolving credit facility.

In the fourth quarter of 2018, we acquired a 100% interest in Sky for total cash consideration of £30.2 billion (approximately \$39.4 billion using the exchange rates on the purchase dates). To finance the acquisition, we used funds from unsecured term loans and senior unsecured fixed and floating rate notes. The unsecured term loans and senior notes are guaranteed by Comcast Cable and NBCUniversal. The remaining amount of consideration was funded using cash on hand. As of October 9, 2018, Sky had outstanding indebtedness that is now consolidated in our financial statements with an aggregate fair value of approximately \$11.2 billion using the exchange rates as of such date, which is not guaranteed by us, Comcast Cable or NBCUniversal as of December 31, 2018.

We, NBCUniversal and Comcast Cable are subject to the covenants and restrictions set forth in the indentures governing our public debt securities and in the credit agreements governing the Comcast revolving credit facility. The financial covenant in the credit facility pertains to leverage, which is the ratio of debt to EBITDA, as defined in the credit facility. We test for compliance with this financial covenant on an ongoing basis. As of December 31, 2018, we met this financial covenant by a significant margin. We do not expect to have to reduce debt or improve operating results in order to continue to comply with this financial covenant. In addition, the Sky revolving credit facility contains two financial covenants, a ratio of net debt to EBITDA and a ratio of EBITDA to net interest payable, as defined in the Sky credit facility. The Universal Studios Japan term loans also contain certain financial covenants. As of December 31, 2018, Sky and Universal Studios Japan were in compliance with all of these covenants.

Operating Activities

Components of Net Cash Provided by Operating Activities

Year ended December 31 (in millions)	2018	2017	2016
Operating income	\$ 19,009	\$ 18,018	\$ 16,831
Depreciation, amortization and other operating gains	10,676	9,688	9,426
Noncash share-based compensation	826	751	640
Changes in operating assets and liabilities	(1,313)	(546)	(1,404)
Payments of interest	(2,897)	(2,820)	(2,565)
Payments of income taxes	(2,355)	(4,057)	(3,693)
Proceeds from investments and other	351	227	456
Net cash provided by operating activities	\$ 24,297	\$ 21,261	\$ 19,691

The variance in changes in operating assets and liabilities in 2018 compared to 2017 was primarily related to the timing of film and television costs at Sky, our broadcast of the 2018 PyeongChang Olympics and continued growth in our wireless phone service offering, partially offset by our broadcast of the 2018 Super Bowl. The variance in changes in operating assets and liabilities in 2017 compared to 2016 was primarily due to the timing of film and television production spending and related costs, net of amortization; the recognition of deferred revenue associated with our broadcast of the 2016 Rio Olympics; the payment in 2016 of a tax receivable agreement that DreamWorks Animation entered into with one of its former stockholders; and the launch in 2017 of our wireless phone service offering.

The increases in interest payments in 2018 and 2017 were primarily due to higher levels of debt outstanding, including the issuance of new debt in 2018 associated with the financing of the Sky transaction.

The decrease in income tax payments in 2018 was primarily due to federal income tax overpayments of \$824 million related to the 2017 tax year that were applied to reduce tax payments in the current year, as well as a reduction in the federal income tax rate and additional depreciation deductions allowed under the 2017 Tax Act. This decrease was partially offset by higher taxable income from operations in the current year. The increase in income tax payments in 2017 was primarily due to higher taxable income from operations and payments associated with tax disputes, partially offset by tax deductions resulting from our senior notes exchange and additional depreciation deductions allowed under the 2017 Tax Act.

Investing Activities

Net cash used in investing activities in 2018 consisted primarily of cash paid for acquisitions, cash paid for capital expenditures, cash paid for intangible assets and purchases of investments. Net cash used in investing activities in 2017 consisted primarily of cash paid for capital expenditures, purchases of investments and intangible assets. Net cash used in investing activities in 2016 consisted primarily of cash paid for capital expenditures, acquisitions, deposits, purchase of investments and intangible assets.

Acquisitions, Net of Cash Acquired

In the fourth quarter 2018, we acquired Sky through a series of transactions.

In August 2016, we acquired all of the outstanding stock of DreamWorks Animation.

Capital Expenditures

Our most significant recurring investing activity has been capital expenditures in our Cable Communications segment, and we expect that this will continue in the future. The table below summarizes the capital expenditures we incurred in our Cable Communications segment in 2018, 2017 and 2016.

Year ended December 31 (in millions)	2018	2017	2016
Customer premise equipment	\$ 2,917	\$ 3,337	\$ 3,665
Scalable infrastructure	2,555	2,369	1,827
Line extensions	1,484	1,367	1,208
Support capital	760	879	896
Total	\$ 7,716	\$ 7,952	\$ 7,596

Cable Communications capital expenditures decreased 3.0% in 2018 primarily due to decreases in spending on customer premise equipment and support capital, which were partially offset by increases due to our continued investment in scalable infrastructure and increased investment in line extensions for the expansion of business services. Cable Communications capital expenditures increased 4.7% in 2017 primarily due to continued investment in scalable infrastructure to increase network capacity and increased investment in line extensions for the expansion of business services and residential. The increase in 2017 was partially offset by a decrease in spending on customer premise equipment and support capital.

Capital expenditures in our NBCUniversal segments increased 15.2% to \$1.7 billion in 2018 primarily due to an increase in spending at our Universal Theme Parks. Capital expenditures in our NBCUniversal segments increased 3.4% to \$1.5 billion in 2017 primarily due to continued investment at our Theme Parks segment, which was partially offset by the timing of real estate and infrastructure investment.

Capital expenditures in our Sky segment from October 9, 2018 to December 31, 2018 totaled \$222 million, reflecting continued deployment of Sky Q.

We expect our capital expenditures for 2019 will be focused on continued investment in scalable infrastructure to increase network capacity in our Cable Communications segment; increased investment in line extensions for the expansion of both business services and residential; and the continued deployment of wireless gateways, our X1 platform, cloud DVR technology, Sky Q and international OTT platforms. In addition, we expect to continue to invest in existing and new attractions at our Universal theme parks. Capital expenditures for subsequent years will depend on numerous factors, including acquisitions, competition, changes in technology, regulatory changes, the timing and rate of deployment of new services, the capacity required for existing services, and the timing of new attractions at our theme parks.

Cash Paid for Intangible Assets

In 2018, cash paid for intangible assets consisted primarily of expenditures for software in our Cable Communication segment, and to a lesser extent, our NBCUniversal segment. Cash paid for intangible assets in 2017 and 2016 consisted primarily of expenditures in our Cable Communications segment.

Acquisitions and Construction of Real Estate Properties

Acquisitions and construction of real estate properties in 2018, 2017 and 2016 primarily included the construction of the Comcast Technology Center in Philadelphia, Pennsylvania.

Construction of Universal Beijing Resort

Construction of Universal Beijing Resort in 2018 and 2017 primarily included costs related to the construction of the Universal theme park and resort in Beijing, China.

Proceeds from Sales of Businesses and Investments

Proceeds from sales of businesses and investments in 2016 were primarily related to the sale of our investment in The Weather Channel's product and technology business.

Purchases of Investments

Purchases of investments in 2018 were primarily related to capital contributions to Atairos and NBCUniversal's capital contributions to Hulu. Purchases of investments in 2017 were primarily related to capital contributions to Atairos, our investment in Snap Inc. and NBCUniversal's capital contributions in Hulu. Purchases of investments in 2016 were primarily related to capital contributions to Atairos and NBCUniversal's investment in BuzzFeed, Inc.

Deposits

On April 13, 2017, the Federal Communications Commission ("FCC") announced the results of its spectrum auction. In connection with the auction, we acquired the rights to \$1.7 billion of spectrum. We had previously made a deposit of \$1.8 billion to participate in the auction in 2016 and received a refund for amounts in excess of the purchase price in 2017.

Other

Other investing activities in 2018 were primarily related to proceeds received from the sale of an investment and proceeds from the settlement of derivative contracts. Other investing activities in 2017 were primarily related to proceeds of \$482 million received by NBCUniversal in the FCC auction for the relinquishment of spectrum rights (see Note 8 to Comcast's consolidated financial statements and Note 7 to NBCUniversal's consolidated financial statements).

Financing Activities

Net cash provided by financing activities in 2018 consisted primarily of proceeds from borrowings, including the financing of the Sky acquisition, which were partially offset by repayments of debt, repurchases of common stock under our share repurchase program and employee plans, and dividend payments. Net cash used in financing activities in 2017 and 2016 consisted primarily of repayments of debt, repurchases of common stock under our repurchase program and employee plans, and dividend payments, which were partially offset by proceeds from borrowings. Proceeds from borrowings fluctuate from year to year based on the amounts paid to fund acquisitions, including Sky in 2018, and debt repayments. Net cash used in financing activities in 2017 also included the purchase of the remaining 49% noncontrolling interests in Universal Studios Japan. Net cash used in financing activities in 2016 also included our purchase of the remaining noncontrolling interest in Comcast Spectacor.

We have made, and may from time to time in the future make, optional repayments on our debt obligations, which may include repurchases or exchanges of our outstanding public notes and debentures, depending on various factors, such as market conditions. See Note 7 to Comcast's consolidated financial statements and Note 6 to NBCUniversal's consolidated financial statements for additional information on our financing activities.

Share Repurchases and Dividends

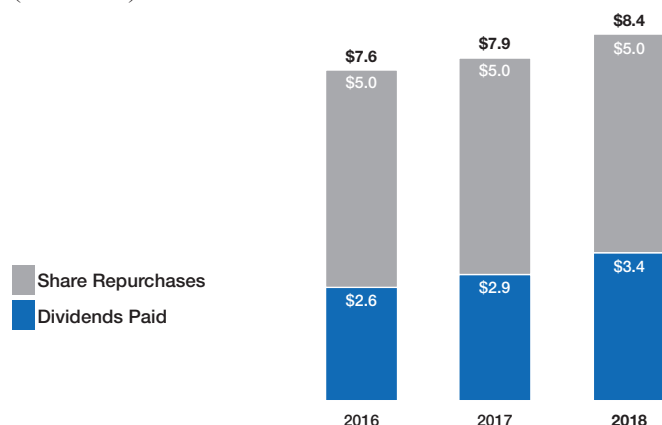
In 2018, we repurchased a total of 140 million shares of our Class A common stock for \$5.0 billion under our share repurchase program authorization. Effective January 1, 2017, our Board of Directors increased our share repurchase program authorization to a total of \$12.0 billion, which does not have an expiration date. As of December 31, 2018, \$2.0 billion remained under this authorization. Under the authorization, we may repurchase shares in the open market or in private transactions. We plan to pause our common stock repurchase program in 2019 to accelerate the reduction of indebtedness we incurred in connection with the acquisition of Sky.

Our Board of Directors declared quarterly dividends totaling \$3.5 billion in 2018. We paid dividends of \$3.4 billion in 2018. In January 2019, our Board of Directors approved a 10% increase in our dividend to \$0.84 per share on an annualized basis. We expect to continue to pay quarterly dividends, although each dividend is subject to approval by our Board of Directors.

The chart below summarizes our share repurchases under our publicly announced share repurchase program authorization and dividends paid in 2018, 2017 and 2016. In addition, we paid \$320 million, \$435 million and \$352 million in 2018, 2017 and 2016, respectively, related to employee taxes associated with the administration of our share-based compensation plans.

Share Repurchases Under Share Repurchase Program Authorization and Dividends Paid

(in billions)



Contractual Obligations

As of December 31, 2018 (in millions)	Payment Due by Period				
	Total	Year 1	Years 2-3	Years 4-5	More than 5
Debt obligations ^(a)	\$ 112,947	\$ 4,361	\$ 19,414	\$ 16,534	\$ 72,638
Capital lease obligations	498	52	95	25	326
Operating lease obligations	5,263	759	1,325	894	2,285
Purchase obligations ^(b)	78,010	26,650	22,423	9,153	19,784
Other long-term liabilities reflected on the balance sheet ^(c)	6,012	366	2,941	756	1,949
Total ^{(d)(e)}	\$ 202,730	\$ 32,188	\$ 46,198	\$ 27,362	\$ 96,982

Refer to Note 7 and Note 17 to Comcast's consolidated financial statements.

(a) Excludes interest payments.

(b) Purchase obligations consist of agreements to purchase goods and services that are legally binding on us and specify all significant terms, including fixed or minimum quantities to be purchased and price provisions. Our purchase obligations related to our Cable Communications and Sky segments, and other business development initiatives include programming contracts with cable networks and local broadcast television stations; contracts with customer premise equipment manufacturers; contracts with communications vendors and multichannel video providers for which we provide advertising sales representation; contracts to

acquire handsets and other equipment; and other contracts entered into in the normal course of business. Cable Communications' and Sky's programming contracts include amounts payable under fixed or minimum guaranteed commitments and do not represent the total fees that are expected to be paid under programming contracts, which we expect to be significantly higher because these contracts are generally based on the number of subscribers receiving the programming. Our purchase obligations related to our NBCUniversal and Sky segments include commitments to acquire film and television programming, including broadcast rights relating to sporting events, such as the Olympics, as well as obligations under various creative talent agreements, including obligations to actors, producers and television personalities, and various other television commitments. Purchase obligations do not include contracts with immaterial future commitments.

- (c) Other long-term liabilities reflected on the balance sheet consist primarily of subsidiary preferred shares; deferred compensation obligations; and postretirement, pension and postemployment benefit obligations. A contractual obligation with a carrying value of \$1.1 billion is not included in the table above because it is uncertain if the arrangement will be settled. The contractual obligation involves an interest held by a third party in the revenue of certain theme parks. The arrangement provides the counterparty with the right to periodic payments associated with current period revenue and, beginning in June 2017, the option to require NBCUniversal to purchase the interest for cash in an amount based on a contractual formula. The contractual formula is based on an average of specified historical theme park revenue at the time of exercise, which amount could be significantly higher than the carrying value. As of December 31, 2018, the value of the contractual obligation was \$1.6 billion, based on inputs to the contractual formula as of that date. See Note 17 to Comcast's consolidated financial statements for additional information related to this arrangement. Liabilities for uncertain tax positions of \$1.0 billion and the associated interest and penalties are not included in the table above because it is uncertain if or when these amounts will become payable. Payments of \$2.9 billion of participations and residuals are also not included in the table above because we cannot make a reliable estimate of the period in which these obligations will be settled.
- (d) Our contractual obligations do not include our commitment to invest up to \$5 billion at any one time as an investor in Atairos due to our inability to estimate the timing of this funding. As of December 31, 2018, our remaining commitment is \$2.7 billion based on the capital calls received as of that date (see Note 10 to Comcast's consolidated financial statements).
- (e) Total contractual obligations are made up of the following components.

(in millions)

Liabilities recorded on the balance sheet	\$	126,353
Commitments not recorded on the balance sheet		76,377
Total	\$	202,730

Off-Balance Sheet Arrangements

As of December 31, 2018, we did not have any material off-balance sheet arrangements that are reasonably likely to have a current or future effect on our financial condition, results of operations, liquidity, capital expenditures or capital resources.

Recent Accounting Pronouncements

See Note 9 to Comcast's consolidated financial statements and Note 8 to NBCUniversal's consolidated financial statements for additional information related to recent accounting pronouncements, including the impact of the adoption of the updated accounting guidance related to revenue recognition.

Critical Accounting Judgments and Estimates

The preparation of our consolidated financial statements requires us to make estimates that affect the reported amounts of assets, liabilities, revenue and expenses, and the related disclosure of contingent assets and contingent liabilities. We base our judgments on our historical experience and on various other assumptions that we believe are reasonable under the circumstances, the results of which form the basis for making estimates about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

We believe our judgments and related estimates associated with the valuation and impairment testing of our cable franchise rights and the accounting for film and television costs are critical in the preparation of our consolidated financial statements. As a result of the Sky transaction, one additional area has been identified as critical in the preparation of our consolidated financial statements. The one additional critical accounting judgment and estimate is the valuation of acquisition-related assets and liabilities. Management has discussed the development and selection of these critical accounting judgments and estimates with the Audit Committee of our Board of Directors, and the Audit Committee has reviewed our disclosures relating to them, which are presented below. See Notes 4, 8 and 12 to Comcast's consolidated financial statements for a discussion of our accounting policies with respect to these items.

Valuation and Impairment Testing of Cable Franchise Rights

Our cable franchise rights assets result from agreements we have with state and local governments that allow us to construct and operate a cable business within a specified geographic area. The value of a franchise is derived from the economic benefits we receive from the right to solicit new customers and to market additional services in a particular service area. The amounts we record for cable franchise rights are primarily a result of cable system acquisitions. Typically when we acquire a cable system, the most significant asset we record is the value of the cable franchise rights. Often these cable system acquisitions include multiple franchise areas. We currently serve approximately 6,400 franchise areas in the United States.

We have concluded that our cable franchise rights have an indefinite useful life since there are no legal, regulatory, contractual, competitive, economic or other factors which limit the period over which these rights will contribute to our cash flows. Accordingly, we do not amortize our cable franchise rights but we assess their carrying values annually, or more frequently whenever events or changes in circumstances indicate that the carrying amount may exceed the fair value (“impairment testing”).

For the purpose of our impairment testing, we have grouped the recorded values of our various cable franchise rights into our three Cable Communications divisions or units of account. We evaluate the unit of account periodically to ensure our impairment testing is performed at an appropriate level.

The annual impairment test for indefinite-lived intangible assets allows for the option to first assess qualitative factors to determine whether it is more likely than not that the fair value of the asset is less than its carrying amount. An entity may choose to perform the qualitative assessment or an entity may bypass the qualitative assessment and proceed directly to the quantitative impairment test. If it is determined, on the basis of qualitative factors, that the fair value of the indefinite-lived intangible asset is, more likely than not, less than its carrying value, the quantitative impairment test is required. When performing a quantitative assessment, we estimate the fair value of our cable franchise rights primarily based on a discounted cash flow analysis that involves significant judgment. When analyzing the fair values indicated under the discounted cash flow models, we also consider multiples of Adjusted EBITDA generated by the underlying assets, current market transactions and profitability information.

In 2018, we performed a quantitative assessment of our cable franchise rights. Based on this assessment, the estimated fair values of our franchise rights exceeded the carrying value of the Northeast, Central and West divisions by 29%, 46% and 58%, respectively.

Since the adoption of the accounting guidance related to goodwill and intangible assets in 2002, we have not recorded any significant impairment charges to cable franchise rights.

We could record impairment charges in the future if there are changes in long-term market conditions, in expected future operating results, or in federal or state regulations that prevent us from recovering the carrying value of these cable franchise rights. Assumptions made about increased competition and economic conditions could also impact the results of any qualitative assessment and the valuations used in future annual quantitative impairment testing and result in a reduction in the fair values of our cable franchise rights. In addition, a future change in the unit of account could result in the recognition of an impairment charge.

Film and Television Costs

We capitalize film and television production costs, including direct costs, production overhead, print costs, development costs and interest. We amortize capitalized film and television production costs, including acquired libraries, and accrue costs associated with participation and residual payments to programming and production expenses. We generally record the amortization and the accrued costs using the individual film forecast computation method, which amortizes the costs using the ratio of the current period’s revenue to estimated total remaining revenue from all sources (“ultimate revenue”). Estimates of ultimate revenue have a significant impact on how quickly capitalized costs are amortized and, therefore, are updated regularly.

Our estimates of ultimate revenue for films generally include revenue from all sources that are expected to be earned within 10 years from the date of a film’s initial release. These estimates are based on the historical performance of similar content, as well as factors unique to the content itself. The most sensitive factor affecting our estimate of ultimate revenue for a film intended for theatrical release is the film’s theatrical performance, as subsequent revenue from the licensing and sale of a film has historically exhibited a high correlation to its theatrical performance. Upon a film’s release, our estimates of revenue from succeeding markets, including from content licensing across multiple platforms and home entertainment sales, are revised based on historical relationships and an analysis of current market trends.

With respect to television series or other owned television programming, the most sensitive factor affecting our estimate of ultimate revenue is whether the series can be successfully licensed beyond its initial license. Initial estimates of ultimate revenue are limited to the amount of revenue contracted for each episode under the initial license. Once it is determined that a television series or other owned television programming can be licensed for subsequent platforms, revenue estimates for these platforms, such as U.S. and international syndication, home entertainment, and other distribution platforms, are included in ultimate revenue. Revenue estimates for produced episodes include revenue expected to be earned within 10 years of delivery of the initial episode or, if still in production,

5 years from the delivery of the most recent episode, if later.

We capitalize the costs of programming content that we license but do not own, including rights to multiyear, live-event sports programming, at the earlier of when payments are made for the programming or when the license period begins and the content is made available for use. We amortize capitalized programming costs as the associated programs are broadcast. We generally amortize multiyear, live-event sports programming rights using the ratio of the current period revenue to the estimated ultimate revenue or under the terms of the contract.

Capitalized film and television costs are subject to impairment testing when certain triggering events are identified. If the fair value of a production were to fall below its unamortized cost, we would record an adjustment for the amount by which the unamortized capitalized costs exceed the production's fair value. The fair value assessment is generally based on estimated future discounted cash flows, which are supported by our internal forecasts. Adjustments to capitalized film production costs were not material in any of the periods presented.

Fair Value of Acquisition-Related Assets and Liabilities

We allocate the purchase price of acquired companies to tangible and intangible assets and liabilities based on their estimated fair values. In determining fair value, management is required to make estimates and assumptions that affect the recorded amounts. Management's estimates of fair value are based on assumptions believed to be reasonable but that are inherently uncertain. As part of the estimation process, third-party valuation specialists are engaged to assist in the valuation of certain of these assets and liabilities.

Our judgments used to determine the estimated fair value assigned to each class of acquired assets and liabilities, as well as asset lives and depreciation and amortization methods, have a material impact on our consolidated financial statements. For instance, the determination of asset lives impacts our results of operations as different types of assets have different useful lives and certain assets may be considered to have indefinite useful lives.

Due to the timing of the Sky acquisition, the allocation of purchase price is based on preliminary estimates and is subject to change. Below is a summary of the methodologies and significant assumptions used in estimating the fair value of certain of Sky's assets and liabilities for which preliminary estimates were determined. Other assets, such as property and equipment, have been recorded based on historical cost as no better estimate was available as of December 31, 2018.

Intangible Assets

Intangible assets primarily consist of our estimates of fair value for finite-lived customer relationships, and indefinite-lived trade names.

Customer relationships were valued using a multiperiod cash flow model, a form of the income approach. This measure of fair value requires considerable judgments about future events, including attrition, contract renewal estimates and technology changes.

In determining the estimated lives and method of amortization for finite-lived intangibles, we use a method and life that closely follows the undiscounted cash flows over the estimated life of the asset.

Trade names were valued using the relief-from-royalty method, a form of the income approach. This measure of fair value requires considerable judgment about the value a market participant would be willing to pay in order to achieve the benefits associated with the trade name.

Contractual Obligations

Contractual obligations were adjusted to market rates using a combination of discounted cash flows and market assumptions, when available.

Item 7A: Quantitative and Qualitative Disclosures About Market Risk

Interest Rate Risk Management

We maintain a mix of fixed-rate and variable-rate debt and we are exposed to the market risk of adverse changes in interest rates. In order to manage the cost and volatility relating to the interest cost of our outstanding debt, we enter into various interest rate risk management derivative transactions in accordance with our policy.

We monitor our exposure to the risk of adverse changes in interest rates through the use of techniques that include market valuation and sensitivity analyses. We do not engage in any speculative or leveraged derivative transactions.

Our interest rate derivative financial instruments, which may include swaps, rate locks, caps and collars, represent an integral part of our interest rate risk management program. Our interest rate derivative financial instruments reduced the portion of our total consolidated debt at fixed rates as of December 31, 2018 to 81.5% from 82.8%.

The effect of our interest rate derivative financial instruments was to decrease our consolidated interest expense by \$6 million, \$23 million and \$36 million, in 2018, 2017 and 2016, respectively. The effect of NBCUniversal's interest rate derivative financial instruments was not material to NBCUniversal's consolidated financial statements for any period presented. Interest rate derivative financial instruments may have a significant effect on our consolidated interest expense in the future.

The table below summarizes as of December 31, 2018 by contractual year of maturity the principal amount of our debt, notional amount of our interest rate instruments, effective rates, and fair values subject to interest rate risk maintained by us.

(in millions)	2019	2020	2021	2022	2023	Thereafter	Total	Estimated Fair Value as of December 31, 2018
Debt								
Fixed rate	\$ 3,005	\$ 5,764	\$ 5,772	\$ 3,694	\$ 3,835	\$ 71,890	\$ 93,960	\$ 94,637
Average interest rate	2.9%	4.3%	3.2%	4.9%	2.6%	4.3%	4.1%	
Variable rate	\$ 1,408	\$ 2,197	\$ 5,776	\$ 5,047	\$ 3,983	\$ 1,074	\$ 19,485	\$ 19,447
Average interest rate	2.1%	1.8%	2.4%	2.0%	2.3%	3.9%	2.3%	
Interest Rate Instruments								
Fixed to variable swaps	\$ 200	\$ 574	\$ —	\$ —	\$ —	\$ —	\$ 774	\$ 5
Average pay rate	6.1%	2.3%	—%	—%	—%	—%	3.2%	
Average receive rate	5.7%	2.9%	—%	—%	—%	—%	3.6%	

The average interest rates on our debt in the table above reflect the effects of our derivative financial instruments. We estimate interest rates on variable rate debt and swaps using the relevant average implied forward rates through the year of maturity based on the yield curve in effect on December 31, 2018, plus the applicable borrowing margin. The notional amount of each interest rate derivative financial instrument is used to calculate the interest to be paid or received. The notional amounts do not represent our exposure to credit loss. The estimated fair value approximates the amount of payments to be made or proceeds to be received to settle the outstanding contracts, including accrued interest.

See Note 1 to each of Comcast's and NBCUniversal's consolidated financial statements for additional information on our accounting policies for derivative financial instruments.

Foreign Exchange Risk Management

We have significant operations in a number of countries outside the United States through Sky and NBCUniversal, and certain of our operations are conducted in foreign currencies. The value of these currencies fluctuates relative to the U.S. dollar. These changes could adversely affect the U.S. dollar equivalent value of our non-U.S. dollar revenue and operating costs and expenses, which could negatively affect our business, financial condition and results of operations in a given period or in specific territories.

As part of our overall strategy to manage the level of exposure to the risk of foreign exchange rate fluctuations, we enter into derivative financial instruments related to a significant portion of our foreign currency exposure for transactions denominated in other than the functional currency. We enter into foreign currency forward contracts that change in value as currency exchange rates fluctuate to protect the functional currency equivalent value of non-functional currency denominated assets, liabilities, commitments, and forecasted non-functional currency revenue and expenses. In accordance with our policy, we hedge forecasted foreign currency transactions for periods generally not to exceed 18 months. In certain circumstances, we enter into foreign exchange contracts with initial maturities in excess of 18 months. As of December 31, 2018 and 2017, we had foreign exchange contracts on transactions other than debt with a total notional value of \$5.8 billion and \$1.3 billion, respectively, including contracts at NBCUniversal of \$1.2 billion and \$1.3 billion, respectively. As of December 31, 2018 and 2017, the aggregate estimated fair value of these foreign exchange contracts was not material.

We use cross-currency swaps for foreign currency denominated debt obligations when those obligations are denominated in a currency other than the functional currency. Cross-currency swaps effectively convert foreign currency denominated debt to debt denominated in the functional currency in order to hedge the risk that the cash flows related to annual interest payments and the payment of principal at maturity may be adversely affected by fluctuations in currency exchange rates. The gains and losses on these cross-currency swaps generally offset changes in the underlying value of the related exposures. As of December 31, 2018 and 2017, we had cross-currency swaps on \$5.3 billion and \$0.8 billion notional amount of our foreign currency denominated

debt, respectively. As of December 31, 2018 and 2017, the aggregate fair value of these cross-currency swaps was a net liability of \$23 million and \$80 million, respectively.

We are also exposed to foreign currency exchange risk on the consolidation of our foreign operations. Beginning in 2018, we use foreign currency denominated debt and cross-currency swaps to hedge our net investments in certain of these subsidiaries. As of December 31, 2018, we had \$15.6 billion notional amount of foreign currency denominated debt and cross-currency swaps designated as net investment hedges of our foreign subsidiaries.

We have analyzed our foreign currency exposure related to our foreign operations as of December 31, 2018, including our hedging contracts, to identify assets and liabilities denominated in a currency other than their functional currency. For those assets and liabilities, we then evaluated the effect of a hypothetical 10% shift in currency exchange rates, inclusive of the effects of derivatives. The results of our analysis indicate that such a shift in exchange rates would not have a material impact on our 2018 net income attributable to Comcast Corporation.

Counterparty Credit Risk Management

We manage the credit risks associated with our derivative financial instruments through diversification and the evaluation and monitoring of the creditworthiness of counterparties. Although we may be exposed to losses in the event of nonperformance by counterparties, we do not expect such losses, if any, to be significant. We have agreements with certain counterparties that include collateral provisions. These provisions require a party with an aggregate unrealized loss position in excess of certain thresholds to post cash collateral for the amount in excess of the threshold. The threshold levels in our collateral agreements are based on our and the counterparty's credit ratings. As of December 31, 2018 and 2017, we were not required to post collateral under the terms of these agreements, nor did we hold any collateral under the terms of these agreements.

Item 8: Comcast Corporation Financial Statements and Supplementary Data

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NBCUniversal Media, LLC

See Index to NBCUniversal Media, LLC Financial Statements and Supplemental Data on page 128.

Report of Management

Management's Report on Comcast's Financial Statements

Our management is responsible for the preparation, integrity and fair presentation of information in Comcast's consolidated financial statements, including estimates and judgments. The consolidated financial statements presented in this report have been prepared in accordance with accounting principles generally accepted in the United States. Our management believes the Comcast consolidated financial statements and other financial information included in this report fairly present, in all material respects, Comcast's financial condition, results of operations and cash flows as of and for the periods presented in this report. The Comcast consolidated financial statements have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is included herein.

Management's Report on Comcast's Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining an adequate system of internal control over financial reporting. Our system of internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States.

Our internal control over financial reporting includes those policies and procedures that:

- Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect our transactions and dispositions of our assets.
- Provide reasonable assurance that our transactions are recorded as necessary to permit preparation of our financial statements in accordance with accounting principles generally accepted in the United States, and that our receipts and expenditures are being made only in accordance with authorizations of our management and our directors.
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Because of its inherent limitations, a system of internal control over financial reporting can provide only reasonable assurance and may not prevent or detect misstatements. Further, because of changes in conditions, effectiveness of internal control over financial reporting may vary over time. Our system contains self-monitoring mechanisms, and actions are taken to correct deficiencies as they are identified.

Our management conducted an evaluation of the effectiveness of the system of internal control over financial reporting based on the framework in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, our management concluded that Comcast's system of internal control over financial reporting was effective as of December 31, 2018. The scope of management's assessment of the effectiveness of internal control over financial reporting includes all of the Company's consolidated operations except for the operations of Sky Limited, which the Company acquired through a purchase business combination during the year ended December 31, 2018. Sky Limited represents approximately 5% of the Company's consolidated revenues for the year ended December 31, 2018 and approximately 24% of the Company's consolidated total assets as of December 31, 2018. The effectiveness of Comcast's internal controls over financial reporting of Comcast has been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is included herein.

Audit Committee Oversight

The Audit Committee of the Board of Directors, which is comprised solely of independent directors, has oversight responsibility for our financial reporting process and the audits of Comcast's consolidated financial statements and internal control over financial reporting. The Audit Committee meets regularly with management and with our internal auditors and independent registered public accounting firm (collectively, the "auditors") to review matters related to the quality and integrity of our financial reporting, internal control over financial reporting (including compliance matters related to our Code of Conduct), and the nature, extent, and results of internal and external audits. Our auditors have full and free access and report directly to the Audit Committee. The Audit Committee recommended, and the Board of Directors approved, that the Comcast audited consolidated financial statements be included in this Form 10-K.

/s/ BRIAN L. ROBERTS

Brian L. Roberts

Chairman and
Chief Executive Officer

/s/ MICHAEL J. CAVANAGH

Michael J. Cavanagh

Senior Executive Vice President and
Chief Financial Officer

/s/ DANIEL C. MURDOCK

Daniel C. Murdock

Senior Vice President, Chief
Accounting Officer and Controller

Report of Independent Registered Public Accounting Firm

**To the Board of Directors and Stockholders of
Comcast Corporation
Philadelphia, Pennsylvania**

Opinions on the Consolidated Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Comcast Corporation and subsidiaries (the “Company”) as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, cash flows and changes in equity for each of the three years in the period ended December 31, 2018, and the related notes (collectively referred to as the “financial statements”). We also have audited the Company’s internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by COSO.

As described in *Management’s Report on Comcast’s Internal Control Over Financial Reporting*, management excluded from its assessment the internal control over financial reporting at Sky Limited, which the Company acquired through a purchase business combination during the year ended December 31, 2018. Sky Limited represents approximately 5% of the Company’s consolidated revenues for the year ended December 31, 2018, and approximately 24% of the Company’s consolidated total assets as of December 31, 2018. Accordingly, our audit did not include the internal control over financial reporting at Sky Limited.

Basis for Opinions

The Company’s management is responsible for these financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying *Management’s Report on Comcast’s Internal Control Over Financial Reporting*. Our responsibility is to express an opinion on these financial statements and an opinion on the Company’s internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the financial statements included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures to respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Deloitte & Touche LLP
Philadelphia, Pennsylvania
January 31, 2019

We have served as the Company’s auditor since 1963.

Comcast Corporation
Consolidated Statement of Income

Year ended December 31 (in millions, except per share data)	2018		2017		2016
Revenue	\$	94,507	\$	85,029	\$ 80,736
Costs and Expenses:					
Programming and production		29,692		25,355	24,348
Other operating and administrative		28,094		25,449	23,840
Advertising, marketing and promotion		7,036		6,519	6,291
Depreciation		8,281		7,914	7,464
Amortization		2,736		2,216	1,962
Other operating gains		(341)		(442)	—
Total costs and expenses		75,498		67,011	63,905
Operating income		19,009		18,018	16,831
Interest expense		(3,542)		(3,086)	(2,942)
Investment and other income (loss), net		(225)		421	437
Income before income taxes		15,242		15,353	14,326
Income tax (expense) benefit		(3,380)		7,569	(5,298)
Net income		11,862		22,922	9,028
Less: Net income attributable to noncontrolling interests and redeemable subsidiary preferred stock		131		187	350
Net income attributable to Comcast Corporation	\$	11,731	\$	22,735	\$ 8,678
Basic earnings per common share attributable to Comcast Corporation shareholders	\$	2.56	\$	4.83	\$ 1.80
Diluted earnings per common share attributable to Comcast Corporation shareholders	\$	2.53	\$	4.75	\$ 1.78
Dividends declared per common share	\$	0.76	\$	0.63	\$ 0.55

See accompanying notes to consolidated financial statements.

Comcast Corporation
Consolidated Statement of Comprehensive Income

Year ended December 31 (in millions)	2018		2017		2016
Net income	\$	11,862	\$	22,922	\$ 9,028
Unrealized gains (losses) on marketable securities, net of deferred taxes of \$(1), \$25 and \$(1)		1		(42)	—
Deferred gains (losses) on cash flow hedges, net of deferred taxes of \$(3), \$(35) and \$35		50		60	(60)
Amounts reclassified to net income:					
Realized (gains) losses on marketable securities, net of deferred taxes of \$—, \$1 and \$1		—		(1)	(1)
Realized (gains) losses on cash flow hedges, net of deferred taxes of \$(4), \$22 and \$(54)		(6)		(37)	92
Employee benefit obligations, net of deferred taxes of \$(2), \$(24) and \$(125)		7		41	213
Currency translation adjustments, net of deferred taxes of \$9, \$(40) and \$(14)		(916)		147	102
Comprehensive income		10,998		23,090	9,374
Less: Net income attributable to noncontrolling interests and redeemable subsidiary preferred stock		131		187	350
Less: Other comprehensive income (loss) attributable to noncontrolling interests		(41)		81	74
Comprehensive income attributable to Comcast Corporation	\$	10,908	\$	22,822	\$ 8,950

See accompanying notes to consolidated financial statements.

Comcast Corporation
Consolidated Statement of Cash Flows

Year ended December 31 (in millions)	2018	2017	2016
Operating Activities			
Net income	\$ 11,862	\$ 22,922	\$ 9,028
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation, amortization and other operating gains	10,676	9,688	9,426
Share-based compensation	826	751	640
Noncash interest expense (income), net	364	272	230
Net (gain) loss on investment activity and other	576	(194)	19
Deferred income taxes	290	(10,646)	1,434
Changes in operating assets and liabilities, net of effects of acquisitions and divestitures:			
Current and noncurrent receivables, net	(802)	(869)	(649)
Film and television costs, net	(395)	(197)	(501)
Accounts payable and accrued expenses related to trade creditors	(394)	173	378
Other operating assets and liabilities	1,294	(639)	(314)
Net cash provided by operating activities	24,297	21,261	19,691
Investing Activities			
Capital expenditures	(9,774)	(9,550)	(9,135)
Cash paid for intangible assets	(1,935)	(1,605)	(1,552)
Acquisitions and construction of real estate properties	(143)	(418)	(428)
Construction of Universal Beijing Resort	(460)	(71)	(22)
Acquisitions, net of cash acquired	(38,219)	(532)	(3,929)
Proceeds from sales of businesses and investments	141	150	218
Purchases of investments	(1,257)	(2,292)	(1,697)
Deposits	—	—	(1,749)
Other	793	785	29
Net cash provided by (used in) investing activities	(50,854)	(13,533)	(18,265)
Financing Activities			
Proceeds from (repayments of) short-term borrowings, net	379	(1,905)	1,790
Proceeds from borrowings	44,781	11,466	9,231
Repurchases and repayments of debt	(8,798)	(6,364)	(3,052)
Repurchases of common stock under repurchase program and employee plans	(5,320)	(5,435)	(5,352)
Dividends paid	(3,352)	(2,883)	(2,601)
Purchase of Universal Studios Japan noncontrolling interests	—	(2,299)	—
Issuances of common stock	—	—	23
Distributions to noncontrolling interests and dividends for redeemable subsidiary preferred stock	(277)	(252)	(253)
Other	(273)	100	(220)
Net cash provided by (used in) financing activities	27,140	(7,572)	(434)
Impact of foreign currency on cash, cash equivalents and restricted cash	(245)	—	—
Increase (decrease) in cash, cash equivalents and restricted cash	338	156	992
Cash, cash equivalents and restricted cash, beginning of year	3,571	3,415	2,423
Cash, cash equivalents and restricted cash, end of year	\$ 3,909	\$ 3,571	\$ 3,415

See accompanying notes to consolidated financial statements.

Comcast Corporation
Consolidated Balance Sheet

December 31 (in millions, except share data)	2018	2017
Assets		
Current Assets:		
Cash and cash equivalents	\$ 3,814	\$ 3,428
Receivables, net	11,104	8,834
Programming rights	3,746	1,613
Other current assets	3,184	2,468
Total current assets	21,848	16,343
Film and television costs	7,837	7,087
Investments	7,883	6,931
Property and equipment, net	44,437	38,470
Franchise rights	59,365	59,364
Goodwill	66,154	36,780
Other intangible assets, net	38,358	18,133
Other noncurrent assets, net	5,802	4,354
Total assets	\$ 251,684	\$ 187,462
Liabilities and Equity		
Current Liabilities:		
Accounts payable and accrued expenses related to trade creditors	\$ 8,494	\$ 6,908
Accrued participations and residuals	1,808	1,644
Deferred revenue	2,182	1,687
Accrued expenses and other current liabilities	10,721	6,620
Current portion of long-term debt	4,398	5,134
Total current liabilities	27,603	21,993
Long-term debt, less current portion	107,345	59,422
Deferred income taxes	27,589	24,259
Other noncurrent liabilities	15,329	10,972
Commitments and contingencies (Note 17)		
Redeemable noncontrolling interests and redeemable subsidiary preferred stock	1,316	1,357
Equity:		
Preferred stock — authorized, 20,000,000 shares; issued, zero	—	—
Class A common stock, \$0.01 par value — authorized, 7,500,000,000 shares; issued, 5,389,309,175 and 5,507,854,670; outstanding, 4,516,518,147 and 4,635,063,642	54	55
Class B common stock, \$0.01 par value — authorized, 75,000,000 shares; issued and outstanding, 9,444,375	—	—
Additional paid-in capital	37,461	37,497
Retained earnings	41,983	38,202
Treasury stock, 872,791,028 Class A common shares	(7,517)	(7,517)
Accumulated other comprehensive income (loss)	(368)	379
Total Comcast Corporation shareholders' equity	71,613	68,616
Noncontrolling interests	889	843
Total equity	72,502	69,459
Total liabilities and equity	\$ 251,684	\$ 187,462

See accompanying notes to consolidated financial statements.

Comcast Corporation
Consolidated Statement of Changes in Equity

(in millions)	Redeemable Noncontrolling Interests and Redeemable Subsidiary Preferred Stock	Common Stock		Additional Paid-In Capital	Retained Earnings	Treasury Stock at Cost	Accumulated Other Comprehensive Income (Loss)	Non- controlling Interests	Total Equity
		A	B						
Balance, December 31, 2015	\$ 1,221	\$ 57	\$ —	\$ 38,490	\$ 21,413	\$ (7,517)	\$ (174)	\$ 1,709	\$ 53,978
Stock compensation plans				770					770
Repurchases of common stock under repurchase program and employee plans		(1)		(999)	(4,376)				(5,376)
Employee stock purchase plans				156					156
Dividends declared					(2,656)				(2,656)
Other comprehensive income (loss)							272	74	346
Contributions from (distributions to) noncontrolling interests, net	(16)							(134)	(134)
Other	148			(187)	6			325	144
Net income	93				8,678			257	8,935
Balance, December 31, 2016	1,446	56	—	38,230	23,065	(7,517)	98	2,231	56,163
Stock compensation plans				554					554
Repurchases of common stock under repurchase program and employee plans		(1)		(832)	(4,623)				(5,456)
Employee stock purchase plans				190					190
Dividends declared					(2,975)				(2,975)
Other comprehensive income (loss)							87	81	168
Contributions from (distributions to) noncontrolling interests, net	(39)							(108)	(108)
Purchase of Universal Studios Japan noncontrolling interests				(696)			194	(1,736)	(2,238)
Other	(123)			51				261	312
Net income	73				22,735			114	22,849
Balance, December 31, 2017	1,357	55	—	37,497	38,202	(7,517)	379	843	69,459
Cumulative effects of adoption of accounting standards					(43)		76		33
Stock compensation plans				607					607
Repurchases of common stock under repurchase program and employee plans		(1)		(920)	(4,408)				(5,329)
Employee stock purchase plans				214					214
Dividends declared					(3,499)				(3,499)
Other comprehensive income (loss)							(823)	(41)	(864)
Contributions from (distributions to) noncontrolling interests, net	(56)							294	294
Other	(43)			63				(280)	(217)
Net income	58				11,731			73	11,804
Balance, December 31, 2018	\$ 1,316	\$ 54	\$ —	\$ 37,461	\$ 41,983	\$ (7,517)	\$ (368)	\$ 889	\$ 72,502

See accompanying notes to consolidated financial statements.

Note 1: Basis of Presentation and Summary of Significant Accounting Policies

We are a global media and technology company with three primary businesses, Comcast Cable, NBCUniversal and Sky. We were incorporated under the laws of Pennsylvania in December 2001. Through our predecessors, we have developed, managed and operated cable systems since 1963.

In the fourth quarter of 2018, we acquired a 100% interest in Sky through a series of transactions, for total cash consideration of £30.2 billion (approximately \$39.4 billion using the exchange rates on the purchase dates).

We present our operations for (1) Comcast Cable in one reportable business segment, referred to as Cable Communications; (2) NBCUniversal in four reportable business segments: Cable Networks, Broadcast Television, Filmed Entertainment and Theme Parks (collectively, the “NBCUniversal segments”); and (3) Sky in one reportable business segment. See Note 2 for additional information on our reportable business segments.

Basis of Presentation

The accompanying consolidated financial statements include all entities in which we have a controlling voting interest and variable interest entities (“VIEs”) required to be consolidated in accordance with generally accepted accounting principles in the United States (“GAAP”).

We translate assets and liabilities of our foreign operations where the functional currency is the local currency, primarily the British pound, euro, Japanese yen and Chinese renminbi, into U.S. dollars at the exchange rate as of the balance sheet date and translate revenue and expenses using average monthly exchange rates. The related translation adjustments are recorded as a component of accumulated other comprehensive income (loss) in our consolidated balance sheet. Any foreign currency transaction gains or losses are included in our consolidated statement of income.

Reclassifications

Reclassifications have been made to our consolidated financial statements for the prior periods to conform to classifications used in 2018. See Note 9 for a discussion of the effects of the adoption of new accounting pronouncements on our consolidated financial statements.

Accounting Policies

Our consolidated financial statements are prepared in accordance with GAAP, which require us to select accounting policies, including in certain cases industry-specific policies, and make estimates that affect the reported amount of assets, liabilities, revenue and expenses, and the related disclosure of contingent assets and contingent liabilities. Actual results could differ from these estimates. We believe that the judgments and related estimates for the following items are critical in the preparation of our consolidated financial statements:

- valuation and impairment testing of cable franchise rights (see Note 12)
- film and television costs (see Note 4)
- fair value of acquisition-related assets and liabilities (see Note 8)

In addition, the following accounting policies are specific to the industries in which we operate:

- capitalization and amortization of film and television costs (see Note 4)
- costs for connecting customers to our cable systems (see Note 11)

Information on other accounting policies and methods that we use in the preparation of our consolidated financial statements are included, where applicable, in their respective footnotes that follow. Below is a discussion of accounting policies and methods used in our consolidated financial statements that are not presented within other footnotes.

Comcast Corporation

Advertising Expenses

Advertising costs are expensed as incurred.

Cash Equivalents

The carrying amounts of our cash equivalents approximate their fair values. Our cash equivalents consist primarily of money market funds and U.S. government obligations, as well as commercial paper and certificates of deposit with maturities of three months or less when purchased.

Derivative Financial Instruments

We use derivative financial instruments to manage our exposure to the risks associated with fluctuations in interest rates, foreign exchange rates and equity prices. Our objective is to manage the financial and operational exposure arising from these risks by offsetting gains and losses on the underlying exposures with gains and losses on the derivatives used to economically hedge them.

Our derivative financial instruments are recorded in our consolidated balance sheet at fair value. Refer to Note 7 for further information on foreign exchange derivatives related to debt. The impact of our remaining derivative financial instruments on our consolidated financial statements was not material in any of the periods presented.

Fair Value Measurements

The accounting guidance related to fair value measurements establishes a hierarchy based on the types of inputs used for the various valuation techniques (market approach, income approach and cost approach). The levels of the hierarchy are described below.

- Level 1: Values are determined using quoted market prices for identical financial instruments in an active market
- Level 2: Values are determined using quoted prices for similar financial instruments and valuation models whose inputs are observable
- Level 3: Values are determined using pricing models that use significant inputs that are primarily unobservable, discounted cash flow methodologies or similar techniques, as well as instruments for which the determination of fair value requires significant management judgment or estimation

We use these levels of hierarchy to measure the fair value of certain financial instruments on a recurring basis, such as for investments; on a non-recurring basis, such as for acquisitions and impairment testing; for disclosure purposes, such as for long-term debt; and for other applications, as discussed in their respective footnotes. Our assessment of the significance of a particular input to the fair value measurement requires judgment and may affect the valuation and classification within the fair value hierarchy.

Asset Retirement Obligations

Certain of our cable franchise agreements and lease agreements contain provisions requiring us to restore facilities or remove property in the event that the franchise or lease agreement is not renewed. We expect to continually renew our cable franchise agreements and therefore cannot reasonably estimate liabilities associated with such agreements. A remote possibility exists that franchise agreements could be terminated unexpectedly, which could result in us incurring significant expense in complying with restoration or removal provisions. We do not have any material liabilities related to asset retirements recorded in our consolidated financial statements.

Note 2: Segment Information

Our Cable Communications segment primarily manages and operates cable systems that serve residential and business customers in the United States and sells advertising. As of December 31, 2018, our cable systems had 30.3 million total customer relationships, including 28.0 million residential and 2.3 million business customer relationships, of which 27.2 million received our high-speed internet service, 22.0 million received our video service, 11.4 million received our voice service and 1.3 million received our security and automation service.

Our Cable Networks segment consists primarily of a diversified portfolio of cable television networks. Our Cable Networks segment is comprised of our national cable networks that provide a variety of entertainment, news and information, and sports content; our regional sports and news networks; our international cable networks; our cable television studio production operations; and our various digital properties.

Our Broadcast Television segment consists primarily of the NBC and Telemundo broadcast networks, our NBC and Telemundo owned local broadcast television stations, the NBC Universo national cable network, our broadcast television studio production operations, and our various digital properties.

Comcast Corporation

Our Filmed Entertainment segment primarily produces, acquires, markets and distributes filmed entertainment worldwide. Our films are produced primarily under the Universal Pictures, Illumination, DreamWorks Animation and Focus Features names.

Our Theme Parks segment consists primarily of our Universal theme parks in Orlando, Florida; Hollywood, California; and Osaka, Japan. In addition, along with a consortium of Chinese state-owned companies, we are developing a Universal theme park and resort in Beijing, China.

Our Sky segment consists of the operations of Sky, which is a leading entertainment company in Europe. It is primarily a direct-to-consumer business, providing satellite and OTT video, high-speed internet, voice, and wireless phone services, and as of December 31, 2018 Sky had 23.6 million retail customer relationships. Sky is also a content business, operating entertainment networks, the Sky News broadcast network and Sky Sports networks.

Our other business interests, which are included in Corporate and Other, consist primarily of our wireless phone service and Comcast Spectacor, which owns the Philadelphia Flyers and the Wells Fargo Center arena in Philadelphia, Pennsylvania.

We use Adjusted EBITDA to evaluate the profitability of our operating segments, and the components of net income attributable to Comcast Corporation excluded from Adjusted EBITDA are not separately evaluated. To be consistent with our current management reporting presentation, certain 2018, 2017 and 2016 operating results were reclassified related to certain NBCUniversal businesses now presented in the Sky segment. We do not present a measure of total assets for our reportable business segments as this information is not used by management to allocate resources and capital. Our financial data by business segment is presented in the tables below.

(in millions)	Revenue	Adjusted EBITDA ^(e)	Depreciation and Amortization	Capital Expenditures	Cash Paid for Intangible Assets
2018					
Cable Communications	\$ 55,143	\$ 22,447	\$ 8,264	\$ 7,716	\$ 1,282
NBCUniversal					
Cable Networks ^(a)	11,773	4,428	738	42	23
Broadcast Television ^(a)	11,439	1,657	146	204	81
Filmed Entertainment	7,152	734	145	35	25
Theme Parks	5,683	2,455	660	1,143	173
Headquarters and Other ^(b)	63	(680)	419	306	146
Eliminations ^{(a)(c)}	(349)	4	—	—	—
NBCUniversal	35,761	8,598	2,108	1,730	448
Sky	4,587	692	539	222	137
Corporate and Other ^(d)	1,403	(1,545)	106	106	68
Eliminations ^{(a)(c)}	(2,387)	(27)	—	—	—
Comcast Consolidated	\$ 94,507	\$ 30,165	\$ 11,017	\$ 9,774	\$ 1,935

(in millions)	Revenue	Adjusted EBITDA ^(e)	Depreciation and Amortization	Capital Expenditures	Cash Paid for Intangible Assets
2017					
Cable Communications	\$ 53,070	\$ 21,068	\$ 8,006	\$ 7,952	\$ 1,241
NBCUniversal					
Cable Networks	10,497	4,053	755	33	19
Broadcast Television	9,563	1,251	133	180	22
Filmed Entertainment	7,595	1,276	109	58	23
Theme Parks	5,443	2,384	648	960	78
Headquarters and Other ^(b)	45	(741)	396	271	153
Eliminations ^(c)	(307)	(5)	—	—	—
NBCUniversal	32,836	8,218	2,041	1,502	295
Corporate and Other ^(d)	1,193	(1,372)	83	96	69
Eliminations ^(c)	(2,070)	42	—	—	—
Comcast Consolidated	\$ 85,029	\$ 27,956	\$ 10,130	\$ 9,550	\$ 1,605

Comcast Corporation

(in millions)	Revenue	Adjusted EBITDA ^(e)	Depreciation and Amortization	Capital Expenditures	Cash Paid for Intangible Assets
2016					
Cable Communications	\$ 50,577	\$ 20,014	\$ 7,538	\$ 7,596	\$ 1,243
NBCUniversal					
Cable Networks ^(a)	10,324	3,681	745	32	20
Broadcast Television ^(a)	10,085	1,293	125	153	19
Filmed Entertainment	6,229	662	47	33	16
Theme Parks	4,946	2,190	512	922	72
Headquarters and Other ^(b)	20	(699)	376	312	156
Eliminations ^{(a)(c)}	(328)	11	—	—	—
NBCUniversal	31,276	7,138	1,805	1,452	283
Corporate and Other ^(d)	886	(849)	83	87	26
Eliminations ^{(a)(c)}	(2,003)	(46)	—	—	—
Comcast Consolidated	\$ 80,736	\$ 26,257	\$ 9,426	\$ 9,135	\$ 1,552

- (a) The revenue and operating costs and expenses associated with our broadcast of the 2018 PyeongChang Olympics and the 2016 Rio Olympics were reported in our Cable Networks and Broadcast Television segments. The revenue and operating costs and expenses associated with our broadcast of the 2018 Super Bowl were reported in our Broadcast Television segment. Included in Eliminations are transactions relating to these events that our Broadcast Television and Cable Networks segments enter into with our other segments.
- (b) NBCUniversal Headquarters and Other activities include costs associated with overhead, allocations, personnel and headquarter initiatives.
- (c) Included in Eliminations are transactions that our segments enter into with one another. The most common types of transactions are the following:
- our Cable Networks segment generates revenue by selling programming to our Cable Communications segment, which represents a substantial majority of the revenue elimination amount
 - our Broadcast Television segment generates revenue from the fees received under retransmission consent agreements with our Cable Communications segment
 - our Cable Communications segment generates revenue by selling advertising and by selling the use of satellite feeds to our Cable Networks segment
 - our Cable Networks and Broadcast Television segments generate revenue by selling advertising to our Cable Communications segment
 - our Filmed Entertainment and Broadcast Television segments generate revenue by licensing content to our Cable Networks segment; for segment reporting, this revenue is recognized as the programming rights asset for the licensed content is amortized based on third-party revenue
 - our Filmed Entertainment, Cable Networks and Broadcast Television segments generate revenue by licensing content to our Sky segment
- (d) Corporate and Other activities include costs associated with overhead and personnel, revenue and expenses associated with other business development initiatives, including our wireless phone service, and the operations of Comcast Spectacor, which owns the Philadelphia Flyers and the Wells Fargo Center arena in Philadelphia, Pennsylvania.
- (e) We use Adjusted EBITDA as the measure of profit or loss for our operating segments. Adjusted EBITDA is defined as net income attributable to Comcast Corporation before net (income) loss attributable to noncontrolling interests and redeemable subsidiary preferred stock, income tax benefit (expense), investment and other income (loss), net, interest expense, depreciation and amortization expense, and other operating gains and losses (such as impairment charges related to fixed and intangible assets and gains or losses on the sale of long-lived assets), if any. From time to time we may exclude from Adjusted EBITDA the impact of certain events, gains, losses or other charges (such as significant legal settlements) that affect the period-to-period comparability of our operating performance. Our reconciliation of the aggregate amount of Adjusted EBITDA for our reportable segments to consolidated income before income taxes is presented in the table below.

Year ended December 31 (in millions)	2018	2017	2016
Adjusted EBITDA	\$ 30,165	\$ 27,956	\$ 26,257
Adjustment for legal settlement	(125)	(250)	—
Adjustment for Sky transaction-related costs	(355)	—	—
Depreciation	(8,281)	(7,914)	(7,464)
Amortization	(2,736)	(2,216)	(1,962)
Other operating gains	341	442	—
Interest expense	(3,542)	(3,086)	(2,942)
Investment and other income (loss), net	(225)	421	437
Income before income taxes	\$ 15,242	\$ 15,353	\$ 14,326

Note 3: Revenue

Year ended December 31 (in millions)	2018	2017	2016
Residential:			
High-speed internet	\$ 17,144	\$ 15,681	\$ 14,421
Video	22,455	22,874	22,204
Voice	3,960	4,090	4,159
Business services	7,129	6,437	5,705
Advertising	2,795	2,450	2,626
Other	1,660	1,538	1,462
Total Cable Communications ^(a)	55,143	53,070	50,577
Distribution	6,826	6,081	5,978
Advertising	3,587	3,359	3,530
Content licensing and other	1,360	1,057	816
Total Cable Networks	11,773	10,497	10,324
Advertising	7,010	5,654	6,834
Content licensing	2,182	2,114	1,837
Distribution and other	2,247	1,795	1,414
Total Broadcast Television	11,439	9,563	10,085
Theatrical	2,111	2,192	1,560
Content licensing	2,899	2,956	2,518
Home entertainment	1,048	1,287	1,182
Other	1,094	1,160	969
Total Filmed Entertainment	7,152	7,595	6,229
Total Theme Parks	5,683	5,443	4,946
Headquarters and Other	63	45	20
Eliminations ^(b)	(349)	(307)	(328)
Total NBCUniversal	35,761	32,836	31,276
Direct-to-consumer	3,632	—	—
Content	304	—	—
Advertising	651	—	—
Total Sky	4,587	—	—
Corporate and Other	1,403	1,193	886
Eliminations ^(b)	(2,387)	(2,070)	(2,003)
Total revenue	\$ 94,507	\$ 85,029	\$ 80,736

(a) For 2018, 2017 and 2016, 2.7%, 2.8% and 2.9%, respectively, of Cable Communications segment revenue was derived from franchise and other regulatory fees.

(b) Included in Eliminations are transactions that our segments enter into with one another. See Note 2 for a description of these transactions.

We operate primarily in the United States, but also in select international markets primarily in Europe and Asia. The table below summarizes revenue by geographic location.

Year ended December 31 (in millions)	2018	2017	2016
United States	\$ 82,233	\$ 77,246	\$ 74,212
Foreign	12,274	7,783	6,524
Total revenue	\$ 94,507	\$ 85,029	\$ 80,736

No single customer accounted for a significant amount of revenue in any period presented.

Cable Communications Segment

Residential

Our Cable Communications segment generates revenue from residential customers that subscribe to our high-speed internet, video, voice, and security and automation services, which we market individually and as bundled services at a discounted rate in the United States. Revenue from residential customers that purchase bundled services at a discounted rate is allocated between the

separate services based on the respective stand-alone selling prices. The stand-alone selling prices are determined based on the current prices at which we separately sell the cable services. Significant judgment is used to determine performance obligations that should be accounted for separately and the allocation of revenue when services are combined in a bundle. Revenue related to our security and automation services is reported in other revenue.

We recognize revenue from residential cable services as the services are provided on a monthly basis. Subscription rates and related charges vary according to the services and features customers receive. Customers are typically billed in advance and pay on a monthly basis. Installation fees are deferred and recognized as revenue over the period of benefit to the customer, which is less than a year for residential customers. While a portion of our residential customers are subject to contracts for their cable services, which are typically 2 years in length, based on our evaluation of the terms of these contracts, we recognize revenue for these cable services on a basis that is consistent with our customers that are not subject to contracts. Our cable services generally involve customer premise equipment, such as set-top boxes, cable modems and wireless gateways. The timing and pattern of recognition for customer premise equipment revenue are consistent with those of our residential cable services. Sales commissions related to our residential customers are expensed as incurred, as the related period of benefit is less than a year.

Under the terms of our cable franchise agreements, we are generally required to pay the cable franchising authority an amount based on our gross video revenue. We generally pass these and other similar fees through to our cable services customers and classify these fees in the respective cable service revenue, with the corresponding costs included in other operating and administrative expenses.

Business Services

Our Cable Communications segment generates revenue from business customers that subscribe to a variety of products and services. Our small business services offerings primarily include high-speed internet services, as well as voice and video services, similar to those that we provide to our residential customers, and also include cloud-based solutions that provide file sharing, online backup and web conferencing, among other features. We also offer Ethernet network services that connect multiple locations and provide higher downstream and upstream speed options to medium-sized customers and larger enterprises, as well as advanced voice services. In addition, we provide cellular backhaul services to mobile network operators to help these customers manage their network bandwidth.

Recently, we have expanded our enterprise service offerings to include a software-defined networking product and our managed solutions business to offer enterprise customers support related to Wi-Fi networks, router management, network security, business continuity risks and other services. We primarily offer our enterprise service offerings to Fortune 1000 companies and other large enterprises with multiple locations both within and outside of our cable distribution footprint where we have agreements with other companies to use their networks to provide coverage.

We recognize revenue from business services as the services are provided on a monthly basis. Substantially all of our business customers are initially under contracts, with terms typically ranging from 2 years for small and medium-sized businesses to up to 5 years for larger enterprises. At any given time, the amount of future revenue to be earned related to fixed pricing under existing agreements is equal to approximately half of our annual business services revenue, of which the substantial majority will be recognized within 2 years. Customers with contracts may only discontinue service in accordance with the terms of their contracts. We receive payments from business customers based on a billing schedule established in our contracts, which is typically on a monthly basis. Installation revenue related to our business services customers and sales commissions are generally deferred and recognized over the respective contract terms.

Advertising

Our Cable Communications segment generates revenue from the sale of advertising and technology, tools and solutions relating to advertising businesses. As part of our distribution agreements with cable networks, we generally receive an allocation of scheduled advertising time that we sell to local, regional and national advertisers. In most cases, the available advertising units are sold by our sales force. We also represent the advertising sales efforts of other multichannel video providers in some markets. Since we are acting as the principal in these arrangements, we record the advertising that is sold in advertising revenue and the fees paid to multichannel video providers in other operating and administrative expenses. In some cases, we work with representation firms as an extension of our sales force to sell a portion of the advertising units allocated to us and record the revenue net of agency commissions. In addition, we generate revenue from the sale of advertising on digital platforms. We enter into advertising arrangements with customers and have determined that a contract exists once all terms and conditions are agreed upon, typically when the number of advertising units is specifically identified and the timing of airing is scheduled. Advertisements are generally aired or viewed within one year once all terms and conditions are agreed upon. Advertising revenue from these arrangements is recognized in the period in which advertisements are aired or viewed. Payment terms vary by contract, although terms generally require payment within 30 to 60 days from when advertisements are aired or viewed. In addition, our advertising business also provides technology, tools, data-driven services and marketplace solutions to customers in the media industry, which allows advertisers to more effectively engage with their target audiences. Revenue earned in this manner is recognized when services are provided.

NBCUniversal Segments

Distribution

Our Cable Networks segment generates distribution revenue from the distribution of our cable network programming to traditional and virtual multichannel video providers. Our Broadcast Television segment generates distribution revenue from the fees received under retransmission consent agreements and associated fees received from NBC-affiliated local broadcast television stations.

Distribution revenue is accounted for as a license of functional intellectual property and is recognized as programming is provided on a monthly basis, generally under multiyear agreements. Monthly fees received under distribution agreements with multichannel video providers are generally based on the number of subscribers. Payment terms and conditions vary by contract type, although terms generally include payment within 30 to 60 days.

Advertising

Our Cable Networks and Broadcast Television segments generate advertising revenue from the sale of advertising on our cable and broadcast networks, our owned local broadcast television stations and various digital properties.

We enter into advertising arrangements with customers and have determined that a contract exists once all terms and conditions are agreed upon, typically when the number of advertising units is specifically identified and the timing of airing is scheduled. Advertisements are generally aired or viewed within one year once all terms are agreed upon. Advertising revenue is recognized, net of agency commissions, in the period in which advertisements are aired or viewed and payment occurs thereafter, with payment generally required within 30 days. In some instances, we guarantee audience ratings for the advertisements. To the extent there is a shortfall in contracts where the ratings were guaranteed, a portion of the revenue is deferred until the shortfall is settled, typically by providing additional advertising units generally within one year of the original airing.

Theatrical

Our Filmed Entertainment segment generates theatrical revenue from the worldwide theatrical release of our produced and acquired films for exhibition in movie theaters. Theatrical revenue is affected by the timing, nature and number of films released in movie theaters and their acceptance by audiences. It is also affected by the number of exhibition screens, ticket prices, the percentage of ticket sale retention by the exhibitors and the popularity of competing films at the time our films are released. We recognize theatrical revenue as the films are viewed and exhibited in theaters and payment generally occurs within 30 days after exhibition.

Content Licensing

Our Cable Networks, Broadcast Television and Filmed Entertainment segments generate revenue from the licensing of our owned film and television content in the United States and internationally to cable, broadcast and premium networks and subscription video on demand services. Our content licensing agreements generally include fixed pricing and span multiple years. For example, following a film's theatrical release, our Filmed Entertainment segment may license the exhibition rights of a film to different customers over multiple successive distribution windows.

We recognize revenue when the content is delivered and available for use by the licensee. When the term of an existing agreement is renewed or extended, we recognize revenue at the later of when the content is available or when the renewal or extension period begins. Payment terms and conditions vary by contract type, although payments are generally collected over the license term. The amount of future revenue to be earned related to fixed pricing under existing agreements primarily relates to our Filmed Entertainment segment, which at any given time equals approximately 1 to 2 years of our annual Filmed Entertainment content licensing revenue. The majority of this revenue will be recognized within 2 years. This amount may fluctuate from period to period depending on the timing of the releases and the availability of content under existing agreements and may not represent the total content licensing revenue expected to be recognized as it does not include revenue from future agreements or from variable pricing or optional purchases under existing agreements.

For our content licensing agreements that include variable pricing, such as pricing based on the number of subscribers to a subscription video on demand service sold by our customers, we generally recognize revenue as our customers sell to their subscribers.

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Home Entertainment

Our Filmed Entertainment segment generates revenue from the sale of our produced and acquired films on standard-definition digital video discs and Blu-ray discs (together, “DVDs”) and through digital distribution services. Our Cable Networks and Broadcast Television networks also generate revenue from the sale of owned programming on DVDs and through digital distribution services, which is reported in other revenue. We generally recognize revenue from DVD sales, net of estimated returns and customer incentives, on the date that DVDs are delivered to and made available for sale by retailers. Payment terms generally include payment within 60 to 90 days from delivery to the retailer.

Theme Parks

Our Theme Parks segment generates revenue primarily from ticket sales and guest spending at our Universal theme parks in Orlando, Florida; Hollywood, California; and Osaka, Japan. Guest spending includes in-park spending on food, beverages and merchandise. We recognize revenue from theme park ticket sales when the tickets are used, generally within a year from the date of purchase. For annual passes, we generally recognize revenue on a straight-line basis over the period the pass is available to be used. We recognize revenue from guest spending at the point of sale.

Sky Segment

Direct-to-Consumer

The majority of Sky’s revenue is direct-to-consumer, which primarily includes subscription revenue relating to the sale of video services to residential and business customers. Sky also provides high-speed internet, voice and wireless phone services in select countries. Generally, all of our residential customers are initially under contracts, with terms typically ranging from rolling monthly to 2 years, depending on the product and territory, and may only discontinue service in accordance with the terms of their contracts. Subscription rates and related charges vary according to the services and features customers receive and the types of equipment they use. Sky’s video, high-speed internet, voice and wireless phone services generally may be sold individually or in bundles. We recognize revenue from video, high-speed internet, voice and wireless phone services as the services are provided on a monthly basis. At any given time, the amount of future revenue to be earned related to existing agreements is equal to less than half of our annual subscription revenue, which generally will be recognized within 2 years.

Content

Sky’s content revenue includes revenue from the distribution of its channels on third-party platforms and the licensing of owned programming to third-party video providers. Refer to the NBCUniversal segment discussion of distribution and content licensing revenue for accounting policies for these types of arrangements.

Advertising

Sky sells advertising and sponsorships across its owned channels and where it represents the sales efforts of third-party channels. Sky also sells targeted advertising in the U.K., Ireland and Italy, and generates revenue from online and mobile advertising and advertising across its On Demand services. Advertising revenue is recognized when the advertising is aired or viewed. Since Sky is acting as the principal in the arrangements where it represents the sales efforts of third parties, we record the advertising that is sold in advertising revenue and the fees paid to the third-party channels in other operating and administrative expenses.

Consolidated Balance Sheet

The following tables summarize our accounts receivable and other balances that are not separately presented in our consolidated balance sheet that relate to the recognition of revenue and collection of the related cash, as well as deferred costs associated with our contracts with customers.

December 31 (in millions)	2018	2017
Receivables, gross	\$ 11,456	\$ 9,122
Less: Allowance for doubtful accounts	352	288
Receivables, net	\$ 11,104	\$ 8,834

December 31 (in millions)	2018	2017
Noncurrent receivables (included in other noncurrent assets, net)	\$ 1,399	\$ 1,184
Contract acquisition and fulfillment costs (included in other noncurrent assets, net)	\$ 991	\$ 922
Noncurrent deferred revenue (included in other noncurrent liabilities)	\$ 650	\$ 497

In our Cable Communications and Sky segments, we manage credit risk by screening applicants through the use of internal customer information, identification verification tools and credit bureau data, as well as by offering customers the opportunity to establish automatic monthly payments. If a customer's account is delinquent, various measures are used to collect outstanding amounts, including termination of the customer's cable services.

Note 4: Programming and Production Costs

Video Distribution Programming Expenses

Programming expenses related to video services in Cable Communications and Sky are the fees we pay to license the programming we distribute to our video customers. Programming is generally acquired under multiyear distribution agreements, with rates typically based on the number of customers that receive the programming, channel positioning and the extent of distribution. From time to time, these contracts expire and programming continues to be provided under interim arrangements while the parties negotiate new contract terms, sometimes with effective dates that affect prior periods. While payments are typically made under the prior contract's terms, the amount of programming expenses recorded during the interim arrangement is based on our estimate of the ultimate contract terms expected to be negotiated. Differences between actual amounts determined upon resolution of negotiations and amounts recorded during these interim arrangements are recorded in the period of resolution.

When we receive incentives from a cable network for the licensing of its programming, we defer a portion of these incentives, which are included in other current and noncurrent liabilities, and recognize them over the term of the contract as a reduction to programming expenses.

Film and Television Costs

Our Cable Networks, Broadcast Television, Filmed Entertainment and Sky segments produce owned content or acquire the rights to programming from third parties, which are described as film and television costs and programming rights, respectively.

December 31 (in millions)	2018	2017
Film Costs:		
Released, less amortization	\$ 1,600	\$ 1,734
Completed, not released	144	50
In production and in development	1,063	1,149
	2,807	2,933
Television Costs:		
Released, less amortization	2,289	2,260
In production and in development	953	818
	3,242	3,078
Programming rights, less amortization	5,534	2,689
	11,583	8,700
Less: Current portion of programming rights	3,746	1,613
Film and television costs	\$ 7,837	\$ 7,087

Based on our current estimates of the total remaining revenue from all sources ("ultimate revenue"), in 2019 we expect to amortize approximately \$1.6 billion of film and television costs associated with our original film and television productions that have been released, or are completed and have not been released. Through 2021, we expect to amortize approximately 83% of unamortized film and television costs for our released productions, excluding amounts allocated to acquired libraries.

As of December 31, 2018, acquired film and television libraries, which are included within the "released, less amortization" captions in the table above, had remaining unamortized costs of \$396 million. These costs are generally amortized over a period not to exceed 20 years, and approximately 48% of these costs are expected to be amortized through 2021.

Capitalization of Film and Television Costs

We capitalize film and television production costs, including direct costs, production overhead, print costs, development costs and interest. We amortize capitalized film and television production costs, including acquired libraries, and accrue costs associated with participation and residual payments to programming and production expenses. We generally record the amortization and the accrued costs using the individual film forecast computation method, which amortizes the costs in the same ratio as the associated ultimate revenue. Estimates of ultimate revenue and total costs are based on anticipated release patterns, public acceptance and historical results for similar productions. Unamortized film and television production costs, including acquired libraries, are stated at the lower of unamortized cost or fair value. We do not capitalize costs related to the distribution of a film in movie theaters or the licensing or sale of a film or television production, which primarily include costs associated with marketing and distribution.

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In determining the method of amortization and estimated life of an acquired film or television library, we generally use the method and the life that most closely follow the undiscounted cash flows over the estimated life of the asset.

When an event or a change in circumstance occurs that was known or knowable as of the balance sheet date and that indicates the fair value of a film is less than its unamortized costs, we determine the fair value of the film and record an impairment charge for the amount by which the unamortized capitalized costs exceed the film's fair value. The estimated fair value of a production is based on Level 3 inputs that primarily use an analysis of future expected cash flows. Adjustments to capitalized film production costs were not material in any of the periods presented.

We may enter into cofinancing arrangements with third parties to jointly finance or distribute certain of our film productions. Cofinancing arrangements can take various forms, but in most cases involve the grant of an economic interest in a film to an investor. The number of investors and the terms of these arrangements can vary, although investors generally assume the full risks and rewards for the portion of the film acquired in these arrangements. We account for the proceeds received from a third-party investor under these arrangements as a reduction to our capitalized film costs. Under these arrangements, the investor owns an undivided copyright interest in the film, and therefore in each period we record either a charge or a benefit to programming and production expenses to reflect the estimate of the third-party investor's interest in the profit or loss of the film. The estimate of the third-party investor's interest in the profit or loss of a film is determined using the ratio of actual revenue earned to date to the ultimate revenue expected to be recognized over the film's useful life.

We capitalize the costs of programming content that we license but do not own, including rights to multiyear, live-event sports programming, at the earlier of when payments are made for the programming or when the license period begins and the content is made available for use. We amortize capitalized programming costs as the associated programs are broadcast. We generally amortize multiyear, live-event sports programming rights using the ratio of the current period revenue to the estimated ultimate revenue or under the terms of the contract.

Programming costs are recorded at the lower of unamortized cost or net realizable value on a program by program, package, channel or daypart basis. A daypart is an aggregation of programs broadcast during a particular time of day or programs of a similar type. Programming acquired by our Cable Networks segment is primarily tested on a channel basis for impairment, whereas programming acquired by our Broadcast Television segment is tested on a daypart basis. If we determine that the estimates of future cash flows are insufficient or if there is no plan to broadcast certain programming, we recognize an impairment charge to programming and production expenses.

Note 5: Income Taxes

Components of Income Tax Expense (Benefit)

Year ended December 31 (in millions)	2018	2017	2016
Current Expense (Benefit):			
Federal	\$ 2,026	\$ 2,411	\$ 3,190
State	639	277	480
Foreign	425	389	194
	3,090	3,077	3,864
Deferred Expense (Benefit):			
Federal	546	(10,651)	1,183
State	(167)	11	153
Foreign	(89)	(6)	98
	290	(10,646)	1,434
Income tax expense (benefit)	\$ 3,380	\$ (7,569)	\$ 5,298

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Our income tax expense (benefit) differs from the federal statutory amount because of the effect of the items detailed in the table below.

Year ended December 31 (in millions)	2018	2017	2016
Federal tax at statutory rate	\$ 3,201	\$ 5,374	\$ 5,014
State income taxes, net of federal benefit	212	299	373
Foreign income taxed at different rates	147	70	65
Nontaxable income attributable to noncontrolling interests	(20)	(45)	(128)
Adjustments to uncertain and effectively settled tax positions, net	144	(62)	24
Accrued interest on uncertain and effectively settled tax positions, net	29	3	17
Excess tax benefits recognized on share-based compensation	(75)	(297)	—
Federal tax legislation	(120)	(12,682)	—
Other	(138)	(229)	(67)
Income tax expense (benefit)	\$ 3,380	\$ (7,569)	\$ 5,298

We base our provision for income taxes on our current period income, changes in our deferred income tax assets and liabilities, income tax rates, changes in estimates of our uncertain tax positions, tax planning opportunities available in the jurisdictions in which we operate and following the adoption of new accounting guidance related to share-based compensation in 2017, excess tax benefits or deficiencies that arise when the tax consequences of share-based compensation differ from amounts previously recognized in the statement of income. We recognize deferred tax assets and liabilities when there are temporary differences between the financial reporting basis and tax basis of our assets and liabilities and for the expected benefits of using net operating loss carryforwards. When a change in the tax rate or tax law has an impact on deferred taxes, we apply the change based on the years in which the temporary differences are expected to reverse. We record the change in our consolidated financial statements in the period of enactment.

The determination of the income tax consequences of a business combination includes identifying the tax basis of assets and liabilities acquired and any contingencies associated with uncertain tax positions assumed or resulting from the business combination. Deferred tax assets and liabilities related to temporary differences of an acquired entity are recorded as of the date of the business combination and are based on our estimate of the ultimate tax basis that will be accepted by the various tax authorities. We record liabilities for contingencies associated with prior tax returns filed by the acquired entity based on criteria set forth in the appropriate accounting guidance. We adjust the deferred tax accounts and the liabilities periodically to reflect any revised estimated tax basis and any estimated settlements with the various tax authorities. The effects of these adjustments are recorded to income tax expense (benefit).

From time to time, we engage in transactions in which the tax consequences may be subject to uncertainty. In these cases, we evaluate our tax position using the recognition threshold and the measurement attribute in accordance with the accounting guidance related to uncertain tax positions. Examples of these transactions include business acquisitions and dispositions, including consideration paid or received in connection with these transactions, certain financing transactions, and the allocation of income among state and local tax jurisdictions. Significant judgment is required in assessing and estimating the tax consequences of these transactions. We determine whether it is more likely than not that a tax position will be sustained on examination, including the resolution of any related appeals or litigation processes, based on the technical merits of the position. A tax position that meets the more-likely-than-not recognition threshold is measured to determine the amount of benefit to be recognized in our consolidated financial statements. We classify interest and penalties, if any, associated with our uncertain tax positions as a component of income tax expense (benefit).

Current and deferred foreign income taxes are incurred primarily by Sky's and NBCUniversal's foreign subsidiaries. In 2018, 2017 and 2016, we had foreign income before taxes of \$855 million, \$1 billion and \$871 million, respectively, on which foreign income tax expense (benefit) was recorded.

Sky Acquisition

We recorded a \$1.9 billion increase in deferred income tax liabilities in connection with the acquisition of Sky, which were primarily related to foreign temporary differences associated with intangible assets and net operating losses, and were included in the preliminary allocation of purchase price. Although it operates primarily outside the United States, Sky will be included in certain of our consolidated state tax returns, which impacted our effective tax rates in those jurisdictions. As a result, we also recorded a \$244 million net decrease in the deferred state tax liability, net of federal benefit, on our existing temporary differences, which was included in income tax expense in the fourth quarter of 2018.

Tax Reform

On December 22, 2017, new federal tax reform legislation was enacted in the United States, resulting in significant changes from previous tax law. The 2017 Tax Act reduced the federal corporate income tax rate to 21% from 35% effective January 1, 2018. The rate change, along with certain immaterial changes in tax basis resulting from the 2017 Tax Act, resulted in a reduction of our net deferred tax liabilities of \$12.4 billion and a corresponding deferred income tax benefit in 2017. Our federal income tax expense for periods beginning in 2018 was based on the new rate.

The 2017 Tax Act also changed the taxation of foreign earnings, and companies generally are not subject to United States federal income taxes upon the receipt of dividends from foreign subsidiaries and are not permitted foreign tax credits related to such dividends. Beginning in 2018, in general, we no longer record United States federal income tax on our share of the income of our foreign subsidiaries, and we no longer record a benefit for foreign tax credits related to that income. Upon enactment, we reversed \$382 million of net deferred tax liabilities related to our cumulative undistributed foreign earnings and deferred tax assets for related foreign tax credits, resulting in a corresponding net tax benefit in 2017. Additionally, upon enactment, there was a one-time deemed repatriation tax on undistributed foreign earnings and profits (the “transition tax”). We recognized tax expense of \$101 million related to the transition tax in 2017.

The 2017 Tax Act also provides for immediate deduction of 100% of the costs of qualified property, including significant portions of our capital expenditures and film and television productions costs, that are incurred and the property placed in service during the period from September 27, 2017 to December 31, 2022. This provision will begin to phase down by 20% per year beginning January 1, 2023 and will be completely phased out as of January 1, 2027.

The adjustments to deferred tax assets and liabilities, and the liability related to the transition tax included provisional amounts estimated based on information available as of December 31, 2017. In 2018, we completed our analysis of the provisional items, resulting in immaterial adjustments primarily related to cumulative temporary differences and the one-time deemed repatriation tax on undistributed foreign earnings and profits.

In February 2018, the Bipartisan Budget Act of 2018 was enacted. As part of this legislation, various tax provisions that had expired on December 31, 2016 were retroactively extended to December 31, 2017, including the statute permitting the immediate deduction for certain film and television production costs. We recorded an income tax benefit of \$128 million in the first quarter of 2018 as a result of the enactment of this legislation.

Components of Net Deferred Tax Liability

December 31 (in millions)	2018	2017
Deferred Tax Assets:		
Net operating loss carryforwards	\$ 1,926	\$ 481
Nondeductible accruals and other	2,656	2,092
Less: Valuation allowance	632	377
	3,950	2,196
Deferred Tax Liabilities:		
Differences between book and tax basis of property and equipment and intangible assets	29,139	25,223
Differences between book and tax basis of investments	491	466
Differences between book and tax basis of long-term debt	604	673
Differences between book and tax basis of foreign subsidiaries and undistributed foreign earnings	85	39
	30,319	26,401
Net deferred tax liability	\$ 26,369	\$ 24,205

Changes in our net deferred tax liability in 2018 that were not recorded as deferred income tax benefit (expense) are primarily related to increases of \$1.9 billion related to acquisitions, including Sky, and \$42 million associated with our purchase of a noncontrolling interest, and a decrease of \$72 million associated with items included in other comprehensive income (loss). Our net deferred tax liability includes \$15 billion related to cable franchise rights that will remain unchanged unless we recognize an impairment or dispose of a cable franchise or there is a change in the tax law. Additionally, we recorded an immaterial cumulative effect adjustment to retained earnings and accumulated other comprehensive income (loss) in 2018 as a result of the adoption of updated guidance that permitted companies to reclassify disproportionate tax effects recorded in accumulated other comprehensive income as a result of the 2017 Tax Act.

As of December 31, 2018, we had federal net operating loss carryforwards of \$268 million, and various state net operating loss carryforwards, the majority of which expire in periods through 2038. As of December 31, 2018, we also had foreign net operating loss carryforwards of \$6.6 billion related to the foreign operations of Sky and NBCUniversal, the majority of which can be carried forward indefinitely. The determination of the realization of the state and foreign net operating loss carryforwards is dependent on our subsidiaries' taxable income or loss, apportionment percentages, redetermination from taxing authorities, and

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state and foreign laws that can change from year to year and impact the amount of such carryforwards. We recognize a valuation allowance if we determine it is more likely than not that some portion, or all, of a deferred tax asset will not be realized. As of December 31, 2018 and 2017, our valuation allowance was primarily related to state and foreign net operating loss carryforwards. The increase in the valuation allowance in 2018 was primarily related to the acquisition of Sky. As a result of the timing of the acquisition, the deferred tax assets and liabilities related to Sky are preliminary and subject to change, including our assessment of the realization of Sky's deferred tax assets of \$1.5 billion related to net operating losses. We will finalize the amounts recognized as soon as possible as we obtain the information necessary to complete the analysis, but no later than one year from the acquisition date. See Note 8 for further information on the Sky acquisition.

Uncertain Tax Positions

Our liability for uncertain tax positions as of December 31, 2018 totaled \$1.0 billion, which excludes the federal benefits on state tax positions that were recorded as deferred income taxes. Included in our liability for uncertain tax positions was \$153 million related to tax positions of NBCUniversal and NBCUniversal Enterprise for which we have been indemnified by GE, their former parent company. We are indemnified by GE for any income tax liability attributable to the NBCUniversal contributed businesses for periods prior to the close of the NBCUniversal transaction in January 2011 and also for any income tax liability attributable to NBCUniversal Enterprise for periods prior to the date of the NBCUniversal redemption transaction in March 2013.

Reconciliation of Unrecognized Tax Benefits

(in millions)	2018	2017	2016
Gross unrecognized tax benefits, January 1	\$ 1,497	\$ 1,443	\$ 1,441
Additions based on tax positions related to the current year	229	121	74
Additions based on tax positions related to prior years	125	319	72
Additions from acquired subsidiaries	130	—	13
Reductions for tax positions of prior years	(346)	(251)	(66)
Reductions due to expiration of statutes of limitations	(75)	(70)	(44)
Settlements with tax authorities	(17)	(65)	(47)
Gross unrecognized tax benefits, December 31	1,543	1,497	1,443
Positions paid	(531)	(688)	(340)
Liability for uncertain tax positions	\$ 1,012	\$ 809	\$ 1,103

Our liability for uncertain tax positions represents the amounts recorded for potential payment obligations. Our gross unrecognized tax benefits also include amounts related to positions for which tax has been assessed and paid. If we were to recognize our gross unrecognized tax benefits in the future, \$1.1 billion, which includes amounts indemnified by GE, would impact our effective tax rate and the remaining amount would increase our deferred income tax liability. The amount and timing of the recognition of any such tax benefit is dependent on the completion of examinations of our tax filings by the various tax authorities and the expiration of statutes of limitations. It is reasonably possible that certain tax contests could be resolved within the next 12 months that may result in a decrease in our effective tax rate.

As of December 31, 2018 and 2017, our accrued interest associated with our liability for uncertain tax positions was \$203 million and \$173 million, respectively. As of December 31, 2018 and 2017, \$56 million and \$43 million, respectively, of these amounts were related to tax positions of NBCUniversal and NBCUniversal Enterprise for which we have been indemnified by GE.

The IRS has completed its examination of our income tax returns for all years through 2016. Various states are examining our state tax returns and the tax years of those tax returns currently under examination vary by state, with most of the periods relating to tax years 2000 and forward. Various foreign jurisdictions are examining our tax returns and the tax years of those tax returns currently under examination vary by country, with most of the periods relating to tax years 2010 and forward.

Note 6: Earnings Per Share

Computation of Diluted EPS

Year ended December 31 (in millions, except per share data)	2018			2017			2016		
	Net Income Attributable to Comcast Corporation	Shares	Per Share Amount	Net Income Attributable to Comcast Corporation	Shares	Per Share Amount	Net Income Attributable to Comcast Corporation	Shares	Per Share Amount
Basic EPS attributable to Comcast Corporation shareholders	\$ 11,731	4,584	\$ 2.56	\$ 22,735	4,708	\$ 4.83	\$ 8,678	4,819	\$ 1.80
Effect of dilutive securities:									
Assumed exercise or issuance of shares relating to stock plans		56			78			56	
Diluted EPS attributable to Comcast Corporation shareholders	\$ 11,731	4,640	\$ 2.53	\$ 22,735	4,786	\$ 4.75	\$ 8,678	4,875	\$ 1.78

Diluted earnings per common share attributable to Comcast Corporation shareholders (“diluted EPS”) considers the impact of potentially dilutive securities using the treasury stock method. Our potentially dilutive securities include potential common shares related to our stock options and our restricted share units (“RSUs”). Diluted EPS excludes the impact of potential common shares related to our stock options in periods in which the combination of the option exercise price and the associated unrecognized compensation expense is greater than the average market price of our common stock. The amount of potential common shares related to our share-based compensation plans that were excluded from diluted EPS because their effect would have been antidilutive was not material in any of the periods presented.

Note 7: Long-Term Debt

Long-Term Debt Outstanding

December 31 (in millions)	Weighted-Average Interest Rate as of December 31, 2018	2018	2017
Commercial paper	2.86%	\$ 675	\$ 903
Revolving bank credit facilities ^(b)	1.13%	606	—
Term loans ^(a)	1.85%	13,268	3,880
Senior notes with maturities of 5 years or less, at face value ^(b)	3.48%	26,331	15,680
Senior notes with maturities between 5 and 10 years, at face value ^(b)	3.64%	26,727	13,277
Senior notes with maturities greater than 10 years, at face value ^{(b)(c)}	4.68%	45,030	31,838
Other, including capital lease obligations	—	808	921
Debt issuance costs, premiums, discounts, fair value adjustments for acquisition accounting and hedged positions, net ^(d)	—	(1,702)	(1,943)
Total debt	3.77% ^(d)	111,743	64,556
Less: Current portion		4,398	5,134
Long-term debt		\$ 107,345	\$ 59,422

(a) Term loans consist of the following, with foreign currency denominated borrowings translated using the exchange rates as of each date:

- Comcast: borrowings associated with the Sky transaction of £5.6 billion as of December 31, 2018 (see Note 8)
- Universal Studios Japan: ¥390 billion and ¥435 billion as of December 31, 2018 and 2017, respectively
- Universal Beijing Resort: ¥4 billion RMB as of December 31, 2018 (see Note 8)

(b) The December 31, 2018 amounts include an aggregate of approximately \$10.7 billion of Sky debt consolidated by Comcast. The Sky debt as of December 31, 2018 included \$3.2 billion of senior notes, €4.9 billion of senior notes and £1.1 billion of senior notes that will mature between 2019 and 2035. The Sky senior notes were recorded at fair value as of October 9, 2018.

(c) The December 31, 2018 and 2017 amounts include £625 million of 5.50% notes due 2029.

(d) Includes the effects of our derivative financial instruments.

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As of December 31, 2018 and 2017, our debt had an estimated fair value of \$114.1 billion and \$71.7 billion, respectively. The estimated fair value of our publicly traded debt was primarily based on Level 1 inputs that use quoted market values for the debt. The estimated fair value of debt for which there are no quoted market prices was based on Level 2 inputs that use interest rates available to us for debt with similar terms and remaining maturities.

We use cross-currency swaps for foreign currency denominated debt obligations when those obligations are denominated in a currency other than the functional currency. Cross-currency swaps effectively convert foreign currency denominated debt to debt denominated in the functional currency in order to hedge the risk that the cash flows related to annual interest payments and the payment of principal at maturity may be adversely affected by fluctuations in currency exchange rates. The gains and losses on these cross-currency swaps generally offset changes in the underlying value of the related exposures. As of December 31, 2018 and 2017, we had cross-currency swaps on \$5.3 billion and \$0.8 billion notional amount of our foreign currency denominated debt, respectively. As of December 31, 2018 and 2017, the aggregate fair value of these cross-currency swaps was a net liability of \$23 million and \$80 million, respectively.

We are also exposed to foreign currency exchange risk on the consolidation of our foreign operations. Beginning in 2018, we use foreign currency denominated debt and cross-currency swaps to hedge our net investments in certain of these subsidiaries. As of December 31, 2018, we had \$15.6 billion notional amount of our foreign currency denominated debt and cross-currency swaps designated as net investment hedges in our foreign subsidiaries.

Principal Maturities of Debt

(in millions)		
2019	\$	4,413
2020	\$	7,961
2021	\$	11,548
2022	\$	8,741
2023	\$	7,818
Thereafter	\$	72,964

2018 Debt Borrowings and Repayments

In 2018, we had borrowings of \$44.8 billion that primarily included \$27 billion of proceeds from the issuance of senior unsecured fixed and floating rate notes in October 2018, \$8.7 billion of proceeds from sterling-denominated unsecured term loans and \$3 billion of proceeds from the dollar-denominated unsecured term loan which were used to fund the acquisition of Sky, and \$4 billion of proceeds from the issuance of senior unsecured fixed rate notes in February 2018.

In 2018, we made repayments of \$8.8 billion of debt.

Revolving Bank Credit Facilities

As of December 31, 2018 and 2017, we had a \$7.6 billion and \$7.0 billion, respectively, revolving credit facility due 2021 with a syndicate of banks (“Comcast revolving credit facility”) that may be used for general corporate purposes. We may increase the commitment under the Comcast revolving credit facility up to a total of \$10 billion, as well as extend the expiration date to a date no later than 2023, subject to approval of the lenders. In addition, as of December 31, 2018 and 2017, NBCUniversal Enterprise had a \$1.6 billion and \$1.5 billion, respectively, revolving credit facility due 2021 with a syndicate of banks (“NBCUniversal Enterprise revolving credit facility”) that may be used for general corporate purposes. We may increase the commitment under the NBCUniversal Enterprise revolving credit facility up to a total of \$2 billion, as well as extend the expiration date to a date no later than 2023, subject to approval of the lenders. The interest rates on the revolving credit facilities consist of a base rate plus a borrowing margin that is determined based on Comcast’s credit rating. As of December 31, 2018, the borrowing margin for borrowings based on the London Interbank Offered Rate was 1.00%. As of December 31, 2018, Sky had a £1 billion revolving credit facility due 2021 with a syndicate of banks (“Sky revolving credit facility”) that may be used for general corporate purposes. The interest rate on the Sky revolving credit facility consists of a base rate plus a borrowing margin that is determined based on Sky’s credit rating. Each of the revolving credit facilities requires that we maintain certain financial ratios based on the respective debt and EBITDA of each entity, as defined in the credit facility. The Sky revolving credit facility also contains a ratio of EBITDA to net interest payable, as defined in the credit facility. We were in compliance with all financial covenants for all periods presented.

There were no amounts outstanding under the Comcast or NBCUniversal Enterprise revolving credit facilities as of December 31, 2018 or 2017. As of December 31, 2018, £475 million (approximately \$606 million using exchange rates as of December 31, 2018) was outstanding under the Sky revolving credit facility. As of December 31, 2018, amounts available under our consolidated revolving credit facilities, net of amounts outstanding under our commercial paper programs and outstanding letters

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of credit, totaled \$9.2 billion, which included \$942 million and \$670 million available under the NBCUniversal Enterprise and Sky revolving credit facilities, respectively.

Commercial Paper Programs

Our commercial paper programs provide a lower-cost source of borrowing to fund our short-term working capital requirements. In June 2017, we increased the Comcast and NBCUniversal Enterprise commercial paper programs to \$7.0 billion and \$1.5 billion, respectively, to coincide with the borrowing capacities then existing under the Comcast and NBCUniversal Enterprise revolving credit facilities. As of December 31, 2018, there was no amount outstanding under the Comcast commercial paper program. As of December 31, 2017, \$903 million was outstanding under the Comcast commercial paper program. As of December 31, 2018, NBCUniversal Enterprise had \$675 million face amount of commercial paper outstanding. As of December 31, 2017, NBCUniversal Enterprise had no commercial paper outstanding.

Letters of Credit and Bank Guarantees

As of December 31, 2018, we and certain of our subsidiaries had undrawn irrevocable standby letters of credit and bank guarantees totaling \$463 million to cover potential fundings under various agreements.

Cross-Guarantee Structure

Comcast, Comcast Cable and NBCUniversal have fully and unconditionally guaranteed each other's debt securities, including the Comcast revolving credit facility and the term loans borrowed and senior notes issued in connection with financing the acquisition of Sky. As of December 31, 2018, the principal amount of debt securities within the cross-guarantee structure totaled \$94.2 billion, of which \$26.9 billion will mature within the next 5 years.

Comcast and Comcast Cable fully and unconditionally guarantee NBCUniversal Enterprise's \$3.0 billion aggregate principal amount of senior notes, its revolving credit facility and its commercial paper program. NBCUniversal does not guarantee the NBCUniversal Enterprise senior notes, revolving credit facility, commercial paper program or its \$725 million liquidation preference of Series A cumulative preferred stock.

Comcast Parent provides a full and unconditional guarantee of the Universal Studios Japan yen-denominated ¥390 billion (approximately \$3.5 billion using exchange rates as of December 31, 2018) term loans with a final maturity of March 2022. None of Comcast, Comcast Cable nor NBCUniversal guarantee the \$10.7 billion of Sky outstanding indebtedness or the \$569 million of Universal Beijing Resort term loans.

Note 8: Significant Transactions

2018

Sky Transaction

On October 9, 2018, in connection with our offer to acquire the share capital of Sky, we acquired a controlling interest in Sky through a series of purchases of Sky shares at our offer price of £17.28 per Sky share. In the fourth quarter of 2018, we acquired the remaining Sky shares and now own 100% of Sky's equity interests. Total cash consideration was £30.2 billion (approximately \$39.4 billion using the exchange rates on the purchase dates).

Sky is one of Europe's leading entertainment companies, which primarily includes a direct-to-consumer business, providing video, high-speed internet, voice and wireless phone services, and a content business, operating entertainment networks, the Sky News broadcast network and Sky Sports networks. We believe the combination of our global communications, media and entertainment businesses will enable the delivery of innovations in technology and a strengthened content portfolio to an expanded worldwide audience across multiple platforms.

To finance the acquisition, we issued \$27.0 billion aggregate amount of senior unsecured fixed and floating rate notes that will mature between 2020 and 2058 and we borrowed £6.6 billion (\$8.7 billion using the exchange rates on the dates of borrowing) under a £7.0 billion unsecured sterling-denominated term loan credit agreement and \$3.0 billion under a \$3.0 billion unsecured dollar-denominated term loan credit agreement. The unsecured term loans and senior notes are guaranteed by Comcast Cable and NBCUniversal. The remaining amount of consideration was funded using cash on hand.

Preliminary Allocation of Purchase Price

We have applied acquisition accounting to Sky. Sky's results of operations are included in our consolidated results of operations since the acquisition date and are reported in our Sky segment. The net assets of Sky were recorded at their estimated fair value using Level 3 inputs. In valuing acquired assets and liabilities, fair value estimates are based on, but are not limited to, future expected cash flows, market rate assumptions for contractual obligations and appropriate discount rates. The estimated values are not yet final and are subject to change, and the changes could be significant. We will finalize the amounts recognized as soon as possible as we obtain the information necessary to complete the analysis, but no later than one year from the acquisition date.

The table below presents the preliminary allocation of the all-cash purchase price of £30.2 billion, or \$39.4 billion, to the assets and liabilities of Sky as a result of the transaction.

Preliminary Allocation of Purchase Price

(in millions)		
Consideration transferred	\$	39,387
<i>Preliminary allocation of purchase price</i>		
Cash	\$	1,283
Accounts receivable and other current assets		2,405
Film and television costs (See Note 4)		2,526
Property and equipment (See Note 11)		3,386
Intangible assets (See Note 12)		20,628
Accounts payable, accrued liabilities and other current liabilities		(5,791)
Long-term debt (See Note 7)		(11,215)
Deferred tax assets (liabilities), net (See Note 5)		(1,903)
Other noncurrent assets and (liabilities), net		(1,809)
Fair value of identifiable net assets acquired		9,510
Goodwill (See Note 12)	\$	29,877

Intangible Assets

Finite-lived intangible assets primarily consist of customer relationships with a carrying amount of \$11.8 billion and developed technology with a carrying amount of \$1.8 billion, with estimated useful lives of between 4 and 18 years. Indefinite-lived assets consist of trade names with a carrying amount of \$6.8 billion.

Goodwill

Goodwill consists primarily of intangible assets that do not qualify for separate recognition, including increased footprint, assembled workforce, noncontractual relationships and agreements. Since our allocation of the purchase price and estimated fair values of identifiable assets and liabilities is not yet final, the amount of the total goodwill is not yet final and is subject to change. The acquired goodwill is not expected to be deductible for tax purposes.

Acquisition-Related Costs

As a result of the Sky transaction, we have incurred incremental expenses including the U.K. share acquisition tax, success-based investment banker fees and fees to attorneys, accountants and other professional advisors, which are reflected in other operating and administrative expenses. We also incurred certain financing costs associated with our borrowings, which are reflected in interest expense. The table below presents the amounts related to these expenses included in our consolidated statement of income.

(in millions)		Year ended December 31, 2018
Other operating and administrative expenses	\$	339
Interest expense	\$	63

Actual and Unaudited Pro Forma Information

Our consolidated revenue and net income (loss) attributable to Comcast Corporation from October 9, 2018 to December 31, 2018 included \$4.6 billion and \$47.5 million, respectively, resulting from Sky's operations.

The following unaudited pro forma information has been presented as if the Sky transaction occurred on January 1, 2017. This information is based on historical results of operations, adjusted for allocation of purchase price and other acquisition accounting adjustments, and is not necessarily indicative of what the results would have been had we operated the business since January 1, 2017. For pro forma purposes, 2018 earnings were adjusted to exclude the acquisition-related costs noted above, and 2017 earnings were adjusted to include these costs. No pro forma adjustments have been made for cost savings or synergies that have been or may be achieved by the combined businesses.

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Year ended December 31 (in millions, except per share data)

	2018	2017
Revenue	\$ 109,518	\$ 102,971
Net income attributable to Comcast Corporation	\$ 11,365	\$ 22,308
Basic earnings per common share attributable to Comcast Corporation shareholders	\$ 2.48	\$ 4.74
Diluted earnings per common share attributable to Comcast Corporation shareholders	\$ 2.45	\$ 4.65

Universal Beijing Resort

We entered into an agreement with a consortium of Chinese state-owned companies to build and operate a Universal theme park and resort in Beijing, China (“Universal Beijing Resort”). We own a 30% interest in Universal Beijing Resort and the construction is being funded through a combination of debt financing and equity contributions from the investors in accordance with their equity interests. The debt financing, which is being provided by a syndicate of Chinese financial institutions, contains certain financial and operating covenants and a maximum borrowing limit of ¥26.6 billion RMB (approximately \$4 billion). The debt financing is secured by the assets of Universal Beijing Resort and the equity interests of the investors. As of December 31, 2018, Universal Beijing Resort had borrowed approximately \$569 million under the financing agreement.

We have concluded that Universal Beijing Resort is a variable interest entity based on its governance structure, and we consolidate it because we have the power to direct activities that most significantly impact its economic performance. There are no liquidity arrangements, guarantees or other financial commitments between us and Universal Beijing Resort, and therefore our maximum risk of financial loss is our 30% interest. Universal Beijing Resort’s results of operations are reported in our Theme Parks segment.

In March 2018, Universal Beijing Resort received initial equity investments through a combination of cash and noncash contributions from the investors. As of December 31, 2018, our consolidated balance sheet included assets, primarily including property and equipment, and liabilities of Universal Beijing Resort totaling \$1.5 billion and \$1.0 billion, respectively.

2017

FCC Spectrum Auction

On April 13, 2017, the Federal Communications Commission announced the results of its spectrum auction. In the auction, NBCUniversal relinquished its spectrum rights in the New York, Philadelphia and Chicago designated market areas (“DMAs”) where NBC and Telemundo had overlapping spectrum. NBCUniversal received proceeds of \$482 million in July 2017, which were recorded in other investing activities in our consolidated statement of cash flows. NBCUniversal recognized a pretax gain of \$337 million in other operating gains in 2017. NBC and Telemundo stations share broadcast signals in these DMAs. In connection with the auction, we also acquired the rights to \$1.7 billion of spectrum in the second quarter of 2017, which were recorded to other intangible assets, net. We had previously made a deposit of \$1.8 billion to participate in the auction in 2016 and received a refund for amounts in excess of the purchase price in 2017.

Universal Studios Japan

On April 6, 2017, we acquired the remaining interests in Universal Studios Japan that we did not already own for \$2.3 billion. The acquisition was funded through cash on hand and borrowings under our commercial paper program. Because we maintained control of Universal Studios Japan, the difference between the consideration transferred and the recorded value of the noncontrolling interests, as well as the related tax and accumulated other comprehensive income impacts, were recorded to additional paid-in capital.

2016

DreamWorks Animation

On August 22, 2016, we acquired all of the outstanding stock of DreamWorks Animation for \$3.8 billion. DreamWorks Animation’s stockholders received \$41 in cash for each share of DreamWorks Animation common stock. DreamWorks Animation creates animated feature films, television series and specials, live entertainment, and related consumer products. The results of operations for DreamWorks Animation are reported in our Filmed Entertainment segment following the acquisition date.

Note 9: Recent Accounting Pronouncements

Revenue Recognition

In May 2014, the Financial Accounting Standards Board (“FASB”) updated the accounting guidance related to revenue recognition. The updated accounting guidance provides a single, contract-based revenue recognition model to help improve financial reporting by providing clearer guidance on when an entity should recognize revenue and by reducing the number of standards to which an entity has to refer. The core principle of the new standard is that a company should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services.

We adopted the updated guidance on January 1, 2018 on a full retrospective basis, which required us to reflect the impact of the updated guidance for all periods presented. Upon adoption, we also implemented changes in our presentation of certain revenues and expenses, primarily in our Cable Communications segment.

The adoption of the new standard did not have a material impact on our consolidated results of operations or financial position for any period presented. The updated guidance also requires additional disclosures regarding the nature, timing and uncertainty of our revenue transactions. See Note 3 for additional information.

The tables below present the effects on our consolidated statement of income and balance sheet for the prior year periods presented.

Consolidated Statement of Income

Year ended December 31, 2017 (in millions)		Previously Reported	Effects of Adoption	As Adjusted
Revenue	\$	84,526	\$ 503	\$ 85,029
Total costs and expenses	\$	66,539	\$ 472	\$ 67,011
Operating income	\$	17,987	\$ 31	\$ 18,018
Net income attributable to Comcast Corporation	\$	22,714	\$ 21	\$ 22,735

Year ended December 31, 2016 (in millions)		Previously Reported	Effects of Adoption	As Adjusted
Revenue	\$	80,403	\$ 333	\$ 80,736
Total costs and expenses	\$	63,544	\$ 361	\$ 63,905
Operating income	\$	16,859	\$ (28)	\$ 16,831
Net income attributable to Comcast Corporation	\$	8,695	\$ (17)	\$ 8,678

Consolidated Balance Sheet

December 31, 2017 (in millions)		Previously Reported	Effects of Adoption	As Adjusted
Total current assets	\$	16,060	\$ 283	\$ 16,343
Film and television costs	\$	7,076	\$ 11	\$ 7,087
Other intangible assets, net	\$	18,779	\$ (646)	\$ 18,133
Other noncurrent assets, net	\$	3,489	\$ 865	\$ 4,354
Total assets	\$	186,949	\$ 513	\$ 187,462
Total current liabilities	\$	21,561	\$ 432	\$ 21,993
Deferred income taxes	\$	24,256	\$ 3	\$ 24,259
Other noncurrent liabilities	\$	10,904	\$ 68	\$ 10,972
Total equity	\$	69,449	\$ 10	\$ 69,459
Total liabilities and equity	\$	186,949	\$ 513	\$ 187,462

Cable Communications

A summary of the changes implemented for the Cable Communications segment is presented below.

Changes to Presentation of Revenue and Related Costs

- Revenue from our residential video services decreased with corresponding increases to high-speed internet and voice revenue due to a change in the allocation of revenue among our cable services included in a bundle that our residential customers purchase at a discount.

Comcast Corporation

- Revenue from franchise and other regulatory fees, which was previously presented in other revenue, is now presented with the corresponding cable services. This resulted in increases to video, voice and business services revenue.
- Residential customer late fees are now presented in other revenue. These fees were previously presented as a reduction to other operating costs and expenses.
- Certain costs, including costs related to the fulfillment of contracts with customers, are now presented as other assets and the related costs are recognized over time in operating costs and expenses, which are comprised of total costs and expenses, excluding depreciation and amortization expense and other operating gains. These amounts were previously presented as intangible assets, and the expenses were previously presented in amortization expense. The payments related to these assets are now presented in net cash provided by operating activities rather than in cash paid for intangible assets in our consolidated statement of cash flows.

Changes to the Timing of Recognition of Revenue and Related Costs

- Revenue for upfront installation services that are not distinct and commission expenses are now recognized as revenue and operating costs and expenses, respectively, over a period of time rather than recognized immediately as they were previously. We recorded a deferred revenue liability related to upfront installation fees that are not distinct services, which required us to allocate the installation fees to the respective service. The installation fees are generally recognized as revenue over the period that the fee would influence a customer to renew their service. This period is less than a year for Cable Communications residential customers and the term of the related contract for business services customers. Incremental costs to obtain a contract with a customer, such as commissions for our business customers, are now deferred and recognized over the contract term. Sales commissions related to our Cable Communications residential customers are expensed as incurred as the related period of benefit is less than a year.

The tables below present the effects these changes had on our Cable Communications segment revenue, operating costs and expenses, and depreciation and amortization expense as a result of the adoption of updated guidance for the prior year periods. Previously reported amounts are based on amounts previously presented in the segment information footnote.

Year ended December 31, 2017 (in millions)	Previously Reported	Effects of Adoption	As Adjusted
Residential:			
High-speed internet	\$ 14,769	\$ 912	\$ 15,681
Video	23,129	(255)	22,874
Voice	3,391	699	4,090
Business services	6,216	221	6,437
Advertising	2,257	193	2,450
Other	2,757	(1,219)	1,538
Total Cable Communications revenue	\$ 52,519	\$ 551	\$ 53,070
Operating costs and expenses	\$ 31,349	\$ 653	\$ 32,002
Depreciation and amortization expense	\$ 8,143	\$ (137)	\$ 8,006

Year ended December 31, 2016 (in millions)	Previously Reported	Effects of Adoption	As Adjusted
Residential:			
High-speed internet	\$ 13,532	\$ 889	\$ 14,421
Video	22,357	(153)	22,204
Voice	3,540	619	4,159
Business services	5,514	191	5,705
Advertising	2,476	150	2,626
Other	2,629	(1,167)	1,462
Total Cable Communications revenue	\$ 50,048	\$ 529	\$ 50,577
Operating costs and expenses	\$ 29,939	\$ 624	\$ 30,563
Depreciation and amortization expense	\$ 7,670	\$ (132)	\$ 7,538

NBCUniversal Segments

The adoption of the updated guidance impacted the timing of recognition for some of our revenue contracts, primarily for content licensing agreements. As a result of the adoption of the updated guidance, when the term of an existing content licensing agreement is renewed or extended, revenue is not recognized until the date when the renewal or extension period begins. Under the prior guidance, revenue for the content licensing renewal period was recognized on the date that the renewal was agreed to contractually. This change resulted in delayed revenue recognition for content licensing renewals or extensions in our Cable Networks, Broadcast Television and Filmed Entertainment segments. This change also impacted the timing of the related amortization of our film and television costs and participations and residuals expenses. The adoption of the updated guidance did not have a material impact on the results of operations or financial position for the NBCUniversal segments.

Financial Assets and Financial Liabilities

In January 2016, the FASB updated the accounting guidance related to the recognition and measurement of financial assets and financial liabilities. The updated accounting guidance, among other things, requires that all nonconsolidated equity investments, except those accounted for under the equity method, be measured at fair value and the changes in fair value be recognized in net income. On January 1, 2018, we adopted the updated guidance prospectively along with a related clarifying update and as a result, we recorded an immaterial cumulative effect adjustment to retained earnings, accumulated other comprehensive income (loss) and investments. See Note 10 for additional information.

Restricted Cash

In November 2016, the FASB updated the accounting guidance related to restricted cash. The new standard requires that the statement of cash flows present the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents, and a reconciliation of that total to amounts presented on the balance sheet. We adopted the updated guidance on January 1, 2018 and as required applied the retrospective transition method. The adoption did not have a material impact for any period presented.

Leases

In February 2016, the FASB updated the accounting guidance related to leases. The updated accounting guidance requires lessees to recognize a right-of-use asset and a lease liability on the balance sheet for all leases with the exception of short-term leases. The asset and liability are initially measured based on the present value of committed lease payments. For a lessee, the recognition, measurement and presentation of expenses and cash flows arising from a lease do not significantly change from previous guidance. For a lessor, the accounting applied is also largely unchanged from previous guidance. We will adopt the updated accounting guidance in the first quarter of 2019 and prior periods will not be adjusted. We are currently in the process of determining the impact that the updated accounting will have on our consolidated financial statements. See Note 17 for a summary of our undiscounted minimum rental commitments under operating leases as of December 31, 2018.

Note 10: Investments

December 31 (in millions)	2018	2017
Equity method	\$ 4,035	\$ 3,546
Marketable equity securities	341	433
Nonmarketable equity securities	1,805	1,186
Other investments	1,796	1,785
Total investments	7,977	6,950
Less: Current investments	94	19
Noncurrent investments	\$ 7,883	\$ 6,931

Investment and Other Income (Loss), Net

Year ended December 31 (in millions)	2018	2017	2016
Equity in net income (losses) of investees, net	\$ (364)	\$ 107	\$ (104)
Realized and unrealized gains (losses) on equity securities, net	(187)	(17)	12
Other income (loss), net	326	331	529
Investment and other income (loss), net	\$ (225)	\$ 421	\$ 437

Beginning January 1, 2018, in connection with our adoption of the updated accounting guidance related to the recognition and measurement of financial assets and financial liabilities (see Note 9), we updated the presentation and accounting policies for our

investments previously classified as fair value and cost method investments. The investment categories presented in the table above are based on the new guidance and updated policies, where applicable, are described below.

Equity Method

We use the equity method to account for investments in which we have the ability to exercise significant influence over the investee's operating and financial policies or in which we hold a significant partnership or limited liability company interest. Equity method investments are recorded at cost and are adjusted to recognize (1) our proportionate share of the investee's net income or loss after the date of investment, (2) amortization of the recorded investment that exceeds our share of the book value of the investee's net assets, (3) additional contributions made and dividends received, and (4) impairments resulting from other-than-temporary declines in fair value. For some investments, we record our share of the investee's net income or loss one quarter in arrears due to the timing of our receipt of such information. Gains or losses on the sale of equity method investments are recorded to other income (loss), net. If an equity method investee were to issue additional securities that would change our proportionate share of the entity, we would recognize the change, if any, as a gain or loss to other income (loss), net.

Atairos

On January 1, 2016, we established Atairos Group, Inc., a strategic company focused on investing in and operating companies in a range of industries and business sectors, both domestically and internationally. Atairos has a term of up to 12 years and is controlled by management companies led by our former CFO through interests that carry all of the voting rights. We are the only investor other than our former CFO and the other management company employees.

In February 2018, we amended our agreement with Atairos, which primarily increases our commitment to fund Atairos from up to \$4 billion to up to \$5 billion in the aggregate at any one time, subject to certain offsets. The amendment also increases our commitment to fund Atairos for a management fee from \$40 million to \$45 million annually, subject to certain annual adjustments. The management company investors have committed to fund from \$50 million to \$100 million, with at least \$40 million to be funded by our former CFO, subject to his continued role with Atairos. Our economic interests do not carry voting rights and obligate us to absorb approximately 99% of any losses and they provide us the right to receive approximately 86% of any residual returns in Atairos, in either case on a cumulative basis.

We have concluded that Atairos is a VIE, that we do not have the power to direct the activities that most significantly impact the economic performance of Atairos as we have no voting rights and only certain consent rights, and that we are not a related party with our former CFO or the management companies. We therefore do not consolidate Atairos and account for our investment as an equity method investment. There are no other liquidity arrangements, guarantees or other financial commitments between Comcast and Atairos, and therefore our maximum risk of financial loss is our investment balance and remaining unfunded capital commitment.

As of December 31, 2018 and 2017, our investment in Atairos was \$2.7 billion and \$2.4 billion, respectively. In 2018, 2017 and 2016, we made cash capital contributions totaling \$282 million, \$994 million and \$1.2 billion, respectively, to Atairos. Atairos follows investment company accounting and records its investments at their fair values each reporting period with the net gains or losses reflected in its statement of operations. We recognize our share of these gains and losses in equity in net income (losses) of investees, net. In 2018, we recognized our share of Atairos' losses of \$31 million; in 2017 and 2016, we recognized our share of Atairos' income of \$281 million and losses of \$38 million respectively.

In April 2018, we sold a controlling interest in our arena management-related businesses to Atairos and received as consideration additional equity interests in Atairos. In connection with the sale of the businesses, we recognized a pre-tax gain of \$200 million in other operating gains. In July 2017, we sold a business to a company owned by Atairos and received as consideration an investment in that company. In connection with the sale of the business, we recognized a pre-tax gain of \$105 million in other operating gains. We account for our retained ownership in the businesses as equity method investments.

Hulu

As of December 31, 2018 and 2017, our investment in Hulu was \$248 million and \$249 million, respectively. In 2018, 2017 and 2016, we made cash capital contributions totaling \$454 million, \$300 million and \$50 million, respectively, to Hulu. In 2018, 2017 and 2016, we recognized our proportionate share of Hulu's losses of \$454 million, \$276 million and \$168 million, respectively, in equity in net income (losses) of investees, net.

In August 2016, Time Warner Inc. acquired a 10% interest in Hulu, which diluted our interest in Hulu from 33% to 30%. For a period not to exceed 3 years, Time Warner may put its shares to Hulu or Hulu may call Time Warner's shares under certain limited circumstances arising from regulatory review. Given the contingent nature of the put and call options, we recorded a deferred gain of \$159 million and a corresponding increase to our investment in Hulu as a result of the dilution. The deferred gain will be recognized in other income (loss), net if and when the options expire unexercised.

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The Weather Channel

In March 2018, we sold our investment in The Weather Channel cable network and recognized a pretax gain of \$64 million in other income (loss), net.

In January 2016, following a legal restructuring at The Weather Channel, we and the other investors sold the entity holding The Weather Channel's product and technology businesses to IBM. Following the close of the transaction, we continued to hold an investment in The Weather Channel cable network through a new holding company. As a result of the sale of our investment, we recognized a pretax gain of \$108 million in other income (loss), net.

Marketable Equity Securities

We classify publicly traded investments with readily determinable fair values that are not accounted for under the equity method as marketable equity securities. Marketable equity securities are recorded at cost and adjusted to fair value at each reporting period. The changes in fair value between measurement dates are recorded in realized and unrealized gains (losses) on equity securities, net. The fair values of our marketable equity securities are based on Level 1 inputs that use quoted market prices.

Snap

In March 2017, we acquired an interest in Snap Inc. for \$500 million as part of its initial public offering, which we have classified as a marketable equity security. Snap is a camera company whose primary product is Snapchat, a camera app that was created to help people communicate through short videos and images. As of December 31, 2018 and 2017, our investment in Snap was \$162 million and \$430 million, respectively. In 2018, we recognized unrealized losses of \$268 million in realized and unrealized gains (losses) on equity securities, net related to our investment in Snap. Prior to the updated accounting guidance, unrealized gains and losses related to our investment in Snap were recorded to accumulated other comprehensive income.

Nonmarketable Equity Securities

We classify investments without readily determinable fair values that are not accounted for under the equity method as nonmarketable equity securities. The accounting guidance requires nonmarketable equity securities to be recorded at cost and adjusted to fair value at each reporting period. However, the guidance allows for a measurement alternative, which is to record the investments at cost, less impairment, if any, and subsequently adjust for observable price changes of identical or similar investments of the same issuer. We apply this measurement alternative to a majority of our nonmarketable equity securities. When an observable event occurs, we estimate the fair values of our nonmarketable equity securities based on Level 2 inputs that are derived from observable price changes of similar securities adjusted for insignificant differences in rights and obligations. The changes in value are recorded in realized and unrealized gains (losses) on equity securities, net.

Other Investments

AirTouch

We hold two series of preferred stock of Verizon Americas, Inc., formerly known as AirTouch Communications, Inc., a subsidiary of Verizon Communications Inc., which are redeemable in April 2020. As of both December 31, 2018 and 2017, our investment in AirTouch was \$1.6 billion. We account for our investment in AirTouch as a held to maturity investment using the cost method. As of both December 31, 2018 and 2017, the estimated fair value of the AirTouch preferred stock was \$1.7 billion.

The dividend and redemption activity of the AirTouch preferred stock determines the dividend and redemption payments associated with substantially all of the preferred shares issued by one of our consolidated subsidiaries, which is a VIE. The subsidiary has three series of preferred stock outstanding with an aggregate redemption value of \$1.75 billion. Substantially all of the AirTouch preferred stock is redeemable in April 2020 at a redemption value of \$1.65 billion. As of both December 31, 2018 and 2017, the two series of redeemable subsidiary preferred shares were recorded at \$1.6 billion, and those amounts are included in other noncurrent liabilities. As of both December 31, 2018 and 2017, the liability related to the redeemable subsidiary preferred shares had an aggregate estimated fair value of \$1.7 billion. The estimated fair values of the AirTouch preferred stock and redeemable subsidiary preferred shares are based on Level 2 inputs that use pricing models whose inputs are derived primarily from or corroborated by observable market data through correlation or other means for substantially the full term of the financial instrument. The one series of nonredeemable subsidiary preferred shares was recorded at \$100 million as of both December 31, 2018 and 2017, and those amounts are included in noncontrolling interests in our consolidated balance sheet. The carrying amount of the nonredeemable subsidiary preferred shares approximates its fair value.

Impairment Testing of Investments

We review our investment portfolio, other than our marketable equity securities, each reporting period to determine whether there are identified events or circumstances that would indicate there is a decline in the fair value. For our nonpublic investments, if there are no identified events or circumstances that would have a significant adverse effect on the fair value of the investment, then the fair value is not estimated. For our equity method investments and held to maturity investments, if an investment is deemed to have experienced an other-than-temporary decline below its cost basis, we reduce the carrying amount of the investment to its quoted or estimated fair value, as applicable, and establish a new cost basis for the investment. For our nonmarketable equity securities, we record the impairment to realized and unrealized gains (losses) on equity securities, net. For our equity method investments and our held to maturity investments, we record the impairment to other income (loss), net.

Note 11: Property and Equipment

December 31 (in millions)	Weighted-Average Original Useful Life as of December 31, 2018	2018	2017
Cable distribution system	11 years	\$ 38,380	\$ 36,046
Customer premise equipment	6 years	26,208	26,392
Other equipment	8 years	12,437	10,518
Buildings and leasehold improvements	30 years	14,188	12,346
Construction in process	N/A	2,991	1,752
Land	N/A	1,539	1,332
Property and equipment, at cost		95,743	88,386
Less: Accumulated depreciation		51,306	49,916
Property and equipment, net		\$ 44,437	\$ 38,470

Property and equipment are stated at cost. We capitalize improvements that extend asset lives and expense repairs and maintenance costs as incurred. We record depreciation using the straight-line method over the asset's estimated useful life. For assets that are sold or retired, we remove the applicable cost and accumulated depreciation and, unless the gain or loss on disposition is presented separately, we recognize it as a component of depreciation expense.

In accordance with the accounting guidance related to cable television companies, our Cable Communications segment capitalizes the costs associated with the construction of and improvements to our cable transmission and distribution facilities, including scalable infrastructure and line extensions; costs associated with acquiring and deploying new customer premise equipment; and costs associated with installation of our services. Costs capitalized include all direct costs for labor and materials, as well as various indirect costs. Costs incurred in connection with subsequent disconnects and reconnects are expensed as they are incurred.

We evaluate the recoverability of our property and equipment whenever events or substantive changes in circumstances indicate that the carrying amount may not be recoverable. The evaluation is based on the cash flows generated by the underlying asset groups, including estimated future operating results, trends or other determinants of fair value. If the total of the expected future undiscounted cash flows were less than the carrying amount of the asset group, we would recognize an impairment charge to the extent the carrying amount of the asset group exceeded its estimated fair value. Unless presented separately, the impairment charge is included as a component of depreciation expense.

Note 12: Goodwill and Intangible Assets

Goodwill

(in millions)	NBCUniversal						Sky	Corporate and Other	Total
	Cable Communications	Cable Networks	Broadcast Television	Filmed Entertainment	Theme Parks				
Balance, December 31, 2016	\$ 12,645	\$ 13,183	\$ 806	\$ 2,993	\$ 6,341	\$ —	\$ 12	\$ 35,980	
Acquisitions	140	241	—	32	—	—	5	418	
Dispositions	—	—	—	—	—	—	(11)	(11)	
Adjustments ^(a)	(1)	1	—	185	—	—	1	186	
Foreign currency translation	—	2	—	2	203	—	—	207	
Balance, December 31, 2017	12,784	13,427	806	3,212	6,544	—	7	36,780	
Acquisitions ^(b)	—	—	36	—	—	29,889	—	29,925	
Dispositions	—	—	—	(8)	—	—	(5)	(13)	
Adjustments	—	(13)	1	(9)	—	—	—	(21)	
Foreign currency translation	—	(7)	—	(11)	140	(639)	—	(517)	
Balance, December 31, 2018	\$ 12,784	\$ 13,407	\$ 843	\$ 3,184	\$ 6,684	\$ 29,250	\$ 2	\$ 66,154	

(a) Adjustments in 2017 primarily included the updated allocation of the purchase price for DreamWorks Animation.

(b) Acquisitions in 2018 primarily included the Sky acquisition. As of December 31, 2018, all goodwill resulting from the Sky acquisition has been presented in the Sky segment. Our evaluation of reporting units and assignment of goodwill resulting from the Sky acquisition are preliminary and subject to change. We will finalize the analysis no later than one year from the acquisition date. See Note 8 for further information on the Sky acquisition.

Goodwill is calculated as the excess of the consideration transferred over the identifiable net assets acquired in a business combination and represents the future economic benefits expected to arise from anticipated synergies and intangible assets acquired that do not qualify for separate recognition, including assembled workforce, noncontractual relationships and other agreements. We assess the recoverability of our goodwill annually, or more frequently whenever events or substantive changes in circumstances indicate that the carrying amount of a reporting unit may exceed its fair value. We test goodwill for impairment at the reporting unit level. To determine our reporting units, we evaluate the components one level below the segment level and we aggregate the components if they have similar economic characteristics. As a result of this assessment, our reporting units are generally the same as our reportable segments. We evaluate the determination of our reporting units used to test for impairment periodically or whenever events or substantive changes in circumstances occur. The assessment of recoverability may first consider qualitative factors to determine whether the existence of events or circumstances leads to a determination that it is more likely than not that the fair value of a reporting unit is less than its carrying amount. A quantitative assessment is performed if the qualitative assessment results in a more-likely-than-not determination or if a qualitative assessment is not performed. The quantitative assessment considers whether the carrying amount of a reporting unit exceeds its fair value, in which case an impairment charge is recorded to the extent the reporting unit's carrying value exceeds its fair value. Unless presented separately, the impairment charge is included as a component of amortization expense. We did not recognize any impairment charges in any of the periods presented.

Intangible Assets

December 31 (in millions)	Weighted-Average Original Useful Life as of December 31, 2018	2018 ^(a)		2017	
		Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Indefinite-Lived Intangible Assets:					
Franchise rights	N/A	\$ 59,365		\$ 59,364	
Trade names	N/A	9,633		2,981	
FCC licenses	N/A	2,333		2,238	
Finite-Lived Intangible Assets:					
Customer relationships	16 years	25,046	\$ (6,682)	13,612	\$ (5,819)
Software	5 years	11,395	(5,990)	8,258	(4,846)
Patents and other technology rights	7 years	260	(234)	259	(221)
Other agreements and rights	18 years	3,885	(1,288)	2,736	(1,065)
Total		\$ 111,917	\$ (14,194)	\$ 89,448	\$ (11,951)

(a) In 2018, we recorded intangible assets in connection with the Sky acquisition, which primarily consisted of customer relationships and trade names (see Note 8 for additional information).

Indefinite-Lived Intangible Assets

Indefinite-lived intangible assets consist primarily of our cable franchise rights. Our cable franchise rights represent the values we attributed to agreements with state and local authorities that allow access to homes and businesses in cable service areas acquired in business combinations. We do not amortize our cable franchise rights because we have determined that they meet the definition of indefinite-lived intangible assets since there are no legal, regulatory, contractual, competitive, economic or other factors which limit the period over which these rights will contribute to our cash flows. We reassess this determination periodically or whenever events or substantive changes in circumstances occur.

We assess the recoverability of our cable franchise rights and other indefinite-lived intangible assets annually, or more frequently whenever events or substantive changes in circumstances indicate that the assets might be impaired. Our three Cable Communications divisions represent the unit of account we use to test for impairment of our cable franchise rights. We evaluate the unit of account used to test for impairment of our cable franchise rights and other indefinite-lived intangible assets periodically or whenever events or substantive changes in circumstances occur to ensure impairment testing is performed at an appropriate level. The assessment of recoverability may first consider qualitative factors to determine whether it is more likely than not that the fair value of an indefinite-lived intangible asset is less than its carrying amount. A quantitative assessment is performed if the qualitative assessment results in a more-likely-than-not determination or if a qualitative assessment is not performed. When performing a quantitative assessment, we estimate the fair value of our cable franchise rights and other indefinite-lived intangible assets primarily based on a discounted cash flow analysis that involves significant judgment. When analyzing the fair values indicated under the discounted cash flow models, we also consider multiples of Adjusted EBITDA generated by the underlying assets, current market transactions and profitability information. If the fair value of our cable franchise rights or other indefinite-lived intangible assets were less than the carrying amount, we would recognize an impairment charge for the difference between the estimated fair value and the carrying value of the assets. Unless presented separately, the impairment charge is included as a component of amortization expense. We did not recognize any material impairment charges in any of the periods presented.

Finite-Lived Intangible Assets

Estimated Amortization Expense of Finite-Lived Intangible Assets

(in millions)

2019	\$	3,719
2020	\$	3,490
2021	\$	3,104
2022	\$	2,689
2023	\$	2,260

Finite-lived intangible assets are subject to amortization and consist primarily of customer relationships acquired in business combinations, software, and intellectual property rights. Our finite-lived intangible assets are amortized primarily on a straight-line basis over their estimated useful life or the term of the associated agreement.

We capitalize direct development costs associated with internal-use software, including external direct costs of material and services and payroll costs for employees devoting time to these software projects. We also capitalize costs associated with the purchase of software licenses. We generally amortize them on a straight-line basis over a period not to exceed five years. We expense maintenance and training costs, as well as costs incurred during the preliminary stage of a project, as they are incurred. We capitalize initial operating system software costs and amortize them over the life of the associated hardware.

We evaluate the recoverability of our finite-lived intangible assets whenever events or substantive changes in circumstances indicate that the carrying amount may not be recoverable. The evaluation is based on the cash flows generated by the underlying asset groups, including estimated future operating results, trends or other determinants of fair value. If the total of the expected future undiscounted cash flows were less than the carrying amount of the asset group, we would recognize an impairment charge to the extent the carrying amount of the asset group exceeded its estimated fair value. Unless presented separately, the impairment charge is included as a component of amortization expense.

Note 13: Employee Benefit Plans

Deferred Compensation Plans

Year ended December 31 (in millions)	2018		2017		2016
Benefit obligation	\$	2,885	\$	2,539	\$ 2,164
Interest expense	\$	222	\$	209	\$ 178

We maintain unfunded, nonqualified deferred compensation plans for certain members of management and nonemployee directors. The amount of compensation deferred by each participant is based on participant elections. Participant accounts, except for those in the NBCUniversal plan, are credited with income primarily based on a fixed annual rate. Participants in the NBCUniversal plan designate one or more valuation funds, independently established funds or indices that are used to determine the amount of investment gain or loss in the participant's account. Participants are eligible to receive distributions from their account based on elected deferral periods that are consistent with the plans and applicable tax law.

We have purchased life insurance policies to recover a portion of the future payments related to our deferred compensation plans. As of December 31, 2018 and 2017, the cash surrender value of these policies, which is recorded to other noncurrent assets, was \$351 million and \$820 million, respectively.

Postretirement Benefit Plan

Year ended December 31 (in millions)	2018		2017	
Benefit obligation	\$	408	\$	425
Amounts in accumulated other comprehensive income not yet recognized in benefits expense	\$	(439)	\$	(458)

We sponsor a retiree health and welfare benefit plan that provides postretirement benefits to eligible employees. The plan provides, to eligible employees who retire from Comcast or its subsidiaries, an annual stipend for reimbursement of certain eligible healthcare costs. The amount of the stipend for an eligible retiree is fixed at a predetermined amount based on the retiree's years of service and whether the retiree is eligible for Medicare. In December 2016, the plan was amended primarily to reduce the stipend benefits of active employees of Comcast and subsidiaries other than NBCUniversal who retire after December 31, 2017, and in 2017 additional amendments were made to reduce the benefits of NBCUniversal employees who retire after December 31, 2017. Additionally, under the plan, a small number of employees are also eligible to participate in legacy plan benefits that were previously sponsored by acquired companies.

The plan is unfunded and substantially all of our postretirement benefit obligations are recorded to noncurrent liabilities. The expense we recognize for the plan is determined using certain assumptions, including the discount rate. The benefits expense we recognized for the plan was not material in any of the periods presented.

Pension Plans

NBCUniversal sponsors various nonqualified defined benefit pension plans for domestic employees. Since the future benefits have been frozen since the beginning of 2013, we did not recognize service costs related to the pension plans for any period presented. The benefits expense we recognized for our defined benefit plans was not material in any of the periods presented. In addition to the defined benefit plans it sponsors, NBCUniversal is also obligated to reimburse The General Electric Company ("GE") for future benefit payments to those participants who were vested in the supplemental pension plan sponsored by GE at the time of the NBCUniversal transaction in 2011. These pension plans are currently unfunded and we recorded a benefit obligation of \$312 million and \$338 million as of December 31, 2018 and 2017, respectively, which consists primarily of our obligations to reimburse GE.

Retirement Investment Plans

We sponsor several 401(k) defined contribution retirement plans that allow eligible employees to contribute a portion of their compensation through payroll deductions in accordance with specified plan guidelines. We make contributions to the plans that include matching a percentage of the employees' contributions up to certain limits. In 2018, 2017 and 2016, expenses related to these plans totaled \$546 million, \$458 million and \$446 million, respectively.

Multiemployer Benefit Plans

We participate in various multiemployer benefit plans, including pension and postretirement benefit plans, that cover some of our employees and temporary employees who are represented by labor unions. We also participate in other multiemployer benefit plans that provide health and welfare and retirement savings benefits to active and retired participants. We make periodic contributions to these plans in accordance with the terms of applicable collective bargaining agreements and laws but do not

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sponsor or administer these plans. We do not participate in any multiemployer benefit plans for which we consider our contributions to be individually significant.

In 2018, 2017 and 2016, the total contributions we made to multiemployer pension plans were \$102 million, \$97 million and \$84 million, respectively. In 2018, 2017 and 2016, the total contributions we made to multiemployer postretirement and other benefit plans were \$183 million, \$152 million and \$136 million, respectively.

If we cease to be obligated to make contributions or were to otherwise withdraw from participation in any of these plans, applicable law would require us to fund our allocable share of the unfunded vested benefits, which is known as a withdrawal liability. In addition, actions taken by other participating employers may lead to adverse changes in the financial condition of one of these plans, which could result in an increase in our withdrawal liability.

Severance Benefits

We provide severance benefits to certain former employees. A liability is recorded when payment is probable, the amount is reasonably estimable, and the obligation relates to rights that have vested or accumulated. In 2018, 2017 and 2016, we recorded severance costs of \$243 million, \$203 million and \$315 million, respectively. Severance costs in 2016 included \$61 million of severance costs associated with the acquisition of DreamWorks Animation.

Note 14: Equity

Common Stock

In the aggregate, holders of our Class A common stock have 66⅔% of the voting power of our common stock and holders of our Class B common stock have 33⅓% of the voting power of our common stock, which percentage is generally non-dilutable under the terms of our articles of incorporation. Each share of our Class B common stock is entitled to 15 votes. The number of votes held by each share of our Class A common stock depends on the number of shares of Class A and Class B common stock outstanding at any given time. The 33⅓% aggregate voting power of our Class B common stock cannot be diluted by additional issuances of any other class of common stock. Our Class B common stock is convertible, share for share, into Class A common stock, subject to certain restrictions.

Shares of Common Stock Outstanding

(in millions)	A	B
Balance, December 31, 2015	4,875	9
Stock compensation plans	23	—
Repurchases and retirements of common stock	(161)	—
Employee stock purchase plans	5	—
Balance, December 31, 2016	4,742	9
Stock compensation plans	19	—
Repurchases and retirements of common stock	(131)	—
Employee stock purchase plans	5	—
Balance, December 31, 2017	4,635	9
Stock compensation plans	15	—
Repurchases and retirements of common stock	(140)	—
Employee stock purchase plans	7	—
Balance, December 31, 2018	4,517	9

Share Repurchases

Effective January 1, 2017, our Board of Directors increased our share repurchase program authorization to a total of \$12.0 billion, which does not have an expiration date. As of December 31, 2018, \$2.0 billion remained under this authorization.

Share Repurchases Under Share Repurchase Program Authorization

Year ended December 31 (in millions)	2018	2017	2016
Cash consideration	\$ 5,000	\$ 5,000	\$ 5,000
Shares repurchased	140	131	161

Accumulated Other Comprehensive Income (Loss)

December 31 (in millions)	2018	2017
Unrealized gains (losses) on marketable securities	\$ 3	\$ (43)
Deferred gains (losses) on cash flow hedges	55	9
Unrecognized gains (losses) on employee benefit obligations	325	260
Cumulative translation adjustments	(751)	153
Accumulated other comprehensive income (loss), net of deferred taxes	\$ (368)	\$ 379

Note 15: Share-Based Compensation

The tables below provide information on our share-based compensation.

Recognized Share-Based Compensation Expense

Year ended December 31 (in millions)	2018	2017	2016
Restricted share units	\$ 402	\$ 349	\$ 306
Stock options	205	205	173
Employee stock purchase plans	32	32	28
Total	\$ 639	\$ 586	\$ 507

Our share-based compensation plans consist primarily of awards of RSUs and stock options to certain employees and directors as part of our approach to long-term incentive compensation. Awards generally vest over a period of 5 years and in the case of stock options, have a 10 year term. Additionally, through our employee stock purchase plans, employees are able to purchase shares of our common stock at a discount through payroll deductions. As of December 31, 2018, all of our stock options outstanding were net settled stock options. Net settled stock options, as opposed to stock options exercised with a cash payment, result in fewer shares being issued and no cash proceeds being received by us when the options are exercised.

In connection with the acquisition of Sky in the fourth quarter of 2018, Comcast issued replacement share-based compensation awards for non-vested awards based in Sky shares that were held by Sky employees at the time of the acquisition. The replacement awards included 8 million RSUs with a grant date weighted average fair value of \$35.38 per RSU that will vest in 2020 and 2021.

Stock Options and Restricted Share Units

As of December 31, 2018, unless otherwise stated (in millions, except per share data)	Stock Options	RSUs
Awards granted during 2018	41	24
Weighted-average exercise price of awards granted during 2018	\$ 35.81	
Stock options outstanding and nonvested RSUs	200	51
Weighted-average exercise price of stock options outstanding	\$ 27.69	
Weighted-average fair value at grant date of nonvested RSUs		\$ 33.77

The cost associated with our share-based compensation is based on an award's estimated fair value at the date of grant and is recognized over the period in which any related services are provided. RSUs are valued based on the closing price of our common stock on the date of grant and are discounted for the lack of dividends, if any, during the vesting period. We use the Black-Scholes option pricing model to estimate the fair value of stock option awards.

The table below presents the weighted-average fair value on the date of grant of RSUs and stock options awarded under our various plans and the related weighted-average valuation assumptions.

Year ended December 31	2018	2017	2016
RSUs fair value	\$ 35.56	\$ 37.77	\$ 30.02
Stock options fair value	\$ 7.14	\$ 7.01	\$ 5.78
Stock Option Valuation Assumptions:			
Dividend yield	2.1%	1.7%	1.8%
Expected volatility	22.0%	20.1%	23.0%
Risk-free interest rate	2.7%	2.2%	1.5%
Expected option life (in years)	6.0	6.1	6.1

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As of December 31, 2018, we had unrecognized pretax compensation expense of \$1.1 billion related to nonvested RSUs and unrecognized pretax compensation expense of \$437 million related to nonvested stock options that will be recognized over a weighted-average period of approximately 1.6 years and 1.7 years, respectively. In 2018 and 2017, we recognized \$75 million and \$297 million, respectively, as a reduction to income tax expense as a result of excess tax benefits associated with our share-based compensation plans. In 2016, under prior accounting guidance, we recorded an increase to additional paid-in capital of \$233 million as a result of excess tax benefits associated with our share-based compensation plans.

Note 16: Supplemental Financial Information

Cash Payments for Interest and Income Taxes

Year ended December 31 (in millions)	2018	2017	2016
Interest	\$ 2,897	\$ 2,820	\$ 2,565
Income taxes	\$ 2,355	\$ 4,057	\$ 3,693

Noncash Investing and Financing Activities

During 2018:

- we acquired \$2.1 billion of property and equipment and intangible assets that were accrued but unpaid
- we recorded a liability of \$860 million for a quarterly cash dividend of \$0.19 per common share paid in January 2019
- we received noncash contributions from noncontrolling interests totaling \$391 million related to Universal Beijing Resort (see Note 8)

During 2017:

- we acquired \$1.2 billion of property and equipment and intangible assets that were accrued but unpaid
- we recorded a liability of \$732 million for a quarterly cash dividend of \$0.1575 per common share paid in January 2018
- we completed a senior notes exchange in the fourth quarter of 2017 in which we issued \$5.5 billion aggregate principal amount of new senior notes in exchange for \$3.9 billion aggregate principal amount of certain series of outstanding senior notes that were issued by us and NBCUniversal

During 2016:

- we acquired \$1.3 billion of property and equipment and intangible assets that were accrued but unpaid
- we recorded a liability of \$653 million for a quarterly cash dividend of \$0.1375 per common share paid in January 2017
- we recorded a liability of \$447 million for capital contributions to Atairos that were accrued in December and paid in January 2017 (see Note 10)

Cash, Cash Equivalents and Restricted Cash

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported in the consolidated balance sheet to the total of the amounts reported in our consolidated statement of cash flows.

December 31 (in millions)	2018	2017
Cash and cash equivalents	\$ 3,814	\$ 3,428
Restricted cash included in other current assets	46	60
Restricted cash included in other noncurrent assets, net	49	83
Cash, cash equivalents and restricted cash, end of year	\$ 3,909	\$ 3,571

Note 17: Commitments and Contingencies

Commitments

NBCUniversal and Sky enter into long-term commitments with third parties in the ordinary course of its business, including commitments to acquire film and television programming, obligations under various creative talent agreements, and various other television-related commitments. Some of NBCUniversal's employees, including writers, directors, actors, technical and production personnel, and others, as well as some of its on-air and creative talent, are covered by collective bargaining agreements or works councils. As of December 31, 2018, the total number of NBCUniversal employees covered by collective bargaining agreements was 10,000 full-time equivalent employees. Approximately 46% of these full-time equivalent employees were covered by collective bargaining agreements that have expired or are scheduled to expire during 2019.

We, through Comcast Spectacor, have employment agreements with both players and coaches of the Philadelphia Flyers. Certain of these employment agreements, which provide for payments that are guaranteed regardless of employee injury or termination, are covered by disability insurance if certain conditions are met.

The table below summarizes our minimum annual programming and talent commitments and our minimum annual rental commitments under operating leases for office space, equipment and transponder service agreements. Programming and talent commitments include acquired film and television programming, including broadcast rights to sporting events, such as the Olympics, and other programming commitments, as well as various contracts with creative talent.

As of December 31, 2018 (in millions)	Programming and Talent Commitments		Operating Leases	
2019	\$	11,741	\$	759
2020	\$	10,468	\$	709
2021	\$	8,865	\$	616
2022	\$	5,193	\$	480
2023	\$	3,060	\$	414
Thereafter	\$	17,142	\$	2,285

The table below presents our rental expense charged to operations.

Year ended December 31 (in millions)	2018		2017		2016	
Rental expense	\$	779	\$	839	\$	744

Contractual Obligation

We are party to a contractual obligation that involves an interest held by a third party in the revenue of certain theme parks. The arrangement provides the counterparty with the right to periodic payments associated with current period revenue which are recorded as an operating expense, and beginning in June 2017, the option to require NBCUniversal to purchase the interest for cash in an amount based on a contractual formula. The contractual formula is based on an average of specified historical theme park revenue at the time of exercise, which amount could be significantly higher than our carrying value. As of December 31, 2018, our carrying value was \$1.1 billion, and the value of the contractual obligation was \$1.6 billion based on inputs to the contractual formula as of that date.

Redeemable Subsidiary Preferred Stock

NBCUniversal Enterprise is a holding company that we control and consolidate whose principal assets are its interests in NBCUniversal Holdings. The holders of the Series A cumulative preferred stock of NBCUniversal Enterprise have the right to cause NBCUniversal Enterprise to redeem their shares at a price equal to the \$725 million aggregate liquidation preference plus accrued but unpaid dividends for a 30 day period beginning on March 19, 2020 and thereafter on every third anniversary of such date (each such date, a "put date"). The NBCUniversal Enterprise preferred stock pays dividends at a fixed rate of 5.25% per year. Shares of preferred stock can be called for redemption by NBCUniversal Enterprise at a price equal to the liquidation preference plus accrued but unpaid dividends one year following the put date applicable to such shares. Because certain of these redemption provisions are outside of our control, the NBCUniversal Enterprise preferred stock is presented outside of equity under the caption "redeemable noncontrolling interests and redeemable subsidiary preferred stock" in our consolidated balance sheet. Its initial value was based on the liquidation preference of the preferred stock and is adjusted for accrued but unpaid dividends. As of December 31, 2018 and 2017, the fair value of the NBCUniversal Enterprise redeemable subsidiary preferred stock was \$741 million and \$748 million, respectively. The estimated fair values are based on Level 2 inputs that use pricing

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models whose inputs are derived primarily from or corroborated by observable market data through correlation or other means for substantially the full term of the financial instrument.

Contingencies

We are a defendant in several unrelated lawsuits claiming infringement of various patents relating to various aspects of our businesses. In certain of these cases other industry participants are also defendants, and also in certain of these cases we expect that any potential liability would be in part or in whole the responsibility of our equipment and technology vendors under applicable contractual indemnification provisions. In addition, we are subject to other legal proceedings and claims that arise in the ordinary course of our business. While the amount of ultimate liability with respect to such actions is not expected to materially affect our results of operations, cash flows or financial position, any litigation resulting from any such legal proceedings or claims could be time-consuming and injure our reputation.

Note 18: Quarterly Financial Information (Unaudited)

(in millions, except per share data)	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total Year
2018					
Revenue	\$ 22,791	\$ 21,735	\$ 22,135	\$ 27,846	\$ 94,507
Operating income	\$ 4,645	\$ 5,014	\$ 4,836	\$ 4,514	\$ 19,009
Net income attributable to Comcast Corporation	\$ 3,118	\$ 3,216	\$ 2,886	\$ 2,511	\$ 11,731
Basic earnings per common share attributable to Comcast Corporation shareholders	\$ 0.67	\$ 0.70	\$ 0.63	\$ 0.55	\$ 2.56
Diluted earnings per common share attributable to Comcast Corporation shareholders	\$ 0.66	\$ 0.69	\$ 0.62	\$ 0.55	\$ 2.53
Dividends declared per common share	\$ 0.19	\$ 0.19	\$ 0.19	\$ 0.19	\$ 0.76
2017					
Revenue	\$ 20,587	\$ 21,286	\$ 21,081	\$ 22,075	\$ 85,029
Operating income	\$ 4,542	\$ 4,568	\$ 4,779	\$ 4,129	\$ 18,018
Net income attributable to Comcast Corporation ^(a)	\$ 2,573	\$ 2,521	\$ 2,642	\$ 14,999	\$ 22,735
Basic earnings per common share attributable to Comcast Corporation shareholders	\$ 0.54	\$ 0.53	\$ 0.56	\$ 3.22	\$ 4.83
Diluted earnings per common share attributable to Comcast Corporation shareholders	\$ 0.53	\$ 0.52	\$ 0.55	\$ 3.17	\$ 4.75
Dividends declared per common share	\$ 0.1575	\$ 0.1575	\$ 0.1575	\$ 0.1575	\$ 0.63

Minor differences may exist due to rounding.

(a) In the fourth quarter of 2017, net income attributable to Comcast Corporation included a \$12.7 billion net income tax benefit as a result of the impacts of the 2017 tax reform legislation. See Note 5 for additional information.

Note 19: Condensed Consolidating Financial Information

Comcast (“Comcast Parent”), Comcast Cable Communications, LLC (“CCCL Parent”) and NBCUniversal (“NBCUniversal Media Parent”) have fully and unconditionally guaranteed each other’s debt. See Note 7 for additional information on the cross-guarantee structure.

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Condensed Consolidating Statement of Income

For the Year Ended December 31, 2018 (in millions)	Comcast Parent	Comcast Holdings	CCCL Parent	NBCUniversal Media Parent	Non- Guarantor Subsidiaries	Elimination and Consolidation Adjustments	Consolidated Comcast Corporation
Revenue:							
Service revenue	\$ —	\$ —	\$ —	\$ —	\$ 94,507	\$ —	\$ 94,507
Management fee revenue	1,197	—	1,175	—	—	(2,372)	—
Total revenue	1,197	—	1,175	—	94,507	(2,372)	94,507
Costs and Expenses:							
Programming and production	—	—	—	—	29,692	—	29,692
Other operating and administrative	947	—	1,175	1,023	27,321	(2,372)	28,094
Advertising, marketing and promotion	—	—	—	—	7,036	—	7,036
Depreciation	46	—	—	—	8,235	—	8,281
Amortization	5	—	—	—	2,731	—	2,736
Other operating gains	—	—	—	—	(341)	—	(341)
Total costs and expenses	998	—	1,175	1,023	74,674	(2,372)	75,498
Operating income (loss)	199	—	—	(1,023)	19,833	—	19,009
Interest expense	(2,644)	(12)	(190)	(430)	(266)	—	(3,542)
Investment and other income (loss), net	13,638	13,604	12,021	6,694	5,054	(51,236)	(225)
Income (loss) before income taxes	11,193	13,592	11,831	5,241	24,621	(51,236)	15,242
Income tax (expense) benefit	538	8	40	(4)	(3,962)	—	(3,380)
Net income (loss)	11,731	13,600	11,871	5,237	20,659	(51,236)	11,862
Less: Net income attributable to noncontrolling interests and redeemable subsidiary preferred stock	—	—	—	—	131	—	131
Net income (loss) attributable to Comcast Corporation	\$11,731	\$13,600	\$11,871	\$ 5,237	\$ 20,528	\$ (51,236)	\$ 11,731
Comprehensive income (loss) attributable to Comcast Corporation	\$10,908	\$13,623	\$11,873	\$ 5,279	\$ 19,553	\$ (50,328)	\$ 10,908

Comcast Corporation

Condensed Consolidating Statement of Income

For the Year Ended December 31, 2017 (in millions)	Comcast Parent	Comcast Holdings	CCCL Parent	NBCUniversal Media Parent	Non- Guarantor Subsidiaries	Elimination and Consolidation Adjustments	Consolidated Comcast Corporation
Revenue:							
Service revenue	\$ —	\$ —	\$ —	\$ —	\$ 85,029	\$ —	\$ 85,029
Management fee revenue	1,128	—	1,109	—	—	(2,237)	—
Total revenue	1,128	—	1,109	—	85,029	(2,237)	85,029
Costs and Expenses:							
Programming and production	—	—	—	—	25,355	—	25,355
Other operating and administrative	766	—	1,109	1,044	24,767	(2,237)	25,449
Advertising, marketing and promotion	—	—	—	—	6,519	—	6,519
Depreciation	31	—	—	—	7,883	—	7,914
Amortization	6	—	—	—	2,210	—	2,216
Other operating gains	—	—	—	—	(442)	—	(442)
Total costs and expenses	803	—	1,109	1,044	66,292	(2,237)	67,011
Operating income (loss)	325	—	—	(1,044)	18,737	—	18,018
Interest expense	(2,172)	(12)	(207)	(456)	(239)	—	(3,086)
Investment and other income (loss), net	24,076	21,767	19,610	6,584	5,545	(77,161)	421
Income (loss) before income taxes	22,229	21,755	19,403	5,084	24,043	(77,161)	15,353
Income tax (expense) benefit	506	156	71	(4)	6,840	—	7,569
Net income (loss)	22,735	21,911	19,474	5,080	30,883	(77,161)	22,922
Less: Net income loss attributable to noncontrolling interests and redeemable subsidiary preferred stock	—	—	—	—	187	—	187
Net income (loss) attributable to Comcast Corporation	\$22,735	\$21,911	\$19,474	\$ 5,080	\$ 30,696	\$ (77,161)	\$ 22,735
Comprehensive income (loss) attributable to Comcast Corporation	\$22,822	\$21,909	\$19,477	\$ 5,054	\$ 30,558	\$ (76,998)	\$ 22,822

Comcast Corporation

Condensed Consolidating Statement of Income

For the Year Ended December 31, 2016 (in millions)	Comcast Parent	Comcast Holdings	CCCL Parent	NBCUniversal Media Parent	Non- Guarantor Subsidiaries	Elimination and Consolidation Adjustments	Consolidated Comcast Corporation
Revenue:							
Service revenue	\$ —	\$ —	\$ —	\$ —	\$ 80,736	\$ —	\$ 80,736
Management fee revenue	1,067	—	1,049	—	—	(2,116)	—
Total revenue	1,067	—	1,049	—	80,736	(2,116)	80,736
Costs and Expenses:							
Programming and production	—	—	—	—	24,348	—	24,348
Other operating and administrative	813	—	1,049	932	23,162	(2,116)	23,840
Advertising, marketing and promotion	—	—	—	—	6,291	—	6,291
Depreciation	28	—	—	—	7,436	—	7,464
Amortization	6	—	—	—	1,956	—	1,962
Other operating gains	—	—	—	—	—	—	—
Total costs and expenses	847	—	1,049	932	63,193	(2,116)	63,905
Operating income (loss)	220	—	—	(932)	17,543	—	16,831
Interest expense	(1,941)	(12)	(239)	(456)	(294)	—	(2,942)
Investment and other income (loss), net	9,799	9,289	8,703	5,572	4,515	(37,441)	437
Income (loss) before income taxes	8,078	9,277	8,464	4,184	21,764	(37,441)	14,326
Income tax (expense) benefit	600	6	84	(13)	(5,975)	—	(5,298)
Net income (loss)	8,678	9,283	8,548	4,171	15,789	(37,441)	9,028
Less: Net income attributable to noncontrolling interests and redeemable subsidiary preferred stock	—	—	—	—	350	—	350
Net income (loss) attributable to Comcast Corporation	\$ 8,678	\$ 9,283	\$ 8,548	\$ 4,171	\$ 15,439	\$ (37,441)	\$ 8,678
Comprehensive income (loss) attributable to Comcast Corporation	\$ 8,950	\$ 9,325	\$ 8,554	\$ 4,248	\$ 15,529	\$ (37,656)	\$ 8,950

Comcast Corporation
Condensed Consolidating Statement of Cash Flows

For the Year Ended December 31, 2018 (in millions)	Comcast Parent	Comcast Holdings	CCCL Parent	NBCUniversal Media Parent	Non- Guarantor Subsidiaries	Elimination and Consolidation Adjustments	Consolidated Comcast Corporation
Net cash provided by (used in) operating activities	\$ (2,245)	\$ 126	\$ (112)	\$ (1,430)	\$ 27,958	\$ —	\$ 24,297
Investing Activities:							
Net transactions with affiliates	(26,179)	(575)	112	1,336	25,306	—	—
Capital expenditures	(27)	—	—	—	(9,747)	—	(9,774)
Cash paid for intangible assets	(4)	—	—	—	(1,931)	—	(1,935)
Acquisitions and construction of real estate properties	(105)	—	—	—	(38)	—	(143)
Construction of Universal Beijing Resort	—	—	—	—	(460)	—	(460)
Acquisitions, net of cash acquired	—	—	—	—	(38,219)	—	(38,219)
Proceeds from sales of businesses and investments	—	—	—	68	73	—	141
Purchases of investments	(126)	—	—	(50)	(1,081)	—	(1,257)
Deposits	—	—	—	—	—	—	—
Other	148	449	—	—	196	—	793
Net cash provided by (used in) investing activities	(26,293)	(126)	112	1,354	(25,901)	—	(50,854)
Financing Activities:							
Proceeds from (repayments of) short-term borrowings, net	(902)	—	—	—	1,281	—	379
Proceeds from borrowings	44,113	—	—	—	668	—	44,781
Repurchases and repayments of debt	(5,737)	—	—	(4)	(3,057)	—	(8,798)
Repurchases of common stock under repurchase program and employee plans	(5,320)	—	—	—	—	—	(5,320)
Dividends paid	(3,352)	—	—	—	—	—	(3,352)
Purchase of Universal Studios Japan noncontrolling interests	—	—	—	—	—	—	—
Issuances of common stock	—	—	—	—	—	—	—
Distributions to noncontrolling interests and dividends for redeemable subsidiary preferred stock	—	—	—	—	(277)	—	(277)
Other	(201)	—	—	—	(72)	—	(273)
Net cash provided by (used in) financing activities	28,601	—	—	(4)	(1,457)	—	27,140
Impact of foreign currency on cash, cash equivalents and restricted cash	(63)	—	—	—	(182)	—	(245)
Increase (decrease) in cash and cash equivalents and restricted cash	—	—	—	(80)	418	—	338
Cash, cash equivalents and restricted cash, beginning of year	—	—	—	496	3,075	—	3,571
Cash, cash equivalents and restricted cash, end of year	\$ —	\$ —	\$ —	\$ 416	\$ 3,493	\$ —	\$ 3,909

Condensed Consolidating Statement of Cash Flows

For the Year Ended December 31, 2017 (in millions)	Comcast Parent	Comcast Holdings	CCCL Parent	NBCUniversal Media Parent	Non-Guarantor Subsidiaries	Elimination and Consolidation Adjustments	Consolidated Comcast Corporation
Net cash provided by (used in) operating activities	\$ 151	\$ 15	\$ (147)	\$ (1,439)	\$ 22,681	\$ —	\$ 21,261
Investing Activities:							
Net transactions with affiliates	5,578	(5)	757	1,447	(7,777)	—	—
Capital expenditures	(12)	—	—	—	(9,538)	—	(9,550)
Cash paid for intangible assets	(4)	—	—	—	(1,601)	—	(1,605)
Acquisitions and construction of real estate properties	(267)	—	—	—	(151)	—	(418)
Construction of Universal Beijing Resort	—	—	—	—	(71)	—	(71)
Acquisitions, net of cash acquired	—	—	—	—	(532)	—	(532)
Proceeds from sales of businesses and investments	—	—	—	14	136	—	150
Purchases of investments	(70)	(10)	(60)	(62)	(2,090)	—	(2,292)
Deposits	—	—	—	—	—	—	—
Other	101	—	—	58	626	—	785
Net cash provided by (used in) investing activities	5,326	(15)	697	1,457	(20,998)	—	(13,533)
Financing Activities:							
Proceeds from (repayments of) short-term borrowings, net	(837)	—	—	—	(1,068)	—	(1,905)
Proceeds from borrowings	5,997	—	—	—	5,469	—	11,466
Repurchases and repayments of debt	(2,288)	—	(550)	(4)	(3,522)	—	(6,364)
Repurchases of common stock under repurchase program and employee plans	(5,435)	—	—	—	—	—	(5,435)
Dividends paid	(2,883)	—	—	—	—	—	(2,883)
Purchase of Universal Studios Japan noncontrolling interests	—	—	—	—	(2,299)	—	(2,299)
Issuances of common stock	—	—	—	—	—	—	—
Distributions to noncontrolling interests and dividends for redeemable subsidiary preferred stock	—	—	—	—	(252)	—	(252)
Other	(31)	—	—	—	131	—	100
Net cash provided by (used in) financing activities	(5,477)	—	(550)	(4)	(1,541)	—	(7,572)
Increase (decrease) in cash and cash equivalents and restricted cash	—	—	—	14	142	—	156
Cash, cash equivalents and restricted cash, beginning of year	—	—	—	482	2,933	—	3,415
Cash, cash equivalents and restricted cash, end of year	\$ —	\$ —	\$ —	\$ 496	\$ 3,075	\$ —	\$ 3,571

Condensed Consolidating Statement of Cash Flows

For the Year Ended December 31, 2016 (in millions)	Comcast Parent	Comcast Holdings	CCCL Parent	NBCUniversal Media Parent	Non- Guarantor Subsidiaries	Elimination and Consolidation Adjustments	Consolidated Comcast Corporation
Net cash provided by (used in) operating activities	\$ 349	\$ (336)	\$(100)	\$ (1,453)	\$ 21,231	\$ —	\$ 19,691
Investing Activities:							
Net transactions with affiliates	(1,956)	336	100	2,642	(1,122)	—	—1
Capital expenditures	(13)	—	—	—	(9,122)	—	(9,135)
Cash paid for intangible assets	(9)	—	—	—	(1,543)	—	(1,552)
Acquisitions and construction of real estate properties	(35)	—	—	—	(393)	—	(428)
Construction of Universal Beijing Resort	—	—	—	—	(22)	—	(22)
Acquisitions, net of cash acquired	—	—	—	—	(3,929)	—	(3,929)
Proceeds from sales of businesses and investments	—	—	—	104	114	—	218
Purchases of investments	(40)	—	—	(210)	(1,447)	—	(1,697)
Deposits	—	—	—	—	(1,749)	—	(1,749)
Other	(108)	—	—	(35)	172	—	29
Net cash provided by (used in) investing activities	(2,161)	336	100	2,501	(19,041)	—	(18,265)
Financing Activities:							
Proceeds from (repayments of) short-term borrowings, net	1,339	—	—	—	451	—	1,790
Proceeds from borrowings	9,231	—	—	—	—	—	9,231
Repurchases and repayments of debt	(750)	—	—	(1,005)	(1,297)	—	(3,052)
Repurchases of common stock under repurchase program and employee plans	(5,352)	—	—	—	—	—	(5,352)
Dividends paid	(2,601)	—	—	—	—	—	(2,601)
Issuances of common stock	23	—	—	—	—	—	23
Distributions to noncontrolling interests and dividends for redeemable subsidiary preferred stock	—	—	—	—	(253)	—	(253)
Other	(78)	—	—	25	(167)	—	(220)
Net cash provided by (used in) financing activities	1,812	—	—	(980)	(1,266)	—	(434)
Increase (decrease) in cash and cash equivalents and restricted cash	—	—	—	68	924	—	992
Cash, cash equivalents and restricted cash, beginning of year	—	—	—	414	2,009	—	2,423
Cash, cash equivalents and restricted cash, end of year	\$ —	\$ —	\$ —	\$ 482	\$ 2,933	\$ —	\$ 3,415

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Condensed Consolidating Balance Sheet

December 31, 2018 (in millions)	Comcast Parent	Comcast Holdings	CCCL Parent	NBCUniversal Media Parent	Non- Guarantor Subsidiaries	Elimination and Consolidation Adjustments	Consolidated Comcast Corporation
Assets							
Cash and cash equivalents	\$ —	\$ —	\$ —	\$ 416	\$ 3,398	\$ —	\$ 3,814
Receivables, net	—	—	—	—	11,104	—	11,104
Programming rights	—	—	—	—	3,746	—	3,746
Other current assets	66	20	—	28	3,070	—	3,184
Total current assets	66	20	—	444	21,318	—	21,848
Film and television costs	—	—	—	—	7,837	—	7,837
Investments	270	11	143	790	6,669	—	7,883
Investments in and amounts due from subsidiaries eliminated upon consolidation	157,264	147,028	130,214	53,853	97,872	(586,231)	—
Property and equipment, net	670	—	—	—	43,767	—	44,437
Franchise rights	—	—	—	—	59,365	—	59,365
Goodwill	—	—	—	—	66,154	—	66,154
Other intangible assets, net	11	—	—	—	38,347	—	38,358
Other noncurrent assets, net	1,057	208	—	85	4,910	(458)	5,802
Total assets	\$159,338	\$147,267	\$130,357	\$ 55,172	\$ 346,239	\$ (586,689)	\$ 251,684
Liabilities and Equity							
Accounts payable and accrued expenses related to trade creditors	\$ 2	\$ —	\$ —	\$ —	\$ 8,492	\$ —	\$ 8,494
Accrued participations and residuals	—	—	—	—	1,808	—	1,808
Deferred revenue	—	—	—	—	2,182	—	2,182
Accrued expenses and other current liabilities	2,357	150	360	282	7,572	—	10,721
Current portion of long-term debt	699	—	—	4	3,695	—	4,398
Total current liabilities	3,058	150	360	286	23,749	—	27,603
Long-term debt, less current portion	81,661	146	2,100	7,748	15,690	—	107,345
Deferred income taxes	—	314	—	65	27,734	(524)	27,589
Other noncurrent liabilities	3,006	—	—	1,201	11,056	66	15,329
Redeemable noncontrolling interests and redeemable subsidiary preferred stock	—	—	—	—	1,316	—	1,316
Equity:							
Common stock	54	—	—	—	—	—	54
Other shareholders' equity	71,559	146,657	127,897	45,872	265,805	(586,231)	71,559
Total Comcast Corporation shareholders' equity	71,613	146,657	127,897	45,872	265,805	(586,231)	71,613
Noncontrolling interests	—	—	—	—	889	—	889
Total equity	71,613	146,657	127,897	45,872	266,694	(586,231)	72,502
Total liabilities and equity	\$159,338	\$147,267	\$130,357	\$ 55,172	\$ 346,239	\$ (586,689)	\$ 251,684

Comcast Corporation

Condensed Consolidating Balance Sheet

December 31, 2017 (in millions)	Comcast Parent	Comcast Holdings	CCCL Parent	NBCUniversal Media Parent	Non- Guarantor Subsidiaries	Elimination and Consolidation Adjustments	Consolidated Comcast Corporation
Assets							
Cash and cash equivalents	\$ —	\$ —	\$ —	\$ 496	\$ 2,932	\$ —	\$ 3,428
Receivables, net	—	—	—	—	8,834	—	8,834
Programming rights	—	—	—	—	1,613	—	1,613
Other current assets	60	—	7	25	2,376	—	2,468
Total current assets	60	—	7	521	15,755	—	16,343
Film and television costs	—	—	—	—	7,087	—	7,087
Investments	146	21	108	693	5,963	—	6,931
Investments in and amounts due from subsidiaries eliminated upon consolidation	117,164	142,519	139,528	50,102	113,332	(562,645)	—
Property and equipment, net	551	—	—	—	37,919	—	38,470
Franchise rights	—	—	—	—	59,364	—	59,364
Goodwill	—	—	—	—	36,780	—	36,780
Other intangible assets, net	12	—	—	—	18,121	—	18,133
Other noncurrent assets, net	435	708	—	88	3,437	(314)	4,354
Total assets	\$ 118,368	\$ 143,248	\$ 139,643	\$ 51,404	\$ 297,758	\$ (562,959)	\$ 187,462
Liabilities and Equity							
Accounts payable and accrued expenses related to trade creditors	\$ 16	\$ —	\$ —	\$ —	\$ 6,892	\$ —	\$ 6,908
Accrued participations and residuals	—	—	—	—	1,644	—	1,644
Deferred revenue	—	—	—	—	1,687	—	1,687
Accrued expenses and other current liabilities	1,888	92	333	326	3,981	—	6,620
Current portion of long-term debt	2,810	—	—	4	2,320	—	5,134
Total current liabilities	4,714	92	333	330	16,524	—	21,993
Long-term debt, less current portion	42,428	140	2,100	7,751	7,003	—	59,422
Deferred income taxes	—	285	—	67	24,250	(343)	24,259
Other noncurrent liabilities	2,610	—	—	1,128	7,205	29	10,972
Redeemable noncontrolling interests and redeemable subsidiary preferred stock	—	—	—	—	1,357	—	1,357
Equity:							
Common stock	55	—	—	—	—	—	55
Other shareholders' equity	68,561	142,731	137,210	42,128	240,576	(562,645)	68,561
Total Comcast Corporation shareholders' equity	68,616	142,731	137,210	42,128	240,576	(562,645)	68,616
Noncontrolling interests	—	—	—	—	843	—	843
Total equity	68,616	142,731	137,210	42,128	241,419	(562,645)	69,459
Total liabilities and equity	\$ 118,368	\$ 143,248	\$ 139,643	\$ 51,404	\$ 297,758	\$ (562,959)	\$ 187,462

Item 9: Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A: Controls and Procedures

Comcast Corporation

Conclusions regarding disclosure controls and procedures

Our principal executive and principal financial officers, after evaluating the effectiveness of Comcast's disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) as of the end of the period covered by this report, have concluded that, based on the evaluation of these controls and procedures required by paragraph (b) of Exchange Act Rules 13a-15 or 15d-15, Comcast's disclosure controls and procedures were effective.

Management's annual report on internal control over financial reporting

Refer to Management's Report on Comcast's Internal Control Over Financial Reporting on page 65.

Attestation report of the registered public accounting firm

Refer to Report of Independent Registered Public Accounting Firm on page 66.

Changes in internal control over financial reporting

There were no changes in Comcast's internal control over financial reporting identified in connection with the evaluation required by paragraph (d) of Exchange Act Rules 13a-15 or 15d-15 that occurred during our last fiscal quarter that have materially affected, or are reasonably likely to materially affect, Comcast's internal control over financial reporting, except as noted below. On October 9, 2018, we acquired a controlling interest in Sky. See Note 8 to Comcast's consolidated financial statements for additional information. In connection with the integration of Sky, we are in the process of analyzing and evaluating our internal controls over financial reporting. This process may result in additions or changes to our internal control over financial reporting.

NBCUniversal Media, LLC

Conclusions regarding disclosure controls and procedures

Our principal executive and principal financial officers, after evaluating the effectiveness of NBCUniversal's disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) as of the end of the period covered by this report, have concluded that, based on the evaluation of these controls and procedures required by paragraph (b) of Exchange Act Rules 13a-15 or 15d-15, NBCUniversal's disclosure controls and procedures were effective.

Management's annual report on internal control over financial reporting

Our management is responsible for establishing and maintaining an adequate system of internal control over financial reporting. Our system of internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States.

Our internal control over financial reporting includes those policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect our transactions and dispositions of our assets
- provide reasonable assurance that our transactions are recorded as necessary to permit preparation of our financial statements in accordance with accounting principles generally accepted in the United States, and that our receipts and expenditures are being made only in accordance with authorizations of our management and our directors
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements

Because of its inherent limitations, a system of internal control over financial reporting can provide only reasonable assurance and may not prevent or detect misstatements. Further, because of changes in conditions, effectiveness of internal control over financial

reporting may vary over time. Our system contains self-monitoring mechanisms, and actions are taken to correct deficiencies as they are identified.

Our management conducted an evaluation of the effectiveness of the system of internal control over financial reporting based on the framework in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, our management concluded that NBCUniversal's system of internal control over financial reporting was effective as of December 31, 2018.

Changes in internal control over financial reporting

There were no changes in NBCUniversal's internal control over financial reporting identified in connection with the evaluation required by paragraph (d) of Exchange Act Rules 13a-15 or 15d-15 that occurred during our last fiscal quarter that have materially affected, or are reasonably likely to materially affect, NBCUniversal's internal control over financial reporting.

Item 9B: Other Information

Iran Threat Reduction and Syria Human Rights Act Disclosure

Pursuant to Section 219 of the Iran Threat Reduction and Syria Human Rights Act of 2012, companies are required, among other things, to disclose certain activities, transactions or dealings with the Government of Iran or entities controlled directly or indirectly by the Government of Iran. Disclosure is generally required even where the activities, transactions or dealings are conducted in compliance with applicable laws and regulations and are *de minimis*. As of the date of this report, we are not aware of any activity, transaction or dealing during the year ended December 31, 2018 that requires disclosure under the Act, except with respect to the following:

- Prior to our August 2016 acquisition of DreamWorks Animation, a non-U.S. subsidiary of DreamWorks Animation entered into a licensing agreement in January 2016 that licensed a prior season of a children's animated television series for a three-year, non-cancelable term and for a one-time fee of \$5,200 to a broadcasting company that is owned and controlled by the Government of Iran. The broadcasting company paid the license fee in the first quarter of 2016. We believe that DreamWorks Animation conducted its licensing activity in compliance with applicable laws and that the license is for the permissible exportation of informational materials pursuant to certain statutory and regulatory exemptions from U.S. sanctions.
- Prior to our fourth quarter 2018 acquisition of Sky, a non-U.S. subsidiary of Sky entered into two licensing agreements that licensed some of Sky's owned programming content to a broadcasting company that is owned and controlled by the Government of Iran. The first agreement was entered into in June 2012, and was amended in July 2016, to license 150 hours of programming content for various three-year license terms for a one-time fee of €86,250. The last remaining programming license under this agreement expires in January 2019. The second agreement was entered into in June 2015 to license 80 hours of programming content for various three-year license terms for a one-time fee of €45,700. To date, no programming content has been provided, and the license fee has not been paid, pursuant to the agreement. We believe that Sky conducted its licensing activity in compliance with applicable laws and that the licenses are for the permissible exportation of informational materials pursuant to certain statutory and regulatory exemptions from U.S. sanctions.

Amended and Restated By-Laws

Effective January 30, 2019, Comcast's Board of Directors adopted amendments to the Amended and Restated By-Laws of Comcast, primarily to (i) amend Sections 2.01 and 2.04 to more closely track provisions in the Pennsylvania Business Corporation Law of 1988, including with respect to providing ten days' prior notice for meetings of shareholders that will consider certain fundamental transactions under the Pennsylvania Business Corporation Law and five days' prior notice for all other meetings, and (ii) amend Sections 4.01 and 4.02 to permit the Board to delegate the appointment of certain subordinate officers to officers of the corporation and delete Section 4.07, which had provided for the rank and duties of all officers of the corporation. The foregoing description of the amendments to the By-Laws is qualified in its entirety by reference to the By-Laws, attached hereto as Exhibit 3.1 and incorporated herein by reference.

Part III

Item 10: Directors, Executive Officers and Corporate Governance

Comcast

Except for the information regarding executive officers required by Item 401 of Regulation S-K, we incorporate the information required by this item by reference to our definitive proxy statement for our annual meeting of shareholders presently scheduled to be held in June 2019. We refer to this proxy statement as the 2019 Proxy Statement.

The term of office of each of our executive officers continues until his successor is selected and qualified or until his earlier death, resignation or removal. The following table sets forth information concerning our executive officers, including their ages, positions and tenure, as of the date of this Annual Report on Form 10-K.

Name	Age	Officer Since	Position with Comcast
Brian L. Roberts	59	1986	Chairman and Chief Executive Officer; President
Michael J. Cavanagh	53	2015	Senior Executive Vice President; Chief Financial Officer
Stephen B. Burke	60	1998	Senior Executive Vice President; President and Chief Executive Officer, NBCUniversal Holdings and NBCUniversal
David L. Cohen	63	2002	Senior Executive Vice President
David N. Watson	59	2017	Senior Executive Vice President; President and Chief Executive Officer, Comcast Cable
Arthur R. Block	64	1993	Executive Vice President; General Counsel; Secretary
Daniel C. Murdock	45	2017	Senior Vice President; Chief Accounting Officer and Controller

Brian L. Roberts has served as a director and as our President, Chief Executive Officer and Chairman of the Board for more than five years. As of December 31, 2018, Mr. Roberts had sole voting power over approximately 33 ⅓% of the combined voting power of our two classes of common stock. He is a son of our late founder, Mr. Ralph J. Roberts.

Michael J. Cavanagh has served as the Chief Financial Officer of Comcast Corporation since July 2015. Prior to joining our company, Mr. Cavanagh had been Co-President and Co-Chief Operating Officer for The Carlyle Group, a global investment firm, since 2014. Prior to that, Mr. Cavanagh was the Co-Chief Executive Officer of the Corporate & Investment Bank of JPMorgan Chase & Co. from 2012 until 2014; the Chief Executive Officer of JPMorgan Chase & Co.'s Treasury & Securities Services business from 2010 to 2012; and the Chief Financial Officer of JPMorgan Chase & Co. from 2004 to 2010. Mr. Cavanagh is also a director of Yum Brands, Incorporated.

Stephen B. Burke has served as a Senior Executive Vice President since March 2015 and previously had served as an Executive Vice President for more than five years. In January 2011, Mr. Burke became the President and Chief Executive Officer of NBCUniversal Holdings and NBCUniversal and resigned from his position as our Chief Operating Officer. Mr. Burke also had been the President of Comcast Cable until March 2010. Mr. Burke is also a director of JPMorgan Chase & Co. and Berkshire Hathaway, Incorporated.

David L. Cohen has served as a Senior Executive Vice President since March 2015 and previously had served as an Executive Vice President for more than five years. Mr. Cohen is also a director of the FS Global Credit Opportunities Funds, the FS Global Credit Opportunities Fund A and the FS Global Credit Opportunities Fund D.

David N. Watson has served as a Senior Executive Vice President, Comcast Corporation and President and Chief Executive Officer, Comcast Cable since April 2017 and previously had served as Chief Operating Officer, Comcast Cable for more than five years. Mr. Watson is also a director of Amkor Technology, Inc.

Arthur R. Block has served as an Executive Vice President since March 2015 and previously had served as a Senior Vice President for more than five years. He has been our General Counsel and Secretary for more than five years.

Daniel C. Murdock has served as a Senior Vice President and our Chief Accounting Officer and Controller since March 2017. He has been our Controller since July 2015. Prior to joining our company, Mr. Murdock had been with the U.S. Securities and Exchange Commission where he served as the Deputy Chief Accountant in the agency's Office of the Chief Accountant since 2013. Prior to that, he was Deloitte & Touche's Audit/Industry Professional Practice Director for media and entertainment.

NBCUniversal

Certain information under this Item 10 has been omitted pursuant to General Instruction I(2)(c) to Form 10-K.

The table below sets forth certain information with respect to each of NBCUniversal's executive officers as of December 31, 2018, each of whom has served as such since the close of the NBCUniversal transaction in January 2011, except for Michael J. Cavanagh, who has served since July 2015 and Daniel C. Murdock, who has served since March 2017. The table also sets forth NBCUniversal Holdings' directors as of December 31, 2018.

Name	Title
Brian L. Roberts	Principal Executive Officer
Michael J. Cavanagh	Principal Financial Officer; Director of NBCUniversal Holdings
Stephen B. Burke	Chief Executive Officer and President
David L. Cohen	Senior Executive Vice President; Director of NBCUniversal Holdings
Arthur R. Block	Executive Vice President; Director of NBCUniversal Holdings
Daniel C. Murdock	Senior Vice President; Principal Accounting Officer

For the year ended December 31, 2018, NBCUniversal reimbursed Comcast \$55 million for direct services provided by our executive officers.

Item 11: Executive Compensation

Comcast incorporates the information required by this item by reference to its 2019 Proxy Statement.

This information is omitted for NBCUniversal pursuant to General Instruction I(2)(c) to Form 10-K.

Item 12: Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Comcast incorporates the information required by this item by reference to its 2019 Proxy Statement.

This information is omitted for NBCUniversal pursuant to General Instruction I(2)(c) to Form 10-K.

Item 13: Certain Relationships and Related Transactions, and Director Independence

Comcast incorporates the information required by this item by reference to its 2019 Proxy Statement.

This information is omitted for NBCUniversal pursuant to General Instruction I(2)(c) to Form 10-K.

Item 14: Principal Accountant Fees and Services

Comcast incorporates the information required by this item by reference to its 2019 Proxy Statement.

NBCUniversal

The Audit Committee of Comcast's Board of Directors appointed Deloitte & Touche LLP as NBCUniversal's independent registered public accounting firm for the years ended December 31, 2018 and 2017. Set forth below are the fees paid or accrued for the services of Deloitte & Touche LLP, the member firms of Deloitte Touche Tohmatsu and their respective affiliates in 2018 and 2017.

(in millions)	2018	2017
Audit fees	\$12.8	\$13.2
Audit-related fees	0.7	0.8
Tax fees	0.2	0.3
All other fees	0.1	0.1
	\$13.8	\$14.4

Audit fees in 2018 and 2017 consisted of fees paid or accrued for services rendered to NBCUniversal and its subsidiaries for the audits of its annual financial statements, reviews of its quarterly financial statements and audit services provided in connection with other statutory or regulatory filings.

Audit-related fees in 2018 and 2017 consisted primarily of fees paid or accrued for due diligence services and attestation services related to contractual and regulatory compliance, and audits associated with employee benefit plans in 2017.

Tax fees in 2018 and 2017 consisted of fees paid or accrued for domestic and foreign tax compliance services.

All other fees in 2018 and 2017 primarily consisted of fees paid or accrued for subscription services.

Preapproval Policy of Audit Committee of Services Performed by Independent Auditors

As a consolidated subsidiary of Comcast, NBCUniversal is subject to the policies of Comcast's Audit Committee regarding the preapproval of services provided by the independent auditors. This policy requires that the Audit Committee preapprove all audit and non-audit services performed by the independent auditors to assure that the services do not impair the auditors' independence. Unless a type of service has received general preapproval, it requires separate preapproval by the Audit Committee. Even if a service has received general preapproval, if the fee associated with the service exceeds \$1 million in a single engagement or series of related engagements, it requires separate preapproval. The Audit Committee has delegated its preapproval authority to its Chair.

Part IV

Item 15: Exhibits and Financial Statement Schedules

Comcast

(a) Comcast's consolidated financial statements are filed as a part of this report on Form 10-K in Item 8, Financial Statements and Supplementary Data, and a list of Comcast's consolidated financial statements are found on page 64 of this report. Schedule II, Valuation and Qualifying Accounts, is found on page 155 of this report; all other financial statement schedules are omitted because the required information is not applicable, or because the information required is included in the consolidated financial statements and notes thereto.

(b) Exhibits required to be filed by Item 601 of Regulation S-K (all of which are under Commission File No. 001-32871, except as otherwise noted):

- 2.1 Agreement for the Sale and Purchase of Share Capital of Sky plc by and among Comcast Bidco Limited, BSKYB Holdco, Inc. and 21st Century Fox UK Nominees Limited, dated as of October 3, 2018 (incorporated by reference to Exhibit 2.1 to Comcast's Current Report on Form 8-K filed on October 4, 2018).
- 3.1 Amended and Restated Articles of Incorporation of Comcast Corporation (incorporated by reference to Exhibit 3.1 to Comcast's Current Report on Form 8-K filed on December 15, 2015).
- 3.2 Amended and Restated By-Laws of Comcast Corporation
- 4.1 Specimen Class A Common Stock Certificate (incorporated by reference to Exhibit 4.1 to Comcast's Annual Report on Form 10-K for the year ended December 31, 2002).
- 4.2 Indenture, dated January 7, 2003, between Comcast Corporation, the subsidiary guarantor party thereto, and The Bank of New York Mellon (f/k/a The Bank of New York), as trustee (incorporated by reference to Exhibit 4.4 to Comcast's Annual Report on Form 10-K for the year ended December 31, 2008).
- 4.3 First Supplemental Indenture, dated March 25, 2003, to the Indenture between Comcast Corporation, the subsidiary guarantors party thereto, and The Bank of New York Mellon (f/k/a The Bank of New York), as trustee, dated January 7, 2003 (incorporated by reference to Exhibit 4.5 to Comcast's Annual Report on Form 10-K for the year ended December 31, 2008).
- 4.4 Second Supplemental Indenture, dated August 31, 2009, to the Indenture between Comcast Corporation, the subsidiary guarantors party thereto, and The Bank of New York Mellon, as Trustee, dated January 7, 2003, as supplemented by a First Supplemental Indenture dated March 25, 2003 (incorporated by reference to Exhibit 4.1 to Comcast's Current Report on Form 8-K filed on September 2, 2009).
- 4.5 Third Supplemental Indenture, dated March 27, 2013, to the Indenture between Comcast Corporation, the subsidiary guarantors party thereto, and The Bank of New York Mellon (f/k/a The Bank of New York), as trustee, dated January 7, 2003, as supplemented by a First Supplemental Indenture dated March 25, 2003 and a second Supplemental Indenture dated August 31, 2009 (incorporated by reference to Exhibit 4.4 to Comcast's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013).
- 4.6 Fourth Supplemental Indenture, dated October 1, 2015, to the Indenture dated January 7, 2003 between Comcast Corporation, the subsidiary guarantors party thereto, and The Bank of New York Mellon (f/k/a The Bank of New York), as trustee, as supplemented by a First Supplemental Indenture dated March 25, 2003, a second Supplemental Indenture dated August 31, 2009 and a Third Supplemental Indenture dated March 27, 2013 (incorporated by reference to Exhibit 4.1 to Comcast's Quarterly Report on Form 10-Q for the quarter ended September 30, 2015).
- 4.7 Senior Indenture dated September 18, 2013, among Comcast Corporation, the guarantors party thereto and The Bank of New York Mellon, as trustee (incorporated by reference to Exhibit 4.3 to Comcast's Registration Statement on Form S-3 filed September 18, 2013).
- 4.8 First Supplemental Indenture dated as of November 17, 2015, to the Senior Indenture dated September 18, 2013, among Comcast Corporation, the guarantors party thereto, and The Bank of New York Mellon, as trustee (incorporated by reference to Exhibit 4.4 to Post Effective Amendment No. 2 to Comcast's Registration Statement on Form S-3 filed November 23, 2015).
- 4.9 Indenture, dated as of April 30, 2010, between NBC Universal, Inc. (n/k/a NBCUniversal Media, LLC) and The Bank of New York Mellon, as trustee (incorporated by reference to Exhibit 4 to the Registration Statement on Form S-4 of NBCUniversal Media, LLC (Commission File No. 333-174175) filed on May 13, 2011).

- 4.10 First Supplemental Indenture, dated March 27, 2013, to the Indenture between NBCUniversal Media, LLC (f/k/a NBC Universal, Inc.) and The Bank of New York Mellon, as trustee, dated April 30, 2010 (incorporated by reference to Exhibit 4.3 to Comcast's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013).
- 4.11 Second Supplemental Indenture, dated October 1, 2015, to the Indenture dated April 30, 2010 between NBC Universal, Inc. (n/k/a NBCUniversal Media, LLC) and The Bank of New York Mellon, as trustee, as supplemented by a First Supplemental Indenture dated March 27, 2013 (incorporated by reference to Exhibit 4.2 to Comcast's Quarterly Report on Form 10-Q for the quarter ended September 30, 2015).
- 4.12 Indenture, dated March 19, 2013, among NBCUniversal Enterprise, Inc. (f/k/a Navy Holdings, Inc.), Comcast Corporation, the Cable Guarantors party thereto, and The Bank of New York Mellon, as trustee (incorporated by reference to Exhibit 4.1 to Comcast's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013).
Certain instruments defining the rights of holders of long-term obligation of the registrant and certain of its subsidiaries (the total amount of securities authorized under each of which does not exceed ten percent of the total assets of the registrant and its subsidiaries on a consolidated basis), are omitted pursuant to Item 601(b)(4)(iii)(A) of Regulation S-K. We agree to furnish copies of any such instruments to the SEC upon request.
- 4.13 Trust Deed dated September 5, 2014 among BSKYB Finance UK plc, British Sky Broadcasting Group plc, the initial guarantors party thereto and BNY Mellon Corporate Trustee Services Limited, as trustee.
- 4.14 Supplemental Trust Deed dated March 18, 2015 among Sky Group Finance plc (f/k/a BSKYB Finance UK plc), Sky plc (f/k/a British Sky Broadcasting Group plc), the initial guarantors party thereto and BNY Mellon Corporate Trustee Services Limited, as trustee.
- 10.1 Credit Agreement dated as of May 26, 2016, among Comcast Corporation, the financial institutions party thereto, JPMorgan Chase Bank, N.A., as administrative agent, Citibank, N.A., as syndication agent, Morgan Stanley MUFG Partners, LLC, Wells Fargo Bank, National Association and Mizuho Bank, Ltd., as co-documentation agents (incorporated by reference to Exhibit 10.1 to Comcast's Current Report on Form 8-K filed on May 31, 2016).
- 10.2 Second Amended and Restated Certificate of Incorporation of NBCUniversal Enterprise, Inc. (f/k/a/ Navy Holdings, Inc.), dated March 19, 2013 (incorporated by reference to Exhibit 10.3 to Comcast's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013).
- 10.3 Certificate of Designations for Series A Cumulative Preferred Stock of NBCUniversal Enterprise, Inc. (f/k/a/ Navy Holdings, Inc.), dated March 19, 2013 (incorporated by reference to Exhibit 10.4 to Comcast's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013).
- 10.4 Amendment to Certificate of Designations for Series A Cumulative Preferred Stock of NBCUniversal Enterprise, Inc. dated March 19, 2013 (incorporated by reference to Exhibit 10.5 to Comcast's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013).
- 10.5 Term Loan Credit Agreement among Comcast, the financial institutions party thereto, Bank of America, N.A., as administrative agent, Wells Fargo Bank, National Association, as syndication agent, and Merrill Lynch, Pierce, Fenner & Smith Incorporated and Wells Fargo Securities LLC, as joint lead arrangers and joint bookrunners, dated April 25, 2018 (incorporated by reference to Exhibit 10.1 to Comcast's Current Report on Form 8-K filed on April 25, 2018).
- 10.6 364-day Bridge Loan Credit Agreement among Comcast, the financial institutions party thereto, Bank of America, N.A., as administrative agent, Wells Fargo Bank, National Association, as syndication agent, and Merrill Lynch, Pierce, Fenner & Smith Incorporated and Wells Fargo Securities LLC as joint lead arrangers and joint bookrunners, dated April 25, 2018 (incorporated by reference to Exhibit 10.2 to Comcast's Current Report on Form 8-K filed on April 25, 2018).
- 10.7 Amendment No. 1 dated April 27, 2018, to Credit Agreement dated as of May 26, 2016, among Comcast Corporation, the financial institutions party thereto, JPMorgan Chase Bank, N.A., as administrative agent, Citibank, N.A., as syndication agent, Morgan Stanley MUFG Partners, LLC, Wells Fargo Bank, National Association and Mizuho Bank, Ltd., as co-documentation agents (incorporated by reference to Exhibit 10.1 to Comcast's Current Report on Form 8-K filed on April 30, 2018).
- 10.8 Term Loan Credit Agreement among Comcast, the financial institutions party thereto, Bank of America, N.A., as administrative agent, Wells Fargo Bank, National Association, as syndication agent, and Merrill Lynch, Pierce, Fenner & Smith Incorporated and Wells Fargo Securities LLC, as joint lead arrangers and joint bookrunners, dated August 22, 2018 (incorporated by reference to Exhibit 10.1 to Comcast's Current Report on Form 8-K filed on August 22, 2018).
- 10.9 Amendment No. 1 to 364-Day Bridge Credit Agreement among Comcast, the financial institutions party thereto, and Bank of America, N.A., as administrative agent, and Wells Fargo Bank, National Association, as syndication agent, dated as of August 22, 2018 (incorporated by reference to Exhibit 10.2 to Comcast's Current Report on Form 8-K filed on August 22, 2018).

- 10.10 Comcast Revolving Credit Agreement Increased Revolving Commitment Activation Notice, dated September 21, 2018 (incorporated by reference to Exhibit 10.1 to Comcast's Current Report on Form 8-K filed on September 24, 2018).
- 10.11 Comcast Revolving Credit Agreement New Lender Supplement, dated September 21, 2018 (incorporated by reference to Exhibit 10.2 to Comcast's Current Report on Form 8-K filed on September 24, 2018).
- 10.12 Amendment No. 1 to Term Loan Credit Agreement, dated September 23, 2018 (incorporated by reference to Exhibit 10.3 to Comcast's Current Report on Form 8-K filed on September 24, 2018).
- 10.13* Comcast Corporation 2003 Stock Option Plan, as amended and restated December 18, 2018.
- 10.14* Comcast Corporation 2002 Deferred Compensation Plan, as amended and restated effective February 10, 2009 (incorporated by reference to Exhibit 10.5 to Comcast's Annual Report on Form 10-K for the year ended December 31, 2009).
- 10.15* Comcast Corporation 2005 Deferred Compensation Plan, as amended and restated effective October 17, 2018.
- 10.16* Comcast Corporation 2002 Restricted Stock Plan, as amended and restated effective December 18, 2018.
- 10.17* Comcast Corporation 2006 Cash Bonus Plan, as amended and restated effective February 18, 2015 (incorporated by reference to Exhibit 10.11 to Comcast's Annual Report on Form 10-K for the year ended December 31, 2015).
- 10.18* Comcast Corporation 2002 Non-Employee Director Compensation Plan, as amended and restated effective December 5, 2017.
- 10.19* Comcast Corporation 2002 Employee Stock Purchase Plan, as amended and restated effective February 22, 2016 (incorporated by reference to Appendix C to our Definitive Proxy Statement on Schedule 14A filed on April 8, 2016).
- 10.20* Comcast-NBCUniversal 2011 Employee Stock Purchase Plan, as amended and restated effective February 22, 2016 (incorporated by reference to Appendix D to our Definitive Proxy Statement on Schedule 14A filed on April 8, 2016).
- 10.21* Employment Agreement between Comcast Corporation and Brian L. Roberts, dated as of June 1, 2005 (incorporated by reference to Exhibit 99.1 to Comcast's Current Report on Form 8-K filed on August 5, 2005).
- 10.22* Amendment to Employment Agreement between Comcast Corporation and Brian L. Roberts, dated as of February 13, 2009 (incorporated by reference to Exhibit 99.1 to Comcast's Current Report on Form 8-K filed on February 13, 2009).
- 10.23* Amendment No. 2 to Employment Agreement between Comcast Corporation and Brian L. Roberts, dated as of December 31, 2009 (incorporated by reference to Exhibit 10.23 to Comcast's Annual Report on Form 10-K for the year ended December 31, 2009).
- 10.24* Amendment No. 3 to Employment Agreement between Comcast Corporation and Brian L. Roberts, dated as of June 30, 2010 (incorporated by reference to Exhibit 99.1 to Comcast's Current Report on Form 8-K filed on July 7, 2010).
- 10.25* Amendment No. 4 to Employment Agreement between Comcast Corporation and Brian L. Roberts, dated as of December 31, 2010 (incorporated by reference to Exhibit 10.25 to Comcast's Annual Report on Form 10-K for the year ended December 31, 2010).
- 10.26* Amendment No. 5 to Employment Agreement between Comcast Corporation and Brian L. Roberts, dated as of June 30, 2011 (incorporated by reference to Exhibit 99.1 to Comcast's Current Report on Form 8-K filed on July 1, 2011).
- 10.27* Amendment No. 6 to Employment Agreement between Comcast Corporation and Brian L. Roberts, dated as of December 15, 2011 (incorporated by reference to Exhibit 10.21 to Comcast's Annual Report on Form 10-K for the year ended December 31, 2011).
- 10.28* Amendment No. 7 to Employment Agreement between Comcast Corporation and Brian L. Roberts, effective as of June 30, 2012 (incorporated by reference to Exhibit 99.1 to Comcast's Current Report on Form 8-K filed on September 14, 2012).
- 10.29* Amendment No. 8 to Employment Agreement between Comcast Corporation and Brian L. Roberts, dated as of December 14, 2012 (incorporated by reference to Exhibit 10.23 to Comcast's Annual Report on Form 10-K for the year ended December 31, 2012).
- 10.30* Amendment No. 10 to Employment Agreement with Brian L. Roberts, effective as of June 30, 2013 (incorporated by reference to Exhibit 99.1 to Comcast's Current Report on Form 8-K filed on July 24, 2013).
- 10.31* Amendment No. 11 to Employment Agreement with Brian L. Roberts, effective as of December 18, 2013 (incorporated by reference to Exhibit 10.29 to Comcast's Annual Report on Form 10-K filed on February 12, 2014).

- 10.32* Amendment No. 12 to Employment Agreement with Brian L. Roberts, effective as of June 30, 2014 (incorporated by reference to Exhibit 99.1 to Comcast's Current Report on Form 8-K filed on July 1, 2014).
- 10.33* Amendment No. 13 to Employment Agreement with Brian L. Roberts, effective as of December 9, 2014 (incorporated by reference to Exhibit 10.30 to Comcast's Annual Report on Form 10-K for the year ended December 31, 2014).
- 10.34* Amendment No. 14 to Employment Agreement with Brian L. Roberts, dated June 30, 2015 (incorporated by reference to Exhibit 99.1 to Comcast's Current Report on Form 8-K filed on July 7, 2015).
- 10.35* Amendment No. 15 to Employment Agreement with Brian L. Roberts, dated December 17, 2015 (incorporated by reference to Exhibit 10.31 to Comcast's Annual Report on Form 10-K for the year ended December 31, 2015).
- 10.36* Amendment No. 16 to Employment Agreement with Brian L. Roberts, dated June 30, 2016 (incorporated by reference to Exhibit 99.1 to Comcast's Current Report on Form 8-K filed on July 1, 2016).
- 10.37* Amendment No. 17 to Employment Agreement with Brian L. Roberts, dated December 12, 2016 (incorporated by reference to Exhibit 10.30 to Comcast's Annual Report on Form 10-K for the year ended December 31, 2016).
- 10.38* Amendment No. 18 to Employment Agreement with Brian L. Roberts, dated June 30, 2017 (incorporated by reference to Exhibit 10.1 to Comcast's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017).
- 10.39* Employment Agreement with Brian L. Roberts, dated July 26, 2017 (incorporated by reference to Exhibit 10.2 to Comcast's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017).
- 10.40* Employment Agreement between Comcast Corporation and Stephen B. Burke, dated as of December 16, 2009 (incorporated by reference to Exhibit 99.1 to Comcast's Current Report on Form 8-K filed on December 22, 2009).
- 10.41* Amendment No. 2 to Employment Agreement with Stephen B. Burke, dated as of August 16, 2013 (incorporated by reference to Exhibit 99.1 to Comcast's Current Report on Form 8-K filed on August 16, 2013).
- 10.42* Amendment No. 3 to Employment Agreement with Stephen B. Burke dated as of July 25, 2016 (incorporated by reference to Exhibit 99.1 to Comcast's Current Report on Form 8-K filed on July 28, 2016).
- 10.43* Employment Agreement between Comcast Corporation and David L. Cohen, dated as of October 23, 2015 (incorporated by reference to Exhibit 10.1 to Comcast's Quarterly Report on Form 10-Q for the quarter ended September 30, 2015).
- 10.44* Employment Agreement between Comcast Corporation and Neil Smit, dated as of December 22, 2014 (incorporated by reference to Exhibit 99.1 to Comcast's Current Report on Form 8-K filed on December 23, 2014).
- 10.45* Employment Agreement between Comcast Corporation and Neil Smit, dated as of April 25, 2017 (incorporated by reference to Exhibit 10.1 to Comcast's Quarterly Report on Form 10-Q for the quarter ended March 31, 2017).
- 10.46* Form of Amendment, dated as of December 16, 2008, to the Employment Agreement with Brian L. Roberts (incorporated by reference to Exhibit 10.38 to Comcast's Annual Report on Form 10-K for the year ended December 31, 2008).
- 10.47* Form of Amendment, dated as of December 14, 2012, to the Employment Agreements with Brian L. Roberts and Stephen B. Burke (incorporated by reference to Exhibit 10.41 to Comcast's Annual Report on Form 10-K for the year ended December 31, 2012).
- 10.48* Employment Agreement dated May 10, 2015 between Comcast Corporation and Michael J. Cavanagh (incorporated by reference to Exhibit 99.1 to Comcast's Current Report on Form 8-K filed on May 11, 2015).
- 10.49* Employment Agreement dated December 21, 2018 between Comcast Corporation and Michael J. Cavanagh (incorporated by reference to Exhibit 99.1 to Comcast's Current Report on Form 8-K filed on December 21, 2018).
- 10.50* Employment Agreement dated April 2, 2018 between Comcast Corporation and David N. Watson (incorporated by reference to Exhibit 10.4 to Comcast's Quarterly Report on Form 10-Q for the quarter ended June 30, 2018).
- 10.51* Form of Non-Qualified Stock Option under the Comcast Corporation 2003 Stock Option Plan (incorporated by reference to Exhibit 10.40 to Comcast's Annual Report on Form 10-K for the year ended December 31, 2008).
- 10.52* Form of Non-Qualified Stock Option under the Comcast Corporation 2003 Stock Option Plan (incorporated by reference to Exhibit 10.2 to Comcast's Quarterly Report on Form 10-Q for the quarter ended March 31, 2016).
- 10.53* Form of Non-Qualified Stock Option under the Comcast Corporation 2003 Stock Option Plan (incorporated by reference to Exhibit 10.42 to Comcast's Annual Report on Form 10-K for the year ended December 31, 2016).

- 10.54* Form of Non-Qualified Stock Option under the Comcast Corporation 2003 Stock Option Plan (incorporated by reference to Exhibit 10.1 to Comcast's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018).
- 10.55* Form of Restricted Stock Unit Award under the Comcast Corporation 2002 Restricted Stock Plan (incorporated by reference to Exhibit 10.6 to Comcast's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013).
- 10.56* Form of Restricted Stock Unit Award under the Comcast Corporation 2002 Restricted Stock Plan (incorporated by reference to Exhibit 10.1 to Comcast's Quarterly Report on Form 10-Q for the quarter ended March 31, 2016).
- 10.57* Form of Restricted Stock Unit Award and Long-Term Incentive Awards Summary Schedule under the Comcast Corporation 2002 Restricted Stock Plan (incorporated by reference to Exhibit 10.2 to Comcast's Quarterly Report on Form 10-Q for the quarter ended September 30, 2015).
- 10.58* Form of Restricted Stock Unit Award and Long-Term Incentive Awards Summary Schedule under the Comcast Corporation 2002 Restricted Stock Plan (incorporated by reference to Exhibit 10.2 to Comcast's Quarterly Report on Form 10-Q for the quarter ended March 31, 2017).
- 10.59* Form of Restricted Stock Unit Award and Long-Term Incentive Awards Summary Schedule under the Comcast Corporation 2002 Restricted Stock Plan (incorporated by reference to Exhibit 10.5 to Comcast's Quarterly Report on Form 10-Q for the quarter ended June 30, 2018).
- 10.60* Form of Restricted Stock Unit Award under the Comcast Corporation 2002 Restricted Stock Plan (incorporated by reference to Exhibit 10.2 to Comcast's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018).
- 10.61* Form of Long-Term Incentive Awards Summary Schedule (incorporated by reference to Exhibit 10.3 to Comcast's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018).
- 10.62* Form of Airplane Time Sharing Agreement (incorporated by reference to Exhibit 10.60 to Comcast's Annual Report on Form 10-K for the year ended December 31, 2014).
- 10.63* Form of Director Indemnification Agreement (incorporated by reference to Exhibit 10.3 to Comcast's Quarterly Report on Form 10-Q for the quarter ended June 30, 2009).
- 10.64 Second Amended and Restated Shareholders Agreement, dated as of January 10, 2019, among Atairos Group, Inc., Comcast AG Holdings, LLC, Comcast Spectacor Ventures, LLC, Atairos Partners, L.P., Atairos Management, L.P. and Comcast Corporation.
- 10.65 Wireless Operational Cooperation Agreement dated as of May 5, 2017 between Comcast Corporation and Charter Communications, Inc. (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed on May 8, 2017).
- 10.66 Consultant Agreement, dated as of January 20, 1987, between Steven Spielberg and Universal City Florida Partners (incorporated by reference to Exhibit 10.49 to the Registration Statement on Form S-4 of Universal City Development Partners, Ltd. and UCDP Finance, Inc. filed on January 20, 2010 (File No. 333-164431)).
- 10.67 Amendment dated February 5, 2001 to the Consultant Agreement dated as of January 20, 1987, between the Consultant and Universal City Florida Partners (incorporated by reference to Exhibit 10.50 to the Registration Statement on Form S-4 of Universal City Development Partners, Ltd. and UCDP Finance, Inc. filed on January 20, 2010 (File No. 333-164431)).
- 10.68 Amendment to the Consultant Agreement, dated as of October 18, 2009, between Steven Spielberg, Diamond Lane Productions, Inc. and Universal City Development Partners, Ltd. (incorporated by reference to Exhibit 10.52 to the Registration Statement on Form S-4 of Universal City Development Partners, Ltd. and UCDP Finance, Inc. filed on January 20, 2010 (File No. 333-164431)).
- 10.69 Letter Agreement dated July 15, 2003, among Diamond Lane Productions, Vivendi Universal Entertainment LLLP and Universal City Development Partners, Ltd. (incorporated by reference to Exhibit 10.51 to the Registration Statement on Form S-4 of Universal City Development Partners, Ltd. and UCDP Finance, Inc. filed on January 20, 2010 (File No. 333-164431)).
- 21.1 List of subsidiaries.
- 23.1 Consent of Deloitte & Touche LLP.
- 31.1 Certification of Chief Executive Officer and Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 32.1 Certification of Chief Executive Officer and Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

101 The following financial statements from Comcast Corporation's Annual Report on Form 10-K for the year ended December 31, 2018, filed with the Securities and Exchange Commission on January 31, 2019, formatted in XBRL (eXtensible Business Reporting Language): (1) the Consolidated Statement of Income; (2) the Consolidated Statement of Comprehensive Income; (3) the Consolidated Statement of Cash Flows; (4) the Consolidated Balance Sheet; (5) the Consolidated Statement of Changes in Equity; and (6) the Notes to Consolidated Financial Statements.

* Constitutes a management contract or compensatory plan or arrangement.

NBCUniversal

(a) NBCUniversal's consolidated financial statements are filed as a part of this report on Form 10-K and a list of the consolidated financial statements are found on page 128 of this report. Schedule II - Valuation and Qualifying Accounts is found on page 155 of this report; all other financial statement schedules are omitted because the required information is not applicable, or because the information required is included in the consolidated financial statements and notes thereto.

(b) Exhibits required to be filed by Item 601 of Regulation S-K:

- 3.1 Certificate of Formation of NBCUniversal Media, LLC (incorporated by reference to Exhibit 3.1 to NBCUniversal's Registration Statement on Form S-4 filed on May 13, 2011).
- 3.2 Certificate of Amendment to Certificate of Formation of NBCUniversal Media, LLC (incorporated by reference to Exhibit 3.2 to NBCUniversal's Registration Statement on Form S-4 filed on August 25, 2011).
- 3.3 Limited Liability Company Agreement of NBCUniversal Media, LLC (incorporated by reference to Exhibit 3.2 to Amendment No. 2 to NBCUniversal's Registration Statement on Form S-4 filed on July 12, 2011).
- 3.4 First Amendment to Limited Liability Company Agreement of NBCUniversal Media, LLC
- 4.1 Indenture, dated as of April 30, 2010 between NBC Universal, Inc. (n/k/a NBCUniversal Media, LLC) and The Bank of New York Mellon, as Trustee (incorporated by reference to Exhibit 4 to NBCUniversal's Registration Statement on Form S-4 filed on May 13, 2011).
- 4.2 First Supplemental Indenture, dated March 27, 2013, to the Indenture between NBCUniversal Media, LLC (f/k/a NBC Universal, Inc.) and The Bank of New York Mellon, as trustee, dated April 30, 2010 (incorporated by reference to Exhibit 4.3 of the Quarterly Report on Form 10-Q of Comcast Corporation for the quarter ended March 31, 2013).
- 4.3 Second Supplemental Indenture, dated October 1, 2015, to the Indenture dated April 30, 2010 between NBC Universal, Inc. (n/k/a NBCUniversal Media, LLC) and The Bank of New York Mellon, as trustee, as supplemented by a First Supplemental Indenture dated March 27, 2013 (incorporated by reference to Exhibit 4.2 of the Quarterly Report on Form 10-Q of Comcast Corporation for the quarter ended September 30, 2015).
- 4.4 Indenture, dated January 7, 2003, between Comcast Corporation, the subsidiary guarantor party thereto, and The Bank of New York Mellon (f/k/a The Bank of New York), as trustee (incorporated by reference to Exhibit 4.4 to the Annual Report on Form 10-K of Comcast Corporation for the year ended December 31, 2008).
- 4.5 First Supplemental Indenture, dated March 25, 2003, to the Indenture between Comcast Corporation, the subsidiary guarantors party thereto, and The Bank of New York Mellon (f/k/a The Bank of New York), as trustee, dated January 7, 2003 (incorporated by reference to Exhibit 4.5 to the Annual Report on Form 10-K of Comcast Corporation for the year ended December 31, 2008).
- 4.6 Second Supplemental Indenture, dated August 31, 2009, to the Indenture between Comcast Corporation, the subsidiary guarantors party thereto, and The Bank of New York Mellon, as Trustee, dated January 7, 2003, as supplemented by a First Supplemental Indenture dated March 25, 2003 (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K of Comcast Corporation filed on September 2, 2009).
- 4.7 Third Supplemental Indenture, dated March 27, 2013, to the Indenture between Comcast Corporation, the subsidiary guarantors party thereto, and The Bank of New York Mellon (f/k/a The Bank of New York), as trustee, dated January 7, 2003, as supplemented by a First Supplemental Indenture dated March 25, 2003 and a Second Supplemental Indenture dated August 31, 2009 (incorporated by reference to Exhibit 4.4 of the Quarterly Report on Form 10-Q of Comcast Corporation for the quarter ended March 31, 2013).
- 4.8 Fourth Supplemental Indenture, dated October 1, 2015, to the Indenture dated January 7, 2003 between Comcast Corporation, the subsidiary guarantors party thereto, and The Bank of New York Mellon (f/k/a The Bank of New York), as trustee, as supplemented by a First Supplemental Indenture dated March 25, 2003, a second Supplemental Indenture dated August 31, 2009 and a Third Supplemental Indenture dated March 27, 2013 (incorporated by reference to Exhibit 4.1 of the Quarterly Report on Form 10-Q of Comcast Corporation for the quarter ended September 30, 2015).
- 4.9 Senior Indenture dated September 18, 2013, among Comcast Corporation, the guarantors party thereto and The Bank of New York Mellon, as trustee (incorporated by reference to Exhibit 4.3 to Comcast's Registration Statement on Form S-3 filed September 18, 2013).

- 4.10 First Supplemental Indenture dated as of November 17, 2015, to the Senior Indenture dated September 18, 2013, among Comcast Corporation, the guarantors party thereto, and The Bank of New York Mellon, as trustee (incorporated by reference to Exhibit 4.4 to Post Effective Amendment No. 2 to Comcast's Registration Statement on Form S-3 filed November 23, 2015).
- 10.1 Second Amended and Restated Limited Liability Company Agreement of NBCUniversal, LLC, dated March 19, 2013 (incorporated by reference to Exhibit 10.2 of the Quarterly Report on Form 10-Q of Comcast Corporation for the quarter ended March 31, 2013).
- 10.2 Credit Agreement dated as of May 26, 2016, among Comcast Corporation, the financial institutions party thereto, JPMorgan Chase Bank, N.A., as administrative agent, Citibank, N.A., as syndication agent, Morgan Stanley MUFG Partners, LLC, Wells Fargo Bank, National Association and Mizuho Bank, Ltd., as co-documentation agents (incorporated by reference to Exhibit 10.1 to Comcast's Current Report on Form 8-K filed on May 31, 2016).
- 10.3 Consultant Agreement, dated as of January 20, 1987, between Steven Spielberg and Universal City Florida Partners (incorporated by reference to Exhibit 10.49 to the Registration Statement on Form S-4 of Universal City Development Partners, Ltd. and UCDP Finance, Inc. filed on January 20, 2010 (File No. 333-164431)).
- 10.4 Amendment dated February 5, 2001 to the Consultant Agreement dated as of January 20, 1987, between the Consultant and Universal City Florida Partners (incorporated by reference to Exhibit 10.50 to the Registration Statement on Form S-4 of Universal City Development Partners, Ltd. and UCDP Finance, Inc. filed on January 20, 2010 (File No. 333-164431)).
- 10.5 Amendment to the Consultant Agreement, dated as of October 18, 2009, between Steven Spielberg, Diamond Lane Productions, Inc. and Universal City Development Partners, Ltd. (incorporated by reference to Exhibit 10.52 to the Registration Statement on Form S-4 of Universal City Development Partners, Ltd. and UCDP Finance, Inc. filed on January 20, 2010 (File No. 333-164431)).
- 10.6 Letter Agreement dated July 15, 2003, among Diamond Lane Productions, Vivendi Universal Entertainment LLLP and Universal City Development Partners, Ltd. (incorporated by reference to Exhibit 10.51 to the Registration Statement on Form S-4 of Universal City Development Partners, Ltd. and UCDP Finance, Inc. filed on January 20, 2010 (File No. 333-164431)).
- 10.7 Loan Agreement dated as of May 1, 2017, among USJ Co., Ltd., the financial institutions party thereto (the "lenders") and Sumitomo Mitsui Banking Corporation, as agent (incorporated by reference to Exhibit 10.1 to NBCUniversal's Current Report on Form 8-K filed on May 3, 2017).
- 10.8 Term Loan Credit Agreement among Comcast, the financial institutions party thereto, Bank of America, N.A., as administrative agent, Wells Fargo Bank, National Association, as syndication agent, and Merrill Lynch, Pierce, Fenner & Smith Incorporated and Wells Fargo Securities LLC, as joint lead arrangers and joint bookrunners, dated April 25, 2018 (incorporated by reference to Exhibit 10.1 to NBCUniversal's Current Report on Form 8-K filed on April 25, 2018).
- 10.9 364-day Bridge Loan Credit Agreement among Comcast, the financial institutions party thereto, Bank of America, N.A., as administrative agent, Wells Fargo Bank, National Association, as syndication agent, and Merrill Lynch, Pierce, Fenner & Smith Incorporated and Wells Fargo Securities LLC as joint lead arrangers and joint bookrunners, dated April 25, 2018 (incorporated by reference to Exhibit 10.2 to NBCUniversal's Current Report on Form 8-K filed on April 25, 2018).
- 10.10 Amendment No. 1 dated April 27, 2018, to Credit Agreement dated as of May 26, 2016, among Comcast Corporation, the financial institutions party thereto, JPMorgan Chase Bank, N.A., as administrative agent, Citibank, N.A., as syndication agent, Morgan Stanley MUFG Partners, LLC, Wells Fargo Bank, National Association and Mizuho Bank, Ltd., as co-documentation agents (incorporated by reference to Exhibit 10.1 to NBCUniversal's Current Report on Form 8-K filed on April 30, 2018).
- 10.11 Term Loan Credit Agreement among Comcast, the financial institutions party thereto, Bank of America, N.A., as administrative agent, Wells Fargo Bank, National Association, as syndication agent, and Merrill Lynch, Pierce, Fenner & Smith Incorporated and Wells Fargo Securities LLC, as joint lead arrangers and joint bookrunners, dated August 22, 2018 (incorporated by reference to Exhibit 10.1 to NBCUniversal's Current Report on Form 8-K filed on August 22, 2018).
- 10.12 Amendment No. 1 to 364-Day Bridge Credit Agreement among Comcast, the financial institutions party thereto, and Bank of America, N.A., as administrative agent, and Wells Fargo Bank, National Association, as syndication agent, dated as of August 22, 2018 (incorporated by reference to Exhibit 10.2 to NBCUniversal's Current Report on Form 8-K filed on August 22, 2018).

- 10.13 Comcast Revolving Credit Agreement Increased Revolving Commitment Activation Notice, dated September 21, 2018 (incorporated by reference to Exhibit 10.1 to NBCUniversal's Current Report on Form 8-K filed on September 24, 2018).
- 10.14 Comcast Revolving Credit Agreement New Lender Supplement, dated September 21, 2018 (incorporated by reference to Exhibit 10.2 to NBCUniversal's Current Report on Form 8-K filed on September 24, 2018).
- 10.15 Amendment No. 1 to Term Loan Credit Agreement, dated September 23, 2018 (incorporated by reference to Exhibit 10.3 to NBCUniversal's Current Report on Form 8-K filed on September 24, 2018).
- 23.2 Consent of Deloitte & Touche LLP.
- 31.2 Certification of Principal Executive Officer and Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 32.2 Certification of Principal Executive Officer and Principal Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
- 101 The following financial statements from NBCUniversal Media, LLC's Annual Report on Form 10-K for the year ended December 31, 2018, filed with the Securities and Exchange Commission on January 31, 2019, formatted in XBRL (eXtensible Business Reporting Language): (1) the Consolidated Statement of Income; (2) the Consolidated Statement of Comprehensive Income; (3) the Consolidated Statement of Cash Flows; (4) the Consolidated Balance Sheet; (5) the Consolidated Statement of Changes in Equity; and (6) the Notes to Consolidated Financial Statements.

Item 16: Form 10-K Summary

None.

Signatures

Comcast

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized in Philadelphia, Pennsylvania on January 31, 2019.

By: /s/ BRIAN L. ROBERTS

Brian L. Roberts
Chairman and CEO

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signature	Title	Date
<u>/s/ BRIAN L. ROBERTS</u> Brian L. Roberts	Chairman and CEO; Director (Principal Executive Officer)	January 31, 2019
<u>/s/ MICHAEL J. CAVANAGH</u> Michael J. Cavanagh	Senior Executive Vice President and CFO (Principal Financial Officer)	January 31, 2019
<u>/s/ DANIEL C. MURDOCK</u> Daniel C. Murdock	Senior Vice President, Chief Accounting Officer and Controller (Principal Accounting Officer)	January 31, 2019
<u>/s/ KENNETH J. BACON</u> Kenneth J. Bacon	Director	January 31, 2019
<u>/s/ MADELINE S. BELL</u> Madeline S. Bell	Director	January 31, 2019
<u>/s/ SHELDON M. BONOVIKZ</u> Sheldon M. Bonovitz	Director	January 31, 2019
<u>/s/ EDWARD D. BREEN</u> Edward D. Breen	Director	January 31, 2019
<u>/s/ GERALD L. HASSELL</u> Gerald L. Hassell	Director	January 31, 2019
<u>/s/ JEFFREY A. HONICKMAN</u> Jeffrey A. Honickman	Director	January 31, 2019
<u>/s/ MARITZA G. MONTIEL</u> Maritza G. Montiel	Director	January 31, 2019
<u>/s/ ASUKA NAKAHARA</u> Asuka Nakahara	Director	January 31, 2019
<u>/s/ DAVID C. NOVAK</u> David C. Novak	Director	January 31, 2019

NBCUniversal

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized in Philadelphia, Pennsylvania on January 31, 2019.

NBCUNIVERSAL MEDIA, LLC

By: NBCUNIVERSAL, LLC, its sole member

By: /s/ STEPHEN B. BURKE

Stephen B. Burke
Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signature	Title	Date
<u>/s/ BRIAN L. ROBERTS</u> Brian L. Roberts	Principal Executive Officer of NBCUniversal Media, LLC	January 31, 2019
<u>/s/ MICHAEL J. CAVANAGH</u> Michael J. Cavanagh	Principal Financial Officer of NBCUniversal Media, LLC; Director of NBCUniversal, LLC	January 31, 2019
<u>/s/ ARTHUR R. BLOCK</u> Arthur R. Block	Director of NBCUniversal, LLC	January 31, 2019
<u>/s/ DAVID L. COHEN</u> David L. Cohen	Director of NBCUniversal, LLC	January 31, 2019
<u>/s/ DANIEL C. MURDOCK</u> Daniel C. Murdock	Principal Accounting Officer of NBCUniversal Media, LLC	January 31, 2019

NBCUniversal Media, LLC Financial Statements and Supplementary Data

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Report of Independent Registered Public Accounting Firm

To the Member of NBCUniversal Media, LLC
New York, New York

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of NBCUniversal Media, LLC and subsidiaries (the “Company”) as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, cash flows and changes in equity for each of the three years in the period ended December 31, 2018, and the related notes (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Deloitte & Touche LLP

New York, New York
January 31, 2019

We have served as the Company’s auditor since 2011.

NBCUniversal Media, LLC
Consolidated Statement of Income

Year ended December 31 (in millions)	2018	2017	2016
Revenue	\$ 35,895	\$ 32,950	\$ 31,398
Costs and Expenses:			
Programming and production	16,330	14,276	14,424
Other operating and administrative	7,980	7,687	7,033
Advertising, marketing and promotion	2,952	2,806	2,778
Depreciation	1,001	994	861
Amortization	1,107	1,047	944
Other operating gains	(141)	(337)	—
Total costs and expenses	29,229	26,473	26,040
Operating income	6,666	6,477	5,358
Interest expense	(489)	(727)	(595)
Investment and other income (loss), net	(521)	(144)	24
Income before income taxes	5,656	5,606	4,787
Income tax expense	(351)	(392)	(305)
Net income	5,305	5,214	4,482
Less: Net income attributable to noncontrolling interests	68	134	311
Net income attributable to NBCUniversal	\$ 5,237	\$ 5,080	\$ 4,171

See accompanying notes to consolidated financial statements.

NBCUniversal Media, LLC**Consolidated Statement of Comprehensive Income**

Year ended December 31 (in millions)	2018		2017		2016
Net income	\$	5,305	\$	5,214	\$ 4,482
Unrealized gains (losses) on marketable securities, net		—		(233)	—
Deferred gains (losses) on cash flow hedges, net		3		(13)	24
Employee benefit obligations, net		14		112	15
Currency translation adjustments, net		(16)		189	112
Comprehensive income		5,306		5,269	4,633
Less: Net income attributable to noncontrolling interests		68		134	311
Less: Other comprehensive income (loss) attributable to noncontrolling interests		(41)		81	74
Comprehensive income attributable to NBCUniversal	\$	5,279	\$	5,054	\$ 4,248

See accompanying notes to consolidated financial statements.

NBCUniversal Media, LLC
Consolidated Statement of Cash Flows

Year ended December 31 (in millions)	2018	2017	2016
Operating Activities			
Net income	\$ 5,305	\$ 5,214	\$ 4,482
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation, amortization and other operating gains	1,967	1,704	1,805
Net (gain) loss on investment activity and other	689	428	87
Deferred income taxes	(39)	2	89
Changes in operating assets and liabilities, net of effects of acquisitions and divestitures:			
Current and noncurrent receivables, net	(452)	(594)	(502)
Film and television costs, net	35	(199)	(509)
Accounts payable and accrued expenses related to trade creditors	57	(43)	51
Other operating assets and liabilities	341	564	(606)
Net cash provided by operating activities	7,903	7,076	4,897
Investing Activities			
Capital expenditures	(1,730)	(1,502)	(1,452)
Cash paid for intangible assets	(448)	(295)	(283)
Note receivable from Comcast	(2,054)	—	—
Construction of Universal Beijing Resort	(460)	(71)	(22)
Acquisitions, net of cash acquired	(80)	(140)	(205)
Proceeds from sales of businesses and investments	70	45	109
Purchases of investments	(587)	(490)	(290)
Other	(51)	586	(90)
Net cash provided by (used in) investing activities	(5,340)	(1,867)	(2,233)
Financing Activities			
Proceeds from borrowings	692	3,948	—
Repurchases and repayments of debt	(438)	(3,498)	(1,565)
Proceeds from (repayments of) borrowings from Comcast, net	(1,777)	(872)	928
Distributions to member	(1,627)	(1,968)	(1,606)
Distributions to noncontrolling interests	(205)	(209)	(210)
Purchase of Universal Studios Japan noncontrolling interests	—	(2,299)	—
Other	(121)	79	356
Net cash provided by (used in) financing activities	(3,476)	(4,819)	(2,097)
Increase (decrease) in cash, cash equivalents and restricted cash	(913)	390	567
Cash, cash equivalents and restricted cash, beginning of year	2,377	1,987	1,420
Cash, cash equivalents and restricted cash, end of year	\$ 1,464	\$ 2,377	\$ 1,987

See accompanying notes to consolidated financial statements.

NBCUniversal Media, LLC
Consolidated Balance Sheet

December 31 (in millions)	2018	2017
Assets		
Current Assets:		
Cash and cash equivalents	\$ 1,444	\$ 2,347
Receivables, net	7,293	6,967
Programming rights	1,323	1,606
Note receivable from Comcast	2,054	—
Other current assets	1,133	1,037
Total current assets	13,247	11,957
Film and television costs	7,292	7,082
Investments	1,680	1,816
Property and equipment, net	13,189	11,346
Goodwill	24,118	23,989
Intangible assets, net	13,666	13,306
Other noncurrent assets, net	1,822	1,804
Total assets	\$ 75,014	\$ 71,300
Liabilities and Equity		
Current Liabilities:		
Accounts payable and accrued expenses related to trade creditors	\$ 1,933	\$ 1,663
Accrued participations and residuals	1,808	1,644
Program obligations	965	745
Deferred revenue	1,118	1,457
Accrued expenses and other current liabilities	2,195	2,394
Note payable to Comcast	54	1,831
Current portion of long-term debt	151	198
Total current liabilities	8,224	9,932
Long-term debt, less current portion	12,731	12,275
Accrued participations, residuals and program obligations	1,712	1,490
Other noncurrent liabilities	5,177	4,153
Commitments and contingencies (Note 14)		
Redeemable noncontrolling interests	389	409
Equity:		
Member's capital	45,618	42,148
Accumulated other comprehensive income (loss)	254	(20)
Total NBCUniversal member's equity	45,872	42,128
Noncontrolling interests	909	913
Total equity	46,781	43,041
Total liabilities and equity	\$ 75,014	\$ 71,300

See accompanying notes to consolidated financial statements.

NBCUniversal Media, LLC
Consolidated Statement of Changes in Equity

(in millions)	Redeemable Noncontrolling Interests	Member's Capital	Accumulated Other Comprehensive Income (Loss)	Non- controlling Interests	Total Equity
Balance, December 31, 2015	\$ 372	\$ 32,834	\$ (212)	\$ 1,681	\$ 34,303
Distributions to member		(1,606)			(1,606)
Contributions from (distributions to) noncontrolling interests, net	(59)			(148)	(148)
DreamWorks Animation contributions		3,566		89	3,655
Other comprehensive income (loss)			77	74	151
Other	168	(71)		158	87
Net income	49	4,171		262	4,433
Balance, December 31, 2016	530	38,894	(135)	2,116	40,875
Distributions to member		(1,968)			(1,968)
Contributions from (distributions to) noncontrolling interests, net	(65)			(120)	(120)
Contribution from member		662			662
Other comprehensive income (loss)			(26)	81	55
Purchase of Universal Studios Japan noncontrolling interests		(704)	141	(1,736)	(2,299)
Other	(84)	184		466	650
Net income	28	5,080		106	5,186
Balance, December 31, 2017	409	42,148	(20)	913	43,041
Cumulative effects of adoption of accounting standards		(232)	232		—
Distributions to member		(1,627)			(1,627)
Contributions from (distributions to) noncontrolling interests, net	(52)			299	299
Other comprehensive income (loss)			42	(41)	1
Other	(4)	92		(294)	(202)
Net income	36	5,237		32	5,269
Balance, December 31, 2018	\$ 389	\$ 45,618	\$ 254	\$ 909	\$ 46,781

See accompanying notes to consolidated financial statements.

Note 1: Basis of Presentation and Summary of Significant Accounting Policies

Unless indicated otherwise, throughout these notes to the consolidated financial statements, we refer to NBCUniversal and its consolidated subsidiaries as “we,” “us” and “our.” We are one of the world’s leading media and entertainment companies that develops, produces and distributes entertainment, news and information, sports, and other content for global audiences, and owns and operates theme parks worldwide.

We present our operations as the following four reportable business segments: Cable Networks, Broadcast Television, Filmed Entertainment and Theme Parks. See Note 2 for additional information on our reportable business segments.

Basis of Presentation

The accompanying consolidated financial statements include all entities in which we have a controlling voting interest and variable interest entities (“VIEs”) required to be consolidated in accordance with generally accepted accounting principles in the United States (“GAAP”). Transactions between NBCUniversal and both Comcast and Comcast’s consolidated subsidiaries are reflected in these consolidated financial statements and disclosed as related party transactions when material.

We translate assets and liabilities of our foreign operations where the functional currency is the local currency, primarily the Japanese yen, euro, British pound and Chinese renminbi, into U.S. dollars at the exchange rate as of the balance sheet date and translate revenue and expenses using average monthly exchange rates. The related translation adjustments are recorded as a component of accumulated other comprehensive income (loss) in our consolidated balance sheet. Any foreign currency transaction gains or losses are included in our consolidated statement of income.

Accounting Policies

Our consolidated financial statements are prepared in accordance with GAAP, which require us to select accounting policies, including in certain cases industry-specific policies, and make estimates that affect the reported amount of assets, liabilities, revenue and expenses, and the related disclosure of contingent assets and contingent liabilities. Actual results could differ from these estimates. We believe that the judgments and related estimates for the following items are critical in the preparation of our consolidated financial statements:

- film and television costs (see Note 4)
- goodwill and intangible assets (see Note 11)

In addition, the following accounting policy is specific to the industries in which we operate:

- capitalization and amortization of film and television costs (see Note 4)

Information on other accounting policies and methods that we use in the preparation of our consolidated financial statements are included, where applicable, in their respective footnotes that follow. Below is a discussion of accounting policies and methods used in our consolidated financial statements that are not presented within other footnotes.

Advertising Expenses

Advertising costs are expensed as incurred.

Cash Equivalents

The carrying amounts of our cash equivalents approximate their fair values. Our cash equivalents consist primarily of money market funds and U.S. government obligations, as well as commercial paper and certificates of deposit with maturities of three months or less when purchased.

Derivative Financial Instruments

We use derivative financial instruments to manage our exposure to the risks associated with fluctuations in foreign exchange rates and interest rates. Our objective is to manage the financial and operational exposure arising from these risks by offsetting gains and losses on the underlying exposures with gains and losses on the derivatives used to economically hedge them.

Our derivative financial instruments are recorded in our consolidated balance sheet at fair value. The impact of our derivative financial instruments on our consolidated financial statements was not material in any of the periods presented.

Fair Value Measurements

The accounting guidance related to fair value measurements establishes a hierarchy based on the types of inputs used for the various valuation techniques (market approach, income approach and cost approach). The levels of the hierarchy are described below.

- Level 1: Values are determined using quoted market prices for identical financial instruments in an active market
- Level 2: Values are determined using quoted prices for similar financial instruments and valuation models whose inputs are observable
- Level 3: Values are determined using pricing models that use significant inputs that are primarily unobservable, discounted cash flow methodologies or similar techniques, as well as instruments for which the determination of fair value requires significant management judgment or estimation

We use these levels of hierarchy to measure the fair value of certain financial instruments on a recurring basis, such as for investments; on a non-recurring basis, such as for acquisitions and impairment testing; for disclosure purposes, such as long-term debt; and for other applications, as discussed in their respective footnotes. Our assessment of the significance of a particular input to the fair value measurement requires judgment and may affect the valuation and classification within the fair value hierarchy.

Note 2: Segment Information

Our Cable Networks segment consists primarily of a diversified portfolio of cable television networks. Our Cable Networks segment is comprised of our national cable networks that provide a variety of entertainment, news and information, and sports content; our regional sports and news networks; our international cable networks; our cable television studio production operations; and our various digital properties.

Our Broadcast Television segment consists primarily of the NBC and Telemundo broadcast networks, our NBC and Telemundo owned local broadcast television stations, the NBC Universo national cable network, our broadcast television studio production operations, and our various digital properties.

Our Filmed Entertainment segment primarily produces, acquires, markets and distributes filmed entertainment worldwide. Our films are produced primarily under the Universal Pictures, Illumination, DreamWorks Animation and Focus Features names.

Our Theme Parks segment consists primarily of our Universal theme parks in Orlando, Florida; Hollywood, California; and Osaka, Japan. In addition, along with a consortium of Chinese state-owned companies, we are developing a Universal theme park and resort in Beijing, China.

We use Adjusted EBITDA to evaluate the profitability of our operating segments, and the components of net income attributable to NBCUniversal excluded from Adjusted EBITDA are not separately evaluated. To be consistent with our current management reporting presentation, certain 2018, 2017 and 2016 operating results were reclassified related to certain NBCUniversal businesses now presented in Headquarters and Other. We do not present a measure of total assets for our reportable business segments as this information is not used by management to allocate resources and capital. Our financial data by business segment is presented in the tables below.

(in millions)	Revenue	Adjusted EBITDA ^(d)	Depreciation and Amortization	Capital Expenditures	Cash Paid for Intangible Assets
2018					
Cable Networks ^(a)	\$ 11,773	\$ 4,428	\$ 738	\$ 42	\$ 23
Broadcast Television ^(a)	11,439	1,657	146	204	81
Filmed Entertainment	7,152	734	145	35	25
Theme Parks	5,683	2,455	660	1,143	173
Headquarters and Other ^(b)	212	(645)	419	306	146
Eliminations ^{(a)(c)}	(364)	4	—	—	—
Total	\$ 35,895	\$ 8,633	\$ 2,108	\$ 1,730	\$ 448

NBCUniversal Media, LLC

(in millions)	Revenue	Adjusted EBITDA ^(d)	Depreciation and Amortization	Capital Expenditures	Cash Paid for Intangible Assets
2017					
Cable Networks	\$ 10,497	\$ 4,053	\$ 755	\$ 33	\$ 19
Broadcast Television	9,563	1,251	133	180	22
Filmed Entertainment	7,595	1,276	109	58	23
Theme Parks	5,443	2,384	648	960	78
Headquarters and Other ^(b)	179	(779)	396	271	153
Eliminations ^(c)	(327)	(4)	—	—	—
Total	\$ 32,950	\$ 8,181	\$ 2,041	\$ 1,502	\$ 295

(in millions)	Revenue	Adjusted EBITDA ^(d)	Depreciation and Amortization	Capital Expenditures	Cash Paid for Intangible Assets
2016					
Cable Networks ^(a)	\$ 10,324	\$ 3,681	\$ 745	\$ 32	\$ 20
Broadcast Television ^(a)	10,085	1,293	125	153	19
Filmed Entertainment	6,229	662	47	33	16
Theme Parks	4,946	2,190	512	922	72
Headquarters and Other ^(b)	157	(674)	376	312	156
Eliminations ^{(a)(c)}	(343)	11	—	—	—
Total	\$ 31,398	\$ 7,163	\$ 1,805	\$ 1,452	\$ 283

(a) The revenue and operating costs and expenses associated with our broadcast of the 2018 PyeongChang Olympics and the 2016 Rio Olympics were reported in our Cable Networks and Broadcast Television segments. The revenue and operating costs and expenses associated with our broadcast of the 2018 Super Bowl were reported in our Broadcast Television segment. Included in Eliminations are transactions relating to these events that our Broadcast Television and Cable Networks segments enter into with our other segments.

(b) Headquarters and Other activities include costs associated with overhead, allocations, personnel and headquarter initiatives.

(c) Eliminations are transactions that our segments enter into with one another, which consisted primarily of the licensing of film and television content from our Filmed Entertainment and Broadcast Television segments to our Cable Networks segment; for segment reporting, revenue is recognized as the programming rights asset for the licensed content is amortized based on third-party revenue.

(d) We use Adjusted EBITDA as the measure of profit or loss for our operating segments. Adjusted EBITDA is defined as net income attributable to NBCUniversal before net (income) loss attributable to noncontrolling interests, income tax expense, investment and other income (loss), net, interest expense, depreciation and amortization expense, and other operating gains and losses (such as impairment charges related to fixed and intangible assets and gains or losses on the sale of long-lived assets), if any. From time to time we may exclude from Adjusted EBITDA the impact of certain events, gains, losses or other charges (such as significant legal settlements) that affect the period-to-period comparability of our operating performance. Our reconciliation of the aggregate amount of Adjusted EBITDA for our reportable segments to consolidated income before income taxes is presented in the table below.

Year ended December 31 (in millions)	2018	2017	2016
Adjusted EBITDA	\$ 8,633	\$ 8,181	\$ 7,163
Depreciation	(1,001)	(994)	(861)
Amortization	(1,107)	(1,047)	(944)
Other operating gains	141	337	—
Interest expense	(489)	(727)	(595)
Investment and other income (loss), net	(521)	(144)	24
Income before income taxes	\$ 5,656	\$ 5,606	\$ 4,787

Note 3: Revenue

Year ended December 31 (in millions)	2018	2017	2016
Distribution	\$ 6,826	\$ 6,081	\$ 5,978
Advertising	3,587	3,359	3,530
Content licensing and other	1,360	1,057	816
Total Cable Networks	11,773	10,497	10,324
Advertising	7,010	5,654	6,834
Content licensing	2,182	2,114	1,837
Distribution and other	2,247	1,795	1,414
Total Broadcast Television	11,439	9,563	10,085
Theatrical	2,111	2,192	1,560
Content licensing	2,899	2,956	2,518
Home entertainment	1,048	1,287	1,182
Other	1,094	1,160	969
Total Filmed Entertainment	7,152	7,595	6,229
Total Theme Parks	5,683	5,443	4,946
Headquarters and Other	212	179	157
Eliminations ^(a)	(364)	(327)	(343)
Total NBCUniversal	\$ 35,895	\$ 32,950	\$ 31,398

(a) Included in Eliminations are transactions that our segments enter into with one another. See Note 2 for a description of these transactions.

We operate primarily in the United States, but also in select international markets primarily in Europe and Asia. The table below summarizes revenue by geographic location.

Year ended December 31 (in millions)	2018	2017	2016
United States	\$ 28,309	\$ 25,303	\$ 24,907
Foreign	7,586	7,647	6,491
Total revenue	\$ 35,895	\$ 32,950	\$ 31,398

Distribution

Our Cable Networks segment generates distribution revenue from the distribution of our cable network programming to traditional and virtual multichannel video providers. Our Broadcast Television segment generates distribution revenue from the fees received under retransmission consent agreements and associated fees received from NBC-affiliated local broadcast television stations.

Distribution revenue is accounted for as a license of functional intellectual property and is recognized as programming is provided on a monthly basis, generally under multiyear agreements. Monthly fees received under distribution agreements with multichannel video providers are generally based on the number of subscribers. Payment terms and conditions vary by contract type, although terms generally include payment within 30 to 60 days.

Advertising

Our Cable Networks and Broadcast Television segments generate advertising revenue from the sale of advertising on our cable and broadcast networks, our owned local broadcast television stations and various digital properties.

We enter into advertising arrangements with customers and have determined that a contract exists once all terms and conditions are agreed upon, typically when the number of advertising units is specifically identified and the timing of airing is scheduled. Advertisements are generally aired or viewed within one year once all terms are agreed upon. Advertising revenue is recognized, net of agency commissions, in the period in which advertisements are aired or viewed and payment occurs thereafter, with payment generally required within 30 days. In some instances, we guarantee audience ratings for the advertisements. To the extent there is a shortfall in contracts where the ratings were guaranteed, a portion of the revenue is deferred until the shortfall is settled, typically by providing additional advertising units generally within one year of the original airing.

Theatrical

Our Filmed Entertainment segment generates theatrical revenue from the worldwide theatrical release of our produced and acquired films for exhibition in movie theaters. Theatrical revenue is affected by the timing, nature and number of films released in movie

theaters and their acceptance by audiences. It is also affected by the number of exhibition screens, ticket prices, the percentage of ticket sale retention by the exhibitors and the popularity of competing films at the time our films are released. We recognize theatrical revenue as the films are viewed and exhibited in theaters and payment generally occurs within 30 days after exhibition.

Content Licensing

Our Cable Networks, Broadcast Television and Filmed Entertainment segments generate revenue from the licensing of our owned film and television content in the United States and internationally to cable, broadcast and premium networks and subscription video on demand services. Our content licensing agreements generally include fixed pricing and span multiple years. For example, following a film's theatrical release, our Filmed Entertainment segment may license the exhibition rights of a film to different customers over multiple successive distribution windows.

We recognize revenue when the content is delivered and available for use by the licensee. When the term of an existing agreement is renewed or extended, we recognize revenue at the later of when the content is available or when the renewal or extension period begins. Payment terms and conditions vary by contract type, although payments are generally collected over the license term. The amount of future revenue to be earned related to fixed pricing under existing agreements primarily relates to our Filmed Entertainment segment, which at any given time equals approximately 1 to 2 years of our annual Filmed Entertainment content licensing revenue. The majority of this revenue will be recognized within 2 years. This amount may fluctuate from period to period depending on the timing of the releases and the availability of content under existing agreements and may not represent the total content licensing revenue expected to be recognized as it does not include revenue from future agreements or from variable pricing or optional purchases under existing agreements.

For our content licensing agreements that include variable pricing, such as pricing based on the number of subscribers to a subscription video on demand service sold by our customers, we generally recognize revenue as our customers sell to their subscribers.

Home Entertainment

Our Filmed Entertainment segment generates revenue from the sale of our produced and acquired films on standard-definition digital video discs and Blu-ray discs (together, "DVDs") and through digital distribution services. Our Cable Networks and Broadcast Television networks also generate revenue from the sale of owned programming on DVDs and through digital distribution services, which is reported in other revenue. We generally recognize revenue from DVD sales, net of estimated returns and customer incentives, on the date that DVDs are delivered to and made available for sale by retailers. Payment terms generally include payment within 60 to 90 days from delivery to the retailer.

Theme Parks

Our Theme Parks segment generates revenue primarily from ticket sales and guest spending at our Universal theme parks in Orlando, Florida; Hollywood, California; and Osaka, Japan. Guest spending includes in-park spending on food, beverages and merchandise. We recognize revenue from theme park ticket sales when the tickets are used, generally within a year from the date of purchase. For annual passes, we generally recognize revenue on a straight-line basis over the period the pass is available to be used. We recognize revenue from guest spending at the point of sale.

Consolidated Balance Sheet

The following tables summarize our accounts receivable and other balances that are not separately presented in our consolidated balance sheet that relate to the recognition of revenue and collection of the related cash.

December 31 (in millions)	2018		2017	
Receivables, gross	\$	7,392	\$	7,055
Less: Allowance for doubtful accounts		99		88
Receivables, net	\$	7,293	\$	6,967
<hr/>				
December 31 (in millions)	2018		2017	
Noncurrent receivables (included in other noncurrent assets, net)	\$	1,180	\$	1,093
Noncurrent deferred revenue (included in other noncurrent liabilities)	\$	481	\$	392

Note 4: Film and Television Costs

December 31 (in millions)	2018	2017
Film Costs:		
Released, less amortization	\$ 1,600	\$ 1,734
Completed, not released	144	50
In production and in development	1,063	1,149
	2,807	2,933
Television Costs:		
Released, less amortization	2,161	2,260
In production and in development	953	818
	3,114	3,078
Programming rights, less amortization	2,694	2,677
	8,615	8,688
Less: Current portion of programming rights	1,323	1,606
Film and television costs	\$ 7,292	\$ 7,082

Based on our current estimates of the total remaining revenue from all sources (“ultimate revenue”), in 2019 we expect to amortize approximately \$1.6 billion of film and television costs associated with our original film and television productions that have been released, or are completed and have not been released. Through 2021, we expect to amortize approximately 83% of unamortized film and television costs for our released productions, excluding amounts allocated to acquired libraries.

As of December 31, 2018, acquired film and television libraries, which are included within the “released, less amortization” captions in the table above, had remaining unamortized costs of \$396 million. These costs are generally amortized over a period not to exceed 20 years, and approximately 48% of these costs are expected to be amortized through 2021.

Capitalization of Film and Television Costs

We capitalize film and television production costs, including direct costs, production overhead, print costs, development costs and interest. We amortize capitalized film and television production costs, including acquired libraries, and accrue costs associated with participation and residual payments to programming and production expenses. We generally record the amortization and the accrued costs using the individual film forecast computation method, which amortizes the costs in the same ratio as the associated ultimate revenue. Estimates of ultimate revenue and total costs are based on anticipated release patterns, public acceptance and historical results for similar productions. Unamortized film and television production costs, including acquired libraries, are stated at the lower of unamortized cost or fair value. We do not capitalize costs related to the distribution of a film in movie theaters or the licensing or sale of a film or television production, which primarily include costs associated with marketing and distribution.

In determining the method of amortization and estimated life of an acquired film or television library, we generally use the method and the life that most closely follow the undiscounted cash flows over the estimated life of the asset.

When an event or a change in circumstance occurs that was known or knowable as of the balance sheet date and that indicates the fair value of a film is less than its unamortized costs, we determine the fair value of the film and record an impairment charge for the amount by which the unamortized capitalized costs exceed the film’s fair value. The estimated fair value of a production is based on Level 3 inputs that primarily use an analysis of future expected cash flows. Adjustments to capitalized film production costs were not material in any of the periods presented.

We may enter into cofinancing arrangements with third parties to jointly finance or distribute certain of our film productions. Cofinancing arrangements can take various forms, but in most cases involve the grant of an economic interest in a film to an investor. The number of investors and the terms of these arrangements can vary, although investors generally assume the full risks and rewards for the portion of the film acquired in these arrangements. We account for the proceeds received from a third-party investor under these arrangements as a reduction to our capitalized film costs. Under these arrangements, the investor owns an undivided copyright interest in the film, and therefore in each period we record either a charge or a benefit to programming and production expenses to reflect the estimate of the third-party investor’s interest in the profit or loss of the film. The estimate of the third-party investor’s interest in the profit or loss of a film is determined using the ratio of actual revenue earned to date to the ultimate revenue expected to be recognized over the film’s useful life.

We capitalize the costs of programming content that we license but do not own, including rights to multiyear, live-event sports programming, at the earlier of when payments are made for the programming or when the license period begins and the content is made available for use. We amortize capitalized programming costs as the associated programs are broadcast. We generally

amortize multiyear, live-event sports programming rights using the ratio of the current period revenue to the estimated ultimate revenue or under the terms of the contract.

Programming costs are recorded at the lower of unamortized cost or net realizable value on a program by program, package, channel or daypart basis. A daypart is an aggregation of programs broadcast during a particular time of day or programs of a similar type. Programming acquired by our Cable Networks segment is primarily tested on a channel basis for impairment, whereas programming acquired by our Broadcast Television segment is tested on a daypart basis. If we determine that the estimates of future cash flows are insufficient or if there is no plan to broadcast certain programming, we recognize an impairment charge to programming and production expenses.

Note 5: Income Taxes

Components of Income Tax Expense

Year ended December 31 (in millions)	2018	2017	2016
Foreign			
Current income tax expense	\$ 230	\$ 201	\$ 38
Deferred income tax expense	(31)	(7)	96
Withholding tax expense	163	187	158
U.S. domestic tax expense	(11)	11	13
Income tax expense	\$ 351	\$ 392	\$ 305

We are a limited liability company, and our company is disregarded for U.S. federal income tax purposes as an entity separate from NBCUniversal Holdings, a tax partnership. For U.S. federal and state income tax purposes, our income is included in tax returns filed by Comcast and its subsidiaries, and therefore we are not expected to incur any significant current or deferred U.S. domestic income taxes. Our tax liability is comprised primarily of withholding tax on foreign licensing activity and income taxes on foreign earnings. As a result of our tax status, the deferred tax assets and liabilities included in our consolidated balance sheet at December 31, 2018 and 2017 were not material.

In jurisdictions in which we are subject to income taxes, we base our provision for income taxes on our current period income, changes in our deferred income tax assets and liabilities, income tax rates, changes in estimates of our uncertain tax positions, and tax planning opportunities available in the jurisdictions in which we operate. We recognize deferred tax assets and liabilities when there are temporary differences between the financial reporting basis and tax basis of our assets and liabilities and for the expected benefits of using net operating loss carryforwards. When a change in the tax rate or tax law has an impact on deferred taxes, we apply the change based on the years in which the temporary differences are expected to reverse. We record the change in our consolidated financial statements in the period of enactment.

We classify interest and penalties, if any, associated with our uncertain tax positions as a component of income tax expense.

Uncertain Tax Positions

We retain liabilities for uncertain tax positions where we are the tax filer of record. GE and Comcast have indemnified NBCUniversal Holdings and us with respect to our income tax obligations attributable to periods prior to Comcast's acquisition of NBCUniversal, including indemnification of uncertain tax positions for these periods. The liabilities for uncertain tax positions included in our consolidated balance sheet were not material as of December 31, 2018 and 2017.

Various domestic and foreign tax authorities are examining our tax returns through tax year 2017. The majority of the periods under examination relate to tax years 2010 and forward.

Note 6: Long-Term Debt

Long-Term Debt Outstanding

December 31 (in millions)	Weighted-Average Interest Rate as of December 31, 2018	2018	2017
Term loans ^(a)	1.30%	\$ 4,122	\$ 3,860
Senior notes with maturities of 5 years or less, at face value	4.39%	5,000	4,000
Senior notes with maturities between 5 and 10 years, at face value	—	—	1,000
Senior notes with maturities greater than 10 years, at face value	5.50%	2,759	2,759
Notes due 2049 to Comcast	4.00%	610	610
Other, including capital lease obligations	—	427	276
Debt issuance costs, premiums and discounts, net	—	(36)	(32)
Total debt	3.58%	12,882	12,473
Less: Current portion		151	198
Long-term debt		\$ 12,731	\$ 12,275

(a) Term loans consist of the following, with foreign currency denominated borrowings translated using the exchange rates as of each date:

- Universal Studios Japan: ¥390 billion and ¥435 billion as of December 31, 2018 and 2017, respectively
- Universal Beijing Resort: ¥4 billion RMB as of December 31, 2018 (see Note 7)

As of December 31, 2018 and 2017, our debt, excluding our revolving credit agreement with Comcast, had an estimated fair value of \$13.2 billion and \$13.5 billion, respectively. The estimated fair value of our publicly traded debt was primarily based on Level 1 inputs that use quoted market values for the debt. The estimated fair value of debt for which there are no quoted market prices was based on Level 2 inputs that use interest rates available to us for debt with similar terms and remaining maturities.

Principal Maturities of Debt

(in millions)	
2019	\$ 153
2020	\$ 2,280
2021	\$ 2,365
2022	\$ 2,922
2023	\$ 1,012
Thereafter	\$ 4,186

Cross-Guarantee Structure

We, Comcast and a 100% owned cable holding company subsidiary of Comcast (“CCCL Parent”) fully and unconditionally guarantee each other’s debt securities, including the \$7.6 billion Comcast revolving credit facility due 2021 and the \$27.0 billion of Comcast senior unsecured fixed and floating rate notes issued in connection with Comcast’s acquisition of Sky. As of December 31, 2018, outstanding debt securities of \$86.4 billion of Comcast and CCCL Parent were subject to the cross-guarantee structure.

We do not, however, guarantee the obligations of NBCUniversal Enterprise with respect to its \$3.0 billion aggregate principal amount of senior notes, its revolving credit facility, its commercial paper program, nor its \$725 million liquidation preference of Series A cumulative preferred stock.

The Universal Studios Japan term loans are not subject to the cross-guarantee structure, however they have a separate guarantee from Comcast.

The Universal Beijing Resort term loans are not guaranteed.

Note 7: Significant Transactions

2018

Universal Beijing Resort

We entered into an agreement with a consortium of Chinese state-owned companies to build and operate a Universal theme park and resort in Beijing, China (“Universal Beijing Resort”). We own a 30% interest in Universal Beijing Resort and the construction is being funded through a combination of debt financing and equity contributions from the investors in accordance with their equity interests. The debt financing, which is being provided by a syndicate of Chinese financial institutions, contains certain financial and operating covenants and a maximum borrowing limit of ¥26.6 billion RMB (approximately \$4 billion). The debt financing is secured by the assets of Universal Beijing Resort and the equity interests of the investors. As of December 31, 2018, Universal Beijing Resort had borrowed approximately \$569 million under the financing agreement.

We have concluded that Universal Beijing Resort is a variable interest entity based on its governance structure, and we consolidate it because we have the power to direct activities that most significantly impact its economic performance. There are no liquidity arrangements, guarantees or other financial commitments between us and Universal Beijing Resort, and therefore our maximum risk of financial loss is our 30% interest. Universal Beijing Resort’s results of operations are reported in our Theme Parks segment.

In March 2018, Universal Beijing Resort received initial equity investments through a combination of cash and noncash contributions from the investors. As of December 31, 2018, our consolidated balance sheet included assets, primarily including property and equipment, and liabilities of Universal Beijing Resort totaling \$1.5 billion and \$1.0 billion, respectively.

2017

FCC Spectrum Auction

On April 13, 2017, the Federal Communications Commission announced the results of its spectrum auction. In the auction, we relinquished our spectrum rights in the New York, Philadelphia and Chicago designated market areas (“DMAs”) where NBC and Telemundo had overlapping spectrum. We received proceeds of \$482 million in July 2017, which were recorded in other investing activities in our consolidated statement of cash flows. We recognized a pretax gain of \$337 million in other operating gains in 2017. NBC and Telemundo stations share broadcast signals in these DMAs.

Universal Studios Japan

On April 6, 2017, we acquired the remaining interests in Universal Studios Japan that we did not already own for \$2.3 billion. The acquisition was funded through borrowings under our revolving credit agreement with Comcast. Because we maintained control of Universal Studios Japan, the difference between the consideration transferred and the recorded value of the noncontrolling interests, as well as the related accumulated other comprehensive income impacts, were recorded to additional paid-in capital.

2016

DreamWorks Animation

On August 22, 2016, Comcast acquired all of the outstanding stock of DreamWorks Animation for \$3.8 billion. DreamWorks Animation’s stockholders received \$41 in cash for each share of DreamWorks Animation common stock. DreamWorks Animation creates animated feature films, television series and specials, live entertainment, and related consumer products. In our allocation of purchase price for this acquisition, we recorded goodwill of \$2.8 billion and film and television costs of \$838 million.

Following the acquisition, Comcast converted DreamWorks Animation to a limited liability company and contributed its equity to us as a capital contribution. The net assets contributed to us excluded deferred income taxes and other tax-related items recorded by Comcast. The results of operations for DreamWorks Animation are reported in our Filmed Entertainment segment following the acquisition date and are presented as if the initial equity contribution occurred on the date of Comcast’s acquisition.

Note 8: Recent Accounting Pronouncements

Revenue Recognition

In May 2014, the Financial Accounting Standards Board (“FASB”) updated the accounting guidance related to revenue recognition. The updated accounting guidance provides a single, contract-based revenue recognition model to help improve financial reporting by providing clearer guidance on when an entity should recognize revenue and by reducing the number of standards to which an entity has to refer. The core principle of the new standard is that a company should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services.

NBCUniversal Media, LLC

We adopted the updated guidance on January 1, 2018 on a full retrospective basis, which required us to reflect the impact of the updated guidance for all periods presented.

The adoption of the new standard did not have a material impact on our consolidated results of operations or financial position for any period presented. The updated guidance also requires additional disclosures regarding the nature, timing and uncertainty of our revenue transactions. See Note 3 for additional information.

The tables below present the effects on our consolidated statement of income and balance sheet for the prior year periods presented.

Consolidated Statement of Income

Year ended December 31, 2017 (in millions)	Previously Reported	Effects of Adoption	As Adjusted
Revenue	\$ 32,997	\$ (47)	\$ 32,950
Total costs and expenses	\$ 26,516	\$ (43)	\$ 26,473
Operating income	\$ 6,481	\$ (4)	\$ 6,477
Net income attributable to NBCUniversal	\$ 5,084	\$ (4)	\$ 5,080

Year ended December 31, 2016 (in millions)	Previously Reported	Effects of Adoption	As Adjusted
Revenue	\$ 31,593	\$ (195)	\$ 31,398
Total costs and expenses	\$ 26,171	\$ (131)	\$ 26,040
Operating income	\$ 5,422	\$ (64)	\$ 5,358
Net income attributable to NBCUniversal	\$ 4,235	\$ (64)	\$ 4,171

Consolidated Balance Sheet

December 31, 2017 (in millions)	Previously Reported	Effects of Adoption	As Adjusted
Total current assets	\$ 11,673	\$ 284	\$ 11,957
Film and television costs	\$ 7,071	\$ 11	\$ 7,082
Other noncurrent assets, net	\$ 1,872	\$ (68)	\$ 1,804
Total assets	\$ 71,073	\$ 227	\$ 71,300
Total current liabilities	\$ 9,602	\$ 330	\$ 9,932
Other noncurrent liabilities	\$ 4,109	\$ 44	\$ 4,153
Total equity	\$ 43,188	\$ (147)	\$ 43,041
Total liabilities and equity	\$ 71,073	\$ 227	\$ 71,300

The adoption of the updated guidance impacted the timing of recognition for some of our revenue contracts, primarily for content licensing agreements. As a result of the adoption of the updated guidance, when the term of an existing content licensing agreement is renewed or extended, revenue is not recognized until the date when the renewal or extension period begins. Under the prior guidance, revenue for the content licensing renewal period was recognized on the date that the renewal was agreed to contractually. This change resulted in delayed revenue recognition for content licensing renewals or extensions in our Cable Networks, Broadcast Television and Filmed Entertainment segments. This change also impacted the timing of the related amortization of our film and television costs and participations and residuals expenses. The adoption of the updated guidance did not have a material impact on the results of operations or financial position for the reportable segments.

Financial Assets and Financial Liabilities

In January 2016, the FASB updated the accounting guidance related to the recognition and measurement of financial assets and financial liabilities. The updated accounting guidance, among other things, requires that all nonconsolidated equity investments, except those accounted for under the equity method, be measured at fair value and the changes in fair value be recognized in net income. On January 1, 2018, we adopted the updated guidance prospectively along with a related clarifying update and as a result, we recorded a \$232 million cumulative effect adjustment to member's capital and accumulated other comprehensive income (loss). See Note 9 for additional information.

Restricted Cash

In November 2016, the FASB updated the accounting guidance related to restricted cash. The new standard requires that the statement of cash flows present the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents, and a reconciliation of that total to amounts presented on the balance sheet. We

adopted the updated guidance on January 1, 2018 and as required applied the retrospective transition method. The adoption did not have a material impact for any period presented.

Leases

In February 2016, the FASB updated the accounting guidance related to leases. The updated accounting guidance requires lessees to recognize a right-of-use asset and a lease liability on the balance sheet for all leases with the exception of short-term leases. The asset and liability are initially measured based on the present value of committed lease payments. For a lessee, the recognition, measurement and presentation of expenses and cash flows arising from a lease do not significantly change from previous guidance. For a lessor, the accounting applied is also largely unchanged from previous guidance. We will adopt the updated accounting guidance in the first quarter of 2019 and prior periods will not be adjusted. We are currently in the process of determining the impact that the updated accounting will have on our consolidated financial statements. See Note 14 for a summary of our undiscounted minimum rental commitments under operating leases as of December 31, 2018.

Note 9: Investments

December 31 (in millions)	2018	2017
Equity method	\$ 707	\$ 690
Marketable equity securities	162	430
Nonmarketable equity securities	811	696
Total investments	\$ 1,680	\$ 1,816

Investment and Other Income (Loss), Net

Year ended December 31 (in millions)	2018	2017	2016
Equity in net income (losses) of investees, net	\$ (371)	\$ (201)	\$ (99)
Realized and unrealized gains (losses) on equity securities, net	(217)	—	3
Other income (loss), net	67	57	120
Investment and other income (loss), net	\$ (521)	\$ (144)	\$ 24

Equity Method

We use the equity method to account for investments in which we have the ability to exercise significant influence over the investee's operating and financial policies or in which we hold a significant partnership or limited liability company interest. Equity method investments are recorded at cost and are adjusted to recognize (1) our proportionate share of the investee's net income or loss after the date of investment, (2) amortization of the recorded investment that exceeds our share of the book value of the investee's net assets, (3) additional contributions made and dividends received, and (4) impairments resulting from other-than-temporary declines in fair value. For some investments, we record our share of the investee's net income or loss one quarter in arrears due to the timing of our receipt of such information. Gains or losses on the sale of equity method investments are recorded to other income (loss), net. If an equity method investee were to issue additional securities that would change our proportionate share of the entity, we would recognize the change, if any, as a gain or loss to other income (loss), net.

Hulu

As of December 31, 2018 and 2017, our investment in Hulu was \$248 million and \$249 million, respectively. In 2018, 2017 and 2016, we made cash capital contributions totaling \$454 million, \$300 million and \$50 million, respectively, to Hulu. In 2018, 2017 and 2016, we recognized our proportionate share of Hulu's losses of \$454 million, \$276 million and \$168 million, respectively, in equity in net income (losses) of investees, net.

In August 2016, Time Warner Inc. acquired a 10% interest in Hulu, which diluted our interest in Hulu from 33% to 30%. For a period not to exceed 3 years, Time Warner may put its shares to Hulu or Hulu may call Time Warner's shares under certain limited circumstances arising from regulatory review. Given the contingent nature of the put and call options, we recorded a deferred gain of \$159 million and a corresponding increase to our investment in Hulu as a result of the dilution. The deferred gain will be recognized in other income (loss), net if and when the options expire unexercised.

The Weather Channel

In March 2018, we sold our investment in The Weather Channel cable network and recognized a pretax gain of \$64 million in other income (loss), net.

In January 2016, following a legal restructuring at The Weather Channel, we and the other investors sold the entity holding The Weather Channel's product and technology businesses to IBM. Following the close of the transaction, we continued to hold an

investment in The Weather Channel cable network through a new holding company. As a result of the sale of our investment, we recognized a pretax gain of \$108 million in other income (loss), net.

Marketable Equity Securities

We classify publicly traded investments with readily determinable fair values that are not accounted for under the equity method as marketable equity securities. Marketable equity securities are recorded at cost and adjusted to fair value at each reporting period. The changes in fair value between measurement dates are recorded in realized and unrealized gains (losses) on equity securities, net. The fair values of our marketable equity securities are based on Level 1 inputs that use quoted market prices.

Snap

In March 2017, Comcast acquired an interest in Snap Inc. as part of its initial public offering. On March 31, 2017, Comcast contributed its investment in Snap to us as an equity contribution of \$662 million, which was recorded in our consolidated statement of equity based on the fair value of the investment as of March 31, 2017. We have classified our investment as a marketable security. Snap is a camera company whose primary product is Snapchat, a camera app that was created to help people communicate through short videos and images. As of December 31, 2018 and 2017, we had an investment in Snap of \$162 million and \$430 million, respectively. In 2018, we recognized unrealized losses of \$268 million in realized and unrealized gains (losses) on equity securities, net related to our investment in Snap. Prior to the updated accounting guidance, unrealized gains and losses related to our investment in Snap were recorded to accumulated other comprehensive income.

Nonmarketable Equity Securities

We classify investments without readily determinable fair values that are not accounted for under the equity method as nonmarketable equity securities. The accounting guidance requires nonmarketable equity securities to be recorded at cost and adjusted to fair value at each reporting period. However, the guidance allows for a measurement alternative, which is to record the investments at cost, less impairment, if any, and subsequently adjust for observable price changes of identical or similar investments of the same issuer. We apply this measurement alternative to our nonmarketable equity securities. When an observable event occurs, we estimate the fair values of our nonmarketable equity securities based on Level 2 inputs that are derived from observable price changes of similar securities adjusted for insignificant differences in rights and obligations. The changes in value are recorded in realized and unrealized gains (losses) on equity securities, net.

Impairment Testing of Investments

We review our investment portfolio, other than our marketable equity securities, each reporting period to determine whether there are identified events or circumstances that would indicate there is a decline in the fair value. For our nonpublic investments, if there are no identified events or circumstances that would have a significant adverse effect on the fair value of the investment, then the fair value is not estimated. For our equity method investments and held to maturity investments, if an investment is deemed to have experienced an other-than-temporary decline below its cost basis, we reduce the carrying amount of the investment to its quoted or estimated fair value, as applicable, and establish a new cost basis for the investment. For our nonmarketable equity securities, we record the impairment to realized and unrealized gains (losses) on equity securities, net. For our equity method investments and our held to maturity investments, we record the impairment to other income (loss), net.

Note 10: Property and Equipment

December 31 (in millions)	Weighted-Average Original Useful Life as of December 31, 2018	2018	2017
Buildings and leasehold improvements	31 years	\$ 8,877	\$ 8,124
Furniture, fixtures and equipment	11 years	5,501	4,843
Construction in process	N/A	2,676	1,506
Land	N/A	1,129	1,039
Property and equipment, at cost		18,183	15,512
Less: Accumulated depreciation		4,994	4,166
Property and equipment, net		\$ 13,189	\$ 11,346

Property and equipment are stated at cost. We capitalize improvements that extend asset lives and expense repairs and maintenance costs as incurred. We record depreciation using the straight-line method over the asset's estimated useful life. For assets that are sold or retired, we remove the applicable cost and accumulated depreciation and, unless the gain or loss on disposition is presented separately, we recognize it as a component of depreciation expense.

We evaluate the recoverability of our property and equipment whenever events or substantive changes in circumstances indicate that the carrying amount may not be recoverable. The evaluation is based on the cash flows generated by the underlying asset groups, including estimated future operating results, trends or other determinants of fair value. If the total of the expected future undiscounted cash flows were less than the carrying amount of the asset group, we would recognize an impairment charge to the extent the carrying amount of the asset group exceeded its estimated fair value. Unless presented separately, the impairment charge is included as a component of depreciation expense.

Note 11: Goodwill and Intangible Assets

Goodwill

(in millions)	Cable Networks	Broadcast Television	Filmed Entertainment	Theme Parks	Total
Balance, December 31, 2016	\$ 13,183	\$ 806	\$ 2,993	\$ 6,341	\$ 23,323
Acquisitions	241	—	32	—	273
Adjustments ^(a)	1	—	185	—	186
Foreign currency translation	2	—	2	203	207
Balance, December 31, 2017	13,427	806	3,212	6,544	23,989
Acquisitions	—	36	—	—	36
Dispositions	—	—	(8)	—	(8)
Adjustments	(13)	1	(9)	—	(21)
Foreign currency translation	(7)	—	(11)	140	122
Balance, December 31, 2018	\$ 13,407	\$ 843	\$ 3,184	\$ 6,684	\$ 24,118

(a) Adjustments in 2017 primarily included the updated allocation of the purchase price for DreamWorks Animation.

Goodwill is calculated as the excess of the consideration transferred over the identifiable net assets acquired in a business combination and represents the future economic benefits expected to arise from anticipated synergies and intangible assets acquired that do not qualify for separate recognition, including assembled workforce, noncontractual relationships and other agreements. We assess the recoverability of our goodwill annually, or more frequently whenever events or substantive changes in circumstances indicate that the carrying amount of a reporting unit may exceed its fair value. We test goodwill for impairment at the reporting unit level. To determine our reporting units, we evaluate the components one level below the segment level and we aggregate the components if they have similar economic characteristics. As a result of this assessment, our reporting units are generally the same as our four reportable segments. We evaluate the determination of our reporting units used to test for impairment periodically or whenever events or substantive changes in circumstances occur. The assessment of recoverability may first consider qualitative factors to determine whether the existence of events or circumstances leads to a determination that it is more likely than not that the fair value of a reporting unit is less than its carrying amount. A quantitative assessment is performed if the qualitative assessment results in a more-likely-than-not determination or if a qualitative assessment is not performed. The quantitative assessment considers whether the carrying amount of a reporting unit exceeds its fair value, in which case an impairment charge is recorded to the extent the reporting unit's carrying value exceeds its fair value. Unless presented separately, the impairment charge is included as a component of amortization expense. We did not recognize any impairment charges in any of the periods presented.

Intangible Assets

December 31 (in millions)	Weighted-Average Original Useful Life as of December 31, 2018	2018		2017	
		Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Finite-Lived Intangible Assets:					
Customer relationships	19 years	\$ 13,269	\$ (6,283)	\$ 13,301	\$ (5,643)
Software	5 years	1,779	(932)	1,516	(737)
Other	19 years	3,619	(1,375)	2,580	(1,205)
Indefinite-Lived Intangible Assets:					
Trade names	N/A	2,981		2,981	
FCC licenses	N/A	608		513	
Total		\$ 22,256	\$ (8,590)	\$ 20,891	\$ (7,585)

Indefinite-Lived Intangible Assets

Indefinite-lived intangible assets consist of trade names and FCC licenses. We assess the recoverability of our indefinite-lived intangible assets annually, or more frequently whenever events or substantive changes in circumstances indicate that the assets might be impaired. We evaluate the unit of account used to test for impairment of our indefinite-lived intangible assets periodically or whenever events or substantive changes in circumstances occur to ensure impairment testing is performed at an appropriate level. The assessment of recoverability may first consider qualitative factors to determine whether it is more likely than not that the fair value of an indefinite-lived intangible asset is less than its carrying amount. A quantitative assessment is performed if the qualitative assessment results in a more-likely-than-not determination or if a qualitative assessment is not performed. When performing a quantitative assessment, we estimate the fair value of our indefinite-lived intangible assets primarily based on a discounted cash flow analysis that involves significant judgment. When analyzing the fair values indicated under the discounted cash flow models, we also consider multiples of Adjusted EBITDA generated by the underlying assets, current market transactions and profitability information. If the fair value of our indefinite-lived intangible assets were less than the carrying amount, we would recognize an impairment charge for the difference between the estimated fair value and the carrying value of the assets. Unless presented separately, the impairment charge is included as a component of amortization expense. We did not recognize any material impairment charges in any of the periods presented.

Finite-Lived Intangible Assets

Estimated Amortization Expense of Finite-Lived Intangible Assets

(in millions)		
2019	\$	1,059
2020	\$	1,039
2021	\$	936
2022	\$	861
2023	\$	839

Finite-lived intangible assets are subject to amortization and consist primarily of customer relationships acquired in business combinations, software, and intellectual property rights. Our finite-lived intangible assets are amortized primarily on a straight-line basis over their estimated useful life or the term of the associated agreement.

We capitalize direct development costs associated with internal-use software, including external direct costs of material and services and payroll costs for employees devoting time to these software projects. We also capitalize costs associated with the purchase of software licenses. We generally amortize them on a straight-line basis over a period not to exceed five years. We expense maintenance and training costs, as well as costs incurred during the preliminary stage of a project, as they are incurred. We capitalize initial operating system software costs and amortize them over the life of the associated hardware.

We evaluate the recoverability of our finite-lived intangible assets whenever events or substantive changes in circumstances indicate that the carrying amount may not be recoverable. The evaluation is based on the cash flows generated by the underlying asset groups, including estimated future operating results, trends or other determinants of fair value. If the total of the expected future undiscounted cash flows were less than the carrying amount of the asset group, we would recognize an impairment charge to the extent the carrying amount of the asset group exceeded its estimated fair value. Unless presented separately, the impairment charge is included as a component of amortization expense.

Note 12: Employee Benefit Plans

Deferred Compensation Plans

Year ended December 31 (in millions)	2018	2017	2016
Benefit obligation	\$ 719	\$ 621	\$ 494
Interest expense	\$ 58	\$ 64	\$ 48

Certain members of management participate in Comcast's unfunded, nonqualified deferred compensation plan. The amount of compensation deferred by each participant is based on participant elections. Participant accounts are credited with income primarily based on a fixed annual rate.

Additionally, we maintain unfunded, nonqualified deferred compensation plans for certain members of management. The amount of compensation deferred by each participant is based on participant elections. Participants designate one or more valuation funds, independently established funds or indices that are used to determine the amount of investment gain or loss in the participant's account.

Deferred compensation plan participants are eligible to receive distributions from their account based on elected deferral periods that are consistent with the plans and applicable tax law.

Postretirement Benefit Plan

Year ended December 31 (in millions)	2018	2017
Benefit obligation	\$ 47	\$ 51
Amounts in accumulated other comprehensive income not yet recognized in benefits expense	\$ (163)	\$ (177)

We provide postretirement benefits to eligible employees through a retiree health and welfare benefits plan. The plan provides credit to employees for length of service provided before Comcast's acquisition of NBCUniversal.

The plan provides eligible employees who retire from NBCUniversal with an annual stipend for reimbursement of certain eligible healthcare costs. The amount of the stipend for an eligible retiree is fixed at a predetermined amount based on the retiree's years of service and whether the retiree is eligible for Medicare. In 2017, the plan was amended primarily to reduce the benefits of active employees who retire after December 31, 2017.

The plan is unfunded and substantially all of our postretirement benefit obligations are recorded to noncurrent liabilities. The expense we recognize for the plan is determined using certain assumptions, including the discount rate. The benefits expense we recognized for the plan was not material in any of the periods presented.

Pension Plans

We sponsor various nonqualified defined benefit pension plans for domestic employees. Since the future benefits have been frozen since the beginning of 2013, we did not recognize service costs related to our pension plans in any of the periods presented. The benefits expense we recognized for our defined benefit plans was not material for any period presented. In addition to the defined benefit plans we sponsor, we are also obligated to reimburse The General Electric Company ("GE") for future benefit payments to those participants who were vested in the supplemental pension plan sponsored by GE at the time of Comcast's acquisition of NBCUniversal. These pension plans are currently unfunded and we recorded a benefit obligation of \$312 million and \$338 million as of December 31, 2018 and 2017, respectively, which consists primarily of our obligations to reimburse GE.

Retirement Investment Plans

We sponsor several defined contribution retirement plans, including 401(k) plans, that allow eligible employees to contribute a portion of their compensation through payroll deductions in accordance with specified plan guidelines. We make contributions to the plans that include matching a percentage of the employees' contributions up to certain limits. In 2018, 2017 and 2016, expenses related to these plans totaled \$213 million, \$201 million and \$185 million, respectively.

Multiemployer Benefit Plans

We participate in various multiemployer benefit plans, including pension and postretirement benefit plans, that cover some of our employees and temporary employees who are represented by labor unions. We also participate in other multiemployer benefit plans that provide health and welfare and retirement savings benefits to active and retired participants. We make periodic contributions to these plans in accordance with the terms of applicable collective bargaining agreements and laws but do not sponsor or administer these plans. We do not participate in any multiemployer benefit plans for which we consider our contributions to be individually significant.

In 2018, 2017 and 2016, the total contributions we made to multiemployer pension plans were \$102 million, \$97 million and \$84 million, respectively. In 2018, 2017 and 2016, the total contributions we made to multiemployer postretirement and other benefit plans were \$183 million, \$152 million and \$136 million, respectively.

If we cease to be obligated to make contributions or were to otherwise withdraw from participation in any of these plans, applicable law would require us to fund our allocable share of the unfunded vested benefits, which is known as a withdrawal liability. In addition, actions taken by other participating employers may lead to adverse changes in the financial condition of one of these plans, which could result in an increase in our withdrawal liability.

Severance Benefits

We provide severance benefits to certain former employees. A liability is recorded when payment is probable, the amount is reasonably estimable, and the obligation relates to rights that have vested or accumulated. In 2018, 2017 and 2016, we recorded severance costs of \$146 million, \$108 million and \$165 million, respectively. Severance costs in 2016 included \$61 million of severance costs associated with the acquisition of DreamWorks Animation.

Note 13: Supplemental Financial Information

Cash Payments for Interest and Income Taxes

Year ended December 31 (in millions)	2018	2017	2016
Interest	\$ 408	\$ 517	\$ 548
Income taxes	\$ 430	\$ 282	\$ 208

Noncash Investing and Financing Activities

During 2018:

- we acquired \$1.4 billion of property and equipment and intangible assets that were accrued but unpaid
- we received noncash contributions from noncontrolling interests totaling \$391 million related to Universal Beijing Resort (see Note 7)

During 2017:

- we acquired \$325 million of property and equipment and intangible assets that were accrued but unpaid
- Comcast contributed its investment in Snap to us at its fair value, which was a noncash transaction (see Note 9)
- we and Comcast completed a senior notes exchange in the fourth quarter of 2017 (see Note 15)

During 2016:

- we acquired \$189 million of property and equipment and intangible assets that were accrued but unpaid
- Comcast contributed the net assets of DreamWorks Animation to us, which was primarily a noncash transaction (see Note 7)

Cash, Cash Equivalents and Restricted Cash

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported in the consolidated balance sheet to the total of the amounts reported in our consolidated statement of cash flows.

December 31 (in millions)	2018	2017
Cash and cash equivalents	\$ 1,444	\$ 2,347
Restricted cash included in other noncurrent assets, net	20	30
Cash, cash equivalents and restricted cash, end of year	\$ 1,464	\$ 2,377

Accumulated Other Comprehensive Income (Loss)

December 31 (in millions)	2018	2017
Unrealized gains (losses) on marketable securities	\$ —	\$ (233)
Deferred gains (losses) on cash flow hedges	12	10
Unrecognized gains (losses) on employee benefit obligations	140	126
Cumulative translation adjustments	102	77
Accumulated other comprehensive income (loss)	\$ 254	\$ (20)

Note 14: Commitments and Contingencies

Commitments

We enter into long-term commitments with third parties in the ordinary course of our business, including commitments to acquire film and television programming, obligations under various creative talent agreements, and various other television-related commitments. Some of our employees, including writers, directors, actors, technical and production personnel, and others, as well as some of our on-air and creative talent, are covered by collective bargaining agreements or works councils. As of December 31, 2018, the total number of employees covered by collective bargaining agreements was 10,000 full-time equivalent employees. Approximately 46% of these full-time equivalent employees were covered by collective bargaining agreements that have expired or are scheduled to expire during 2019.

The table below summarizes our minimum annual programming and talent commitments and our minimum annual rental commitments under operating leases for office space and equipment. Programming and talent commitments include acquired film

and television programming, including broadcast rights to sporting events, such as the Olympics, and other programming commitments, as well as various contracts with creative talent.

As of December 31, 2018 (in millions)	Programming and Talent Commitments	Operating Leases
2019	\$ 5,371	\$ 248
2020	\$ 5,524	\$ 232
2021	\$ 3,922	\$ 199
2022	\$ 4,314	\$ 168
2023	\$ 2,181	\$ 144
Thereafter	\$ 16,549	\$ 1,380

The table below presents our rental expense charged to operations.

Year ended December 31 (in millions)	2018	2017	2016
Rental expense	\$ 286	\$ 274	\$ 259

Contractual Obligation

We are party to a contractual obligation that involves an interest held by a third party in the revenue of certain theme parks. The arrangement provides the counterparty with the right to periodic payments associated with current period revenue which are recorded as an operating expense, and beginning in June 2017, the option to require NBCUniversal to purchase the interest for cash in an amount based on a contractual formula. The contractual formula is based on an average of specified historical theme park revenue at the time of exercise, which amount could be significantly higher than our carrying value. As of December 31, 2018, our carrying value was \$1.1 billion, and the estimated value of the contractual obligation was \$1.6 billion based on inputs to the contractual formula as of that date.

Note 15: Related Party Transactions

In the ordinary course of our business, we enter into transactions with Comcast.

We generate revenue from Comcast primarily from the distribution of our cable network programming, the fees received under retransmission consent agreements in our Broadcast Television segment and, to a lesser extent, the sale of advertising and our owned programming, and we incur expenses primarily related to advertising and various support services provided by Comcast to us.

In September 2016, as part of the Comcast cash management process, we and Comcast amended and restated our revolving credit agreements to increase the amount that we can borrow from Comcast and that Comcast can borrow from us from \$3 billion to \$5 billion and to extend the maturity date to 2026. Depending on the receivable or payable position, amounts owed by us to Comcast or to us by Comcast under the revolving credit agreements are presented under the captions “note payable to Comcast” and “note receivable from Comcast,” respectively, in our consolidated balance sheet and are presented as current since the amounts include daily borrowings and repayments throughout the year based on our working capital needs. The revolving credit agreements bear interest at floating rates equal to the interest rate calculation under Comcast’s revolving credit facility. The interest rate on Comcast’s revolving credit facility consists of a base rate plus a borrowing margin that is determined based on Comcast’s credit rating. As of December 31, 2018, the borrowing margin for London Interbank Offered Rate-based borrowings was 1.00%.

Comcast is also the counterparty to one of our contractual obligations. As of both December 31, 2018 and 2017, the carrying value of the liability associated with this contractual obligation was \$383 million.

Senior Notes Exchange

In October 2017, we and Comcast completed a debt exchange transaction. Comcast issued \$2.0 billion aggregate principal amount of new 3.97% senior notes due 2047, \$2.0 billion aggregate principal amount of new 4.00% senior notes due 2049, and \$1.5 billion aggregate principal amount of new 4.05% senior notes due 2052 in exchange for \$3.9 billion aggregate principal amount of certain series of outstanding senior notes issued by Comcast and us, including \$442 million of our 6.40% senior notes due 2040. The new notes are fully and unconditionally guaranteed by us and CCCL Parent. In connection with the exchange transaction, we issued \$610 million of 4.00% notes due 2049 to Comcast. The debt exchange transaction was accounted for as a debt extinguishment, and therefore we recorded a charge of \$157 million to interest expense upon retirement of the old notes.

NBCUniversal Media, LLC

The following tables present transactions with Comcast and its consolidated subsidiaries that are included in our consolidated financial statements.

Consolidated Statement of Income

Year ended December 31 (in millions)	2018	2017	2016
Transactions with Comcast and Consolidated Subsidiaries			
Revenue	\$ 2,156	\$ 1,837	\$ 1,742
Total costs and expenses	\$ (245)	\$ (214)	\$ (220)
Interest expense and investment and other income (loss), net	\$ (54)	\$ (250)	\$ (69)

Consolidated Balance Sheet

December 31 (in millions)	2018	2017
Transactions with Comcast and Consolidated Subsidiaries		
Receivables, net	\$ 464	\$ 326
Note receivable from Comcast	\$ 2,054	—
Accounts payable and accrued expenses related to trade creditors	\$ 78	\$ 54
Accrued expenses and other current liabilities	\$ 32	\$ 50
Note payable to Comcast	\$ 54	\$ 1,831
Long-term debt	\$ 701	\$ 610
Other noncurrent liabilities	\$ 410	\$ 389

Distributions to NBCUniversal Holdings

In addition to the transaction amounts presented in the table above, we make distributions to NBCUniversal Holdings on a periodic basis to enable its owners to meet their obligations to pay taxes on taxable income generated by our businesses. We also make quarterly distributions to NBCUniversal Holdings to enable it to make its required quarterly payments to NBCUniversal Enterprise at an initial annual rate of 8.25% on the \$9.4 billion aggregate liquidation preference of its preferred units. On March 1, 2023, and thereafter on every fifth anniversary of such date, this rate will reset to 7.44% plus the yield on actively traded United States Treasury securities having a 5 year maturity. These distributions are presented under the caption “distributions to member” in our consolidated statement of cash flows.

Share-Based Compensation

Comcast maintains share-based compensation plans that consist primarily of awards of restricted share units (“RSUs”) and stock options to certain employees and directors as part of its approach to long-term incentive compensation. Additionally, through its employee stock purchase plans, employees are able to purchase shares of Comcast common stock at a discount through payroll deductions. The cost associated with Comcast’s share-based compensation is based on an award’s estimated fair value at the date of grant and is recognized over the period in which any related services are provided. RSUs are valued based on the closing price of Comcast common stock on the date of grant and are discounted for the lack of dividends, if any, during the vesting period. Stock options are valued using the Black-Scholes option pricing model. Certain of our employees participate in these plans and the expense associated with their participation is settled in cash with Comcast. In 2018, 2017 and 2016, we recognized share-based compensation expense of \$151 million, \$133 million and \$99 million, respectively. As of December 31, 2018, we had unrecognized pretax compensation expense of \$270 million related to nonvested Comcast RSUs and unrecognized pretax compensation expense of \$23 million related to nonvested Comcast stock options that will be recognized over a weighted-average period of approximately 1.6 years and 1.0 years, respectively.

Report of Independent Registered Public Accounting Firm

**To the Board of Directors and Stockholders of
Comcast Corporation
Philadelphia, Pennsylvania**

Opinion on the Consolidated Financial Statement Schedule

We have audited the consolidated financial statements of Comcast Corporation and subsidiaries (the “Company”) as of December 31, 2018 and 2017, and for each of the three years in the period ended December 31, 2018, and the Company’s internal control over financial reporting as of December 31, 2018, and have issued our report thereon dated January 31, 2019; such consolidated financial statements and report are included elsewhere in this Form 10-K. Our audits also included the consolidated financial statement schedule of the Company listed in the Index at Item 15. This consolidated financial statement schedule is the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s consolidated financial statement schedule based on our audits. In our opinion, such consolidated financial statement schedule, when considered in relation to the consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

/s/ Deloitte & Touche LLP
Philadelphia, Pennsylvania
January 31, 2019

Report of Independent Registered Public Accounting Firm

**To the Member of NBCUniversal Media, LLC
New York, New York**

Opinion on the Consolidated Financial Statement Schedule

We have audited the consolidated financial statements of NBCUniversal Media, LLC and subsidiaries (the “Company”) as of December 31, 2018 and 2017, and for each of the three years in the period ended December 31, 2018, and have issued our report thereon dated January 31, 2019; such consolidated financial statements and report are included elsewhere in this Form 10-K. Our audits also included the consolidated financial statement schedule of the Company listed in the Index at Item 15. This consolidated financial statement schedule is the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s consolidated financial statement schedule based on our audits. In our opinion, such consolidated financial statement schedule, when considered in relation to the consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

/s/ Deloitte & Touche LLP
New York, New York
January 31, 2019

Comcast Corporation and Subsidiaries
Schedule II – Valuation and Qualifying Accounts
Year ended December 31, 2018, 2017 and 2016

Year ended December 31 (in millions)	Balance at Beginning of Year	Additions Charged to Costs and Expenses	Deductions from Reserves	Balance at End of Year
2018				
Allowance for doubtful accounts	\$ 288	\$ 616	\$ 552	\$ 352
Valuation allowance on deferred tax assets	377	367	112	632
2017				
Allowance for doubtful accounts	\$ 250	\$ 554	\$ 516	\$ 288
Valuation allowance on deferred tax assets	266	111	—	377
2016				
Allowance for doubtful accounts	\$ 226	\$ 558	\$ 534	\$ 250
Valuation allowance on deferred tax assets	342	23	99	266

NBCUniversal Media, LLC
Schedule II – Valuation and Qualifying Accounts
Year ended December 31, 2018, 2017 and 2016

Year ended December 31 (in millions)	Balance at Beginning of Year	Additions Charged to Costs and Expenses	Deductions from Reserves	Balance at End of Year
2018				
Allowance for doubtful accounts	\$ 88	\$ 32	\$ 21	\$ 99
Valuation allowance on deferred tax assets	87	13	27	73
2017				
Allowance for doubtful accounts	\$ 84	\$ 23	\$ 19	\$ 88
Valuation allowance on deferred tax assets	72	15	—	87
2016				
Allowance for doubtful accounts	\$ 69	\$ 26	\$ 11	\$ 84
Valuation allowance on deferred tax assets	71	23	22	72

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in Registration Statements on Form S-8 (Nos. 333-101645, 333-101295, 333-104385, 333-121082, 333-123059, 333-130844, 333-130845, 333-130847, 333-150976, 333-161468, 333-174416, 333-174417, 333-179638, 333-183008, 333-193903, 333-210085, 333-212716, 333-224456 and 333-224455) and Form S-3 (No. 333-212719) of our reports dated January 31, 2019, relating to the consolidated financial statements and consolidated financial statement schedule of Comcast Corporation, and the effectiveness of Comcast Corporation's internal control over financial reporting, appearing in this Annual Report on Form 10-K of Comcast Corporation for the year ended December 31, 2018.

/S/ DELOITTE & TOUCHE LLP

Philadelphia, Pennsylvania
January 31, 2019

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in Registration Statements on Form S-8 (Nos. 333-177681 and 333-215522) and Form S-3 (No. 333-212719-01) of our reports dated January 31, 2019, relating to the consolidated financial statements and consolidated financial statement schedule of NBCUniversal Media, LLC appearing in this Annual Report on Form 10-K of NBCUniversal Media, LLC for the year ended December 31, 2018.

/S/ DELOITTE & TOUCHE LLP

New York, New York
January 31, 2019

CERTIFICATIONS

I, Brian L. Roberts, certify that:

1. I have reviewed this Annual Report on Form 10-K of Comcast Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an Annual Report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: January 31, 2019

/s/ BRIAN L. ROBERTS

Name: Brian L. Roberts
Title: Chief Executive Officer

I, Michael J. Cavanagh, certify that:

1. I have reviewed this Annual Report on Form 10-K of Comcast Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an Annual Report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: January 31, 2019

/s/ MICHAEL J. CAVANAGH

Name: Michael J. Cavanagh
Title: Chief Financial Officer

CERTIFICATIONS

I, Brian L. Roberts, certify that:

1. I have reviewed this Annual Report on Form 10-K of NBCUniversal Media, LLC;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an Annual Report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: January 31, 2019

/s/ BRIAN L. ROBERTS

Name: Brian L. Roberts
Title: Principal Executive Officer

I, Michael J. Cavanagh, certify that:

1. I have reviewed this Annual Report on Form 10-K of NBCUniversal Media, LLC;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an Annual Report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: January 31, 2019

/s/ MICHAEL J. CAVANAGH

Name: Michael J. Cavanagh
Title: Principal Financial Officer

CERTIFICATION PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT

January 31, 2019

Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549

Ladies and Gentlemen:

The certification set forth below is being submitted in connection with the Annual Report on Form 10-K of Comcast Corporation (the "Report") for the purpose of complying with Rule 13a-14(b) or Rule 15d-14(b) of the Securities Exchange Act of 1934 (the "Exchange Act") and Section 1350 of Chapter 63 of Title 18 of the United States Code.

Brian L. Roberts, the Chief Executive Officer and Michael J. Cavanagh, the Chief Financial Officer of Comcast Corporation, each certifies that, to the best of his knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Exchange Act; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of Comcast Corporation.

/s/ BRIAN L. ROBERTS

Name: Brian L. Roberts
Title: Chief Executive Officer

/s/ MICHAEL J. CAVANAGH

Name: Michael J. Cavanagh
Title: Chief Financial Officer

CERTIFICATION PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT

January 31, 2019

Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549

Ladies and Gentlemen:

The certification set forth below is being submitted in connection with the Annual Report on Form 10-K of NBCUniversal Media, LLC (the "Report") for the purpose of complying with Rule 13a-14(b) or Rule 15d-14(b) of the Securities Exchange Act of 1934 (the "Exchange Act") and Section 1350 of Chapter 63 of Title 18 of the United States Code.

Brian L. Roberts, the Principal Executive Officer and Michael J. Cavanagh, the Principal Financial Officer of NBCUniversal Media, LLC, each certifies that, to the best of his knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Exchange Act; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of NBCUniversal Media, LLC.

/s/ BRIAN L. ROBERTS

Name: Brian L. Roberts
Title: Principal Executive Officer

/s/ MICHAEL J. CAVANAGH

Name: Michael J. Cavanagh
Title: Principal Financial Officer



SKU 10K-18