LIBERTY GLOBAL ®

U.K. Companies Act Annual Report
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LIBERTY GLOBAL PLC

2018 U.K. COMPANIES ACT ANNUAL REPORT

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* The appendix included in the version of this U.K. Companies Act Annual Report that was filed with Companies House. Liberty Global plc's Proxy Statement for the 2019 Annual General Meeting of Shareholders has also been filed with the U.S. Securities and Exchange Commission and a copy can be obtained, without charge, from the U.S. Securities and Exchange Commission's website at www.sec.gov or from our website at www.libertyglobal.com.

GROUP STRATEGIC REPORT

The following discussion and analysis, which should be read in conjunction with the consolidated financial statements, is intended to assist in providing an understanding of our results of operations and financial condition and is organized as follows:

- *Overview.* This section provides a general description of our business and recent events.
- *Results of Operations.* This section provides an analysis of our results of operations for the years ended December 31, 2018 and 2017.
- *Liquidity and Capital Resources.* This section provides an analysis of our corporate and subsidiary liquidity, consolidated statements of cash flows and contractual commitments.
- *Critical Accounting Policies, Judgments and Estimates.* This section discusses those material accounting policies that involve uncertainties and require significant judgment in their application.
- *Quantitative and Qualitative Disclosures about Market Risk.* This section provides discussion and analysis of the foreign currency, interest rate and other market risk that our company faces.
- *Risk Factors.* This section provides discussion and analysis of risks the company faces, including competition, technology, operating in overseas markets, financial and other risks.

The capitalized terms used throughout this annual report are defined in the notes to the consolidated financial statements for year ended December 31, 2018 included herein (the **Consolidated Financial Statements**). In the following text, the terms "we," "our," "our company" and "us" may refer, as the context requires, to Liberty Global (or its predecessor) or collectively to Liberty Global (or its predecessor) and its subsidiaries.

Unless otherwise indicated, convenience translations into U.S. dollars are calculated, and operational data (including subscriber statistics) is presented, as of December 31, 2018, and the amounts presented relate only to our continuing operations.

Overview

General

Liberty Global is a public limited company organized under the laws of England and Wales.

We are an international provider of video, broadband internet, fixed-line telephony and mobile communications services to residential customers and businesses in Europe. Our continuing operations currently provide residential and B2B communications services in (i) the U.K. and Ireland through Virgin Media, (ii) Belgium through Telenet and (iii) Switzerland, Poland and Slovakia through UPC Holding. In addition, following the December 31, 2016 completion of the VodafoneZiggo JV Transaction, we own a 50% noncontrolling interest in the VodafoneZiggo JV, which provides residential and B2B communications services in the Netherlands.

As further described in note 6 to the Consolidated Financial Statements, we (i) completed the sale of our operations in Austria on July 31, 2018, (ii) reached an agreement on May 9, 2018 to sell our operations in Germany, Romania, Hungary and the Czech Republic (exclusive of our DTH operations), (iii) reached an agreement on December 21, 2018 to sell the operations of UPC DTH and (iv) completed the Split-off Transaction on December 29, 2017. Accordingly, (a) our operations in Austria, Germany, Romania, Hungary and the Czech Republic and the operations of UPC DTH are presented as discontinued operations for all periods and (b) the entities comprising the LiLAC Group are presented as discontinued operations in our consolidated statement of profit or loss and cash flows for 2017. In the following discussion and analysis, the operating statistics, results of operations, cash flows and financial condition that we present and discuss are those of our continuing operations unless otherwise indicated.

Operations

At December 31, 2018, our continuing operations owned and operated networks that passed 25,106,900 homes and served 25,267,500 revenue generating units (**RGUs**), consisting of 8,559,200 video subscribers, 9,270,400 broadband internet subscribers and 7,437,900 fixed-line telephony subscribers. In addition, at December 31, 2018, our continuing operations served 6,001,500 mobile subscribers.

Video Services

Our video service is, and continues to be, one of the key foundations of our product offerings in our markets. Our cable operations offer multiple tiers of digital video programming and audio services starting with a basic video service. Subscribers to our basic video service pay a fixed monthly fee and receive digital or analog video channels (including a limited number of high definition (**HD**) channels) and several digital and analog radio channels and an electronic programming guide. In Poland where our basic digital service is unencrypted, the cost of our digital service is the same cost as the monthly fee of our analog service. In the markets where we encrypt our basic digital service, our digital service is generally offered at an incremental cost equal to or slightly higher than the monthly fee for our basic analog service. We tailor our video services in each country of operation based on programming preferences, culture, demographics and local regulatory requirements.

We also offer a variety of premium channel packages to meet the special interests of our subscribers. For an additional monthly charge, a subscriber may upgrade to one of our extended digital tier services and receive an increased number of video and radio channels, including the channels in the basic tier service and additional HD channels. Digital subscribers may also subscribe to one or more packages of premium channels for an additional monthly charge. Our channel offerings include general entertainment, sports, movies, documentaries, lifestyles, news, adult, children and ethnic and foreign channels.

Subscribers to our digital services also receive the channels available through our analog service. We offer limited analog video services in all of our broadband markets, except in the U.K. and Switzerland. In all of our broadband operations, we continue to upgrade our systems to expand our digital services and encourage our analog subscribers to convert to a basic digital or premium digital service.

Discounts to our monthly service fees are available to any subscriber who selects a bundle of two or more of our services (**bundled services**): video, internet, fixed-line telephony and, in most of our markets, mobile services. Bundled services consist of double-play for two services, triple-play for three services and, where available, quad-play for four services.

To meet customer demands, we have enhanced our video services with various products that enable our customers to control when, where and how they watch their programming. These products range from digital video recorders (**DVRs**) to multimedia home gateway systems such as "**Horizon TV**", as well as various mobile applications (**apps**). Horizon TV is a next generation multimedia home gateway (decoder box) based on a digital television platform that is capable of distributing video, voice and data content throughout the home and to multiple devices. It has a sophisticated user interface that enables customers to view and share, across multiple devices, linear channels, video-on-demand (**VoD**) programming and personal media content and to pause, replay and record programming. The Horizon TV gateway can act as an internet router that allows access to digital video content available on the television via other devices, such as laptops, smart phones and tablets.

In 2018, we introduced our latest set top box, often referred to by its project name "**Eos**", in Switzerland. The Eos set top box is capable of delivering ultra-high definition 4K and enhanced high dynamic range or HDR video content. It carries the next generation Horizon TV user interface that we call "**Horizon 4**". Horizon 4 is a multiscreen platform that combines linear television, VoD and mobile viewing. In addition to the features of Horizon TV, Horizon 4 allows customers to pause a program, series or movie and seamlessly continue watching from where they left off on another device, whether a television, tablet, smart phone or laptop. Customers also have access to cloud storage for up to 2,000 hours of recording, as well as our Repay TV service (described below). Customers can control their Eos set-top box with voice commands using the accompanying remote control. Horizon 4 is marketed under the name "UPC TV" in Switzerland, and it will be launched in other markets over the course of 2019, where it will be marketed under different brand names.

For our Horizon TV and Horizon 4 subscribers, we offer various features and functionalities, including television apps for various online services (such as YouTube, Netflix, social platforms, sports experience, music, news and games). In almost all of our operations, we also offer an online mobile app for viewing on a second screen that is based on our "**Horizon Go**" platform. Horizon Go is available on mobile devices (iOS, Android and Windows) and via an internet portal and allows video customers to view linear channels, VoD and Replay TV, with a substantial part of this content available outside of the home. In a number of markets, Horizon Go also has a "Download to Go" feature that allows the consumer to take content with them on their device. For Horizon TV and Horizon 4 customers, when in the home the second screen device can act as a remote control. Through Horizon Go, customers have the ability to remotely schedule the recording of a television program on their Horizon TV or Horizon 4 box at home.

We offer Horizon TV in Switzerland, Ireland and Poland. In most of our other European operations, we provide a Horizon TV-like experience through a remotely upgraded version of the software on the customer's set-top box. After the upgrade, these boxes offer several features of the Horizon TV product. We refer to this upgrade as "**Horizon Lite**", although it is locally marketed as Horizon TV, except in Belgium where it is marketed as "Digital TV". Some of the Horizon TV features are not available on our Horizon Lite systems, such as recommendation-based content and the ability to access video content on other devices in the home. We intend to continue to improve the Horizon TV user experience with new functionality and software updates.

In the U.K., we offer a multimedia home gateway based on the TiVo platform under a strategic partnership agreement with TiVo Inc. Through the TiVo platform, we offer our U.K. customers a basic set-top box or the Virgin Media V6 box. Both boxes provide television and broadband internet capabilities. Similar to Horizon 4, the Virgin Media V6 box combines ultra high-definition 4K video, including high dynamic range, with improved streaming functionalities and more processing power. The Virgin Media V6 box allows customers to record six channels simultaneously while watching a seventh. Customers can also start watching programming on one television and pick up where they left off on other TiVo boxes in another room or through an app on their smart phones and tablets. Over 50% of our U.K. customers have the Virgin Media V6 box. In addition to the video service on their TiVo gateway device, our customers in the U.K. also have access to a comprehensive internet streaming video service called “Virgin TV Go”. This service, which is available via a mobile app or an internet portal, allows our video customers to stream real-time TV channels and watch VoD content anywhere they have an internet connection. Our enhanced video customers can also download certain on-demand programs to their compatible devices for off-line viewing via the Virgin TV Go app.

In Belgium, Telenet is planning to deploy Horizon 4 in 2019, as well as an enhanced multiscreen service based on Horizon Go. Its current digital video product “Digital TV” functions similar to our Horizon Lite service. Telenet also offers customers access to live TV streaming and various other content sources such as VoD via its “Yelo Play” app, which is available via iOS, Android and Windows smart phones and tablets. Digital TV set-top boxes and Yelo Play offer a Horizon TV-like user interface that allow Telenet's enhanced video customers to remotely manage their DVR, view programs remotely (up to seven days after the original broadcast) and access VoD with a laptop, smart phone or tablet in or out of the home.

One of our key video services is “**Replay TV**”. Replay TV records virtually all programs across numerous linear channels in the countries where this service is available. The recordings are available up to seven days after the original broadcast. This allows our customers to catch up on their favorite television shows without having to set their DVR or browse separate menus on their set-top boxes. Instead, customers can open the electronic programing guide, scroll back and replay linear programming instantly. Replay TV also allows our customers to replay a television program from the start even while the live broadcast is in progress. Replay TV is one of the most used and appreciated features on our platforms. It is accessible in all of our markets, except in the U.K., through our Horizon services, and in some of our markets also via Horizon Go.

In most of our markets, we offer transactional VoD giving subscribers access to thousands of movies and television series. In several of our markets, our subscription VoD service is included in our enhanced video services accessed through the Horizon TV platform. This service is tailored to the specific market based on available content, consumer preferences and competitive offers and includes various programming, such as music, kids, documentaries, adult, sports and TV series. In Belgium, the service is marketed as “Play” and “Play More”. We continue to develop our VoD services to provide a growing collection of programming from local and international suppliers, such as ABC/Disney, A+E Networks, NBC/Universal, CBS/Paramount, Discovery, the BBC, Warner and Sony, among others. Customers who subscribe to an extended digital tier generally receive a VoD enabled set-top box without an additional monthly charge.

Subscribers access our enhanced video service by renting a set-top box with a smart card from our operators, or without a set-top box if a subscriber is only using our basic video service. Where Horizon TV is available, a subscriber to our enhanced video services has the option, for an incremental monthly charge, to upgrade the standard digital set-top box to a Horizon TV box or Horizon 4 for our Switzerland customers (both of which have HD DVR capabilities and other additional features). No set-top box or smart card, however, is required to receive our basic digital services in our unencrypted footprint in Poland. In addition, expanded channel packages and premium channels and services are available for an incremental monthly fee in all of our markets.

WiFi and Internet Services

Connectivity is a building block for vibrant communities. Our fiber-rich broadband network is the backbone of our business and the basis of our connectivity strategy. To meet our customers’ expectations to be seamlessly connected, we are investing in the expansion of our broadband network, mobile and WiFi solutions and customer premises equipment.

Internet speed is of crucial importance to our customers, as they spend more time streaming video and other bandwidth-heavy services on multiple devices. Our extensive broadband network enables us to deliver ultra high-speed internet service across our markets. Our residential subscribers access the internet via cable modems connected to their internet capable devices, or wirelessly via a WiFi gateway device. We offer multiple tiers of broadband internet service ranging from a basic service of 50 Mbps in Slovakia to an ultra high-speed internet service of 500 Mbps in Switzerland, Poland and Slovakia.

The speed of service depends on the location and the tier of service selected. In addition, by leveraging our existing fiber-rich broadband networks and our Network Extensions, we are in position to deliver gigabit services by deploying the next generation DOCSIS 3.1 technology. In 2018, we launched this technology in Warsaw, Poland. Customers in Warsaw may subscribe to our ultra high-speed internet service of 1 Gbps. We intend to expand this technology in additional markets in 2019. By using DOCSIS 3.1, we can extend our download speeds to at least 1 Gbps where deployed. DOCSIS 3.1 technology improves not only our internet speed offers but also to allows for network growth. DOCSIS technology is an international standard that defines the requirements for data transmission over a cable system. Currently, our ultra high-speed internet service is based primarily on DOCSIS 3.0 technology.

Our internet service generally includes email, address book and parental controls. We offer value-added broadband services in certain of our markets for an incremental charge. These services include security (e.g., anti-virus, anti-spyware, firewall and spam protection) and online storage solutions and web spaces. In many of our markets, we offer mobile broadband services with internet access as described below. Subscribers to our internet service pay a monthly fee based on the tier of service selected. In addition to the monthly fee, customers pay an activation service fee upon subscribing to an internet service. This one-time fee may be waived for promotional reasons. We determine pricing for each different tier of internet service through an analysis of speed, market conditions and other factors.

Our "**Connect Box**" is a dedicated connectivity device that delivers superior in-home WiFi coverage. It is our next generation WiFi and telephony gateway that enables us to maximize the impact of our ultrafast broadband networks by providing reliable wireless connectivity anywhere in the home. It has an automatic WiFi optimization function, which selects the best possible wireless frequency at any given time. This gateway can be self-installed and allows customers to customize their home WiFi service. Our Connect Box is available in all our markets and currently over 60% of our customers have a Connect Box. In addition to our markets, we distribute Connect Box to other markets in Europe, Latin America and the Caribbean, connecting almost 12 million homes. Robust wireless connectivity is increasingly important with our customers spending more and more time using bandwidth-heavy services on multiple devices. In Belgium, Switzerland and the U.K., we also offer a connect app that allows our customers to find their best WiFi access. In addition, WiFi boosters are available in all our markets to optimize connectivity. We are also moving forward to bring to market our new Gigabit Connect Box based on DOCSIS 3.1 technology that will provide even better in-home WiFi service to customers.

In all of our markets, we have deployed community WiFi via routers in the home (the **Community WiFi**), which provides a secure access to the internet for our customers. Community WiFi is enabled by a cable modem WiFi access point (**WiFi modem**) in the Connect Box, the set-top box or a Horizon box of our internet customers. The Community WiFi is created through the sharing of access to the public channel of our customers' home wireless routers. The public channel is a separate network from the secure private network used by the customer within the home and is automatically enabled when the WiFi modem is installed. Public WiFi access points (covering train stations, hotels, bars, restaurants and other public places) are also available for no additional cost.

Mobile Services

Mobile services are another key building block for us to provide customers with seamless connectivity. We offer mobile services as an MVNO over third-party networks in the U.K., Switzerland, Ireland and Poland. Following the February 2016 acquisition of BASE, Telenet became a mobile network provider in Belgium. Where appropriate, we will add MVNO arrangements or acquire or partner with mobile service providers with their own networks in all our broadband communication markets.

In Switzerland and Ireland, we provide our mobile telephony services as full MVNOs through partnerships with a third-party mobile network operator in their respective footprints of our country operations. These operations lease the third-party's radio access network and own the core network, including switching, backbone and interconnections. These arrangements permit us to offer our customers in these markets mobile services without having to build and operate a cellular radio tower network. In 2017, our mobile operations in the U.K. moved from a light MVNO to a full MVNO arrangement due to a revised agreement with the third-party network provider. The migration of our U.K. mobile customers to the full MVNO arrangement is expected to be completed in 2019. In Poland, we provide mobile telephony as a light MVNO to certain legacy subscribers. In this case, we lease the core network as well as the radio access network from a mobile network operator. This arrangement permits our Poland customers to have access to the third-party mobile communications services while we maintain the customer relationship. We plan to launch a new mobile service in Poland as a full MVNO in mid-2019.

Our MVNO partners are:

Country	Partner
U.K.	EE
Switzerland	Swisscom (1)
Ireland	Three (Hutchison)
Poland	Orange/Play

(1) Our Switzerland operations migrated to the Swisscom AG (**Swisscom**) network the beginning of 2019.

Where mobile services are available, subscribers pay varying monthly fees depending on whether the mobile service is combined with our cable services or includes mobile data services via mobile phones, tablets or laptops. We offer our customers the option to purchase mobile handsets and, in most of our markets, make such purchase pursuant to a contract independent of their mobile services contract. We refer to these arrangements as split contracts. In Belgium, for those subscribers on Telenet's own network, it is offering more flexible bundles adjusted to customers' needs so they can use the full capacity of their package, regardless of their appetite to use either more data, minutes or text messages. As a mobile network provider, Telenet also has agreements with other mobile providers to use its mobile network for their mobile offerings.

Our mobile services typically include voice, short message service (or **SMS**) and internet access. Calls, both within and out of network, incur a charge or are covered under a postpaid monthly service plan. Our mobile services are primarily on a postpaid basis with customers subscribing to services for periods ranging from activation for a SIM-only contract to up to 24 months (or 36 months in the U.K.), with the latter often taken with a subsidized mobile handset. In Belgium and Switzerland, however, our postpaid service is offered without a minimum contract term. In the U.K. and Belgium, we also offer a prepaid service, where the customers pay in advance for a pre-determined amount of airtime or data and generally have no minimum contract term. In almost all of our markets, subscribers to a double- or triple-play bundle receive a discount on their mobile service fee.

Telephony Services

Multi-feature telephony services are available through voice-over-internet-protocol (**VoIP**) technology in most of our broadband communication markets. In the U.K., we also provide traditional circuit-switched telephony services. We pay interconnect fees to other telephony and internet providers when calls by our subscribers terminate on another network and receive similar fees from providers when calls by their users terminate on our network through interconnection points.

Our telephony service may be selected in several of our markets on a standalone basis and in all of our markets in combination with one or more of our other services. Our telephony service includes a basic fixed-line telephony product for line rental and various calling plans, which may consist of any of the following: unlimited network, national or international calling, unlimited off-peak calling and minute packages, including calls to fixed and mobile phones. We also offer value added services, such as a personal call manager, unified messaging and a second or third phone line at an incremental cost.

Multiple Dwelling Units and Partner Networks

Pursuant to an agreement executed on June 28, 2008 (the **PICs Agreement**) with four associations of municipalities in Belgium (the pure intercommunales or **PICs**), Telenet leases the PICs broadband communications network and, accordingly, makes its services available to all of the homes passed by the cable network owned by the PICs. Telenet has a direct customer relationship with the basic and enhanced video subscribers on the PICs network. Pursuant to the PICs Agreement, Telenet has full rights to use substantially all of the PICs network under a long-term capital lease. Unless extended, the PICs Agreement will expire on September 23, 2046, and cannot be terminated earlier (except in the case of non-payment or bankruptcy of Telenet). For additional information on the PICs Agreement, see note 20 to the Consolidated Financial Statements.

For over half of the basic video subscribers of UPC Switzerland, UPC Switzerland maintains billing relationships with landlords or housing associations and provides basic video service to the tenants. The landlord or housing association administers the billing for the basic video service with their tenants and manages service terminations for their rental units. When tenants select triple-play bundles with or without mobile service from UPC Switzerland, they then migrate to a direct billing relationship with us.

UPC Switzerland offers enhanced video, broadband internet and telephony services directly to the video cable subscribers of those partner networks that enter into service operating contracts with UPC Switzerland. UPC Switzerland has the direct customer billing relationship with these subscribers. By permitting UPC Switzerland to offer some or all of its enhanced video, broadband internet and telephony products directly to those partner network subscribers, UPC Switzerland's service operating contracts have expanded the addressable markets for UPC Switzerland's digital products. In exchange for the right to provide digital products directly to the partner network subscribers, UPC Switzerland pays to the partner network a share of the revenue generated from those subscribers. UPC Switzerland also provides network maintenance services and engineering and construction services to its partner networks.

Business Services

In addition to our residential services, we offer business services in all of our operations. For business and public sector organizations, we provide a complete range of voice, advanced data, video, wireless and cloud-based services, as well as mobile and converged fixed-mobile services. Our business customers include SOHO (generally up to five employees), small business and medium and large enterprises. We also provide business services on a wholesale basis to other operators.

Our business services are designed to meet the specific demands of our business customers with a wide range of services, including increased data transmission speeds and virtual private networks. These services fall into five broad categories:

- VoIP and circuit-switch telephony, hosted private branch exchange solutions and conferencing options;
- data services for internet access, virtual private networks and high capacity point-to-point services;
- wireless services for mobile voice and data, as well as managed WiFi networks;
- video programming packages and select channel lineups for targeted industries; and
- value added services, including webhosting, managed security systems and storage and cloud enabled software.

Our intermediate to long-term strategy is to enhance our capabilities and offerings in the business sector so we become a preferred provider in the business market. To execute this strategy, customer experience and strategic marketing play a key role.

Our business services are provided to customers at contractually established prices based on the size of the business, type of services received and the volume and duration of the service agreement. SOHO and small business customers pay business market prices on a monthly subscription basis to receive enhanced service levels and business features that support their needs. For more advanced business services, these customers generally enter into a service agreement. For medium to large business customers, we enter into individual agreements that address their needs. These agreements are generally for a period of at least one year.

Investments—VodafoneZiggo JV

We own a 50% interest in the VodafoneZiggo JV, which is a leading Dutch company that provides fixed, mobile and integrated communication and entertainment services to consumers and businesses in the Netherlands. In connection with the formation of the VodafoneZiggo JV, we entered into a shareholders agreement with Vodafone providing for the governance of the VodafoneZiggo JV, including decision-making process, information access, dividend policy and non-compete provisions. It also provides for restrictions on transfer of interests in the VodafoneZiggo JV and exit arrangements. Under the dividend policy, the VodafoneZiggo JV is required to distribute all unrestricted cash to Vodafone and us, subject to minimum cash requirements and financing arrangements. We also entered into a framework agreement with the VodafoneZiggo JV to provide access to each partner's expertise in the telecommunications business. For additional information on the above agreements, see note 8 to the Consolidated Financial Statements.

The fiber-rich broadband network of the VodafoneZiggo JV passes 7.2 million homes. The VodafoneZiggo JV also offers nationwide mobile coverage. At December 31, 2018, the VodafoneZiggo JV had 9.7 million RGUs of which 3.9 million were video, 3.3 million were fixed broadband internet and 2.5 million were fixed-line telephony. In addition, the VodafoneZiggo JV had 5.0 million mobile (including 0.8 million prepaid) customers. Besides its residential services, the VodafoneZiggo JV offers extensive business services throughout the Netherlands. The operations of the VodafoneZiggo JV are subject to various regulations, which are described below under *Regulatory Matters—The Netherlands*.

The VodafoneZiggo JV's customers continue to have access to Horizon TV and its functionalities (marketed as "Ziggo TV"), including Replay TV, the Ziggo Go app, pause live TV and VoD, 400 Mbps nationwide broadband internet and an extensive WiFi Community network. The VodafoneZiggo JV also has its own sports channel, Ziggo Sport, and offers exclusive programming, such as HBO. Approximately 1.2 million customers use the Connect Box for their in-home WiFi service. They also have access to Vodafone's nationwide long-term evolution wireless service, also called "4G" (referred to herein as **LTE**) services, under either a prepaid or postpaid service plan. The VodafoneZiggo JV provides its mobile services under various licenses. The license for its 3G services expires in 2020. The bandwidth under this license will be re-auctioned in late 2019. With its mobile services, the VodafoneZiggo JV is able to offer quad-play bundles and converged services to its residential and business customers.

For all its services, the VodafoneZiggo JV competes primarily with the provision of similar services from the incumbent telecommunications operator Koninklijke KPN N.V. (**KPN**). KPN offers (1) internet protocol television (**IPTV**) over fiber optic lines where the fiber is to the home, cabinet, or building or to the node networks (fiber-to-the-home/-cabinet/-building/-node is referred to herein as **FTTx**) and through broadband internet connections using digital subscriber lines (**DSL**) or very high-speed DSL technology (**VDSL**) or an enhancement to VDSL called "vectoring", (2) digital terrestrial television (**DTT**), and (3) LTE services. Where KPN has enhanced its VDSL system, it offers broadband internet with download speeds of up to 200 Mbps and on its FTTx networks, it offers download speeds of up to 500 Mbps. Its ability to offer a bundled triple-play of video, broadband internet and telephony services and fixed-mobile convergence services creates significant competitive pressure on the VodafoneZiggo JV's operations, including the pricing and bundling of its video products. KPN's video services include many of the interactive features that the VodafoneZiggo JV offers its subscribers, including pausing live TV, replay and third party apps. Portions of the VodafoneZiggo JV's network have been overbuilt by KPN's and other providers' FTTx networks and expansion of these networks is expected to continue. Another significant competitor is the Netherlands operations of Deutsche Telekom.

Discontinued Operations

We currently own and manage the Vodafone Disposal Group operations (Germany, Hungary, Romania and the Czech Republic). On May 9, 2018, we entered into an agreement with Vodafone pursuant to which Vodafone would acquire the Vodafone Disposal Group, subject to various conditions. We expect the disposition of the Vodafone Disposal Group to be completed in mid-2019 and, accordingly, we have reported it as discontinued operations for financial reporting purposes. Below is a description of the Vodafone Disposal Group business in 2018.

The Vodafone Disposal Group consists of, in terms of video subscribers, the largest cable network in each of the Czech Republic and Hungary and the second largest cable network in each of Germany and Romania. In each of these operations, the core offer is triple-play services. Customers who subscribe to triple play services or double-play services receive a discount to their monthly service fees. The broadband network of the Vodafone Disposal Group passes 19.7 million homes. The operations in Germany and Hungary also offer mobile services. In addition to the residential services, each of the operations in the Vodafone Disposal Group offers business services in their respective countries.

The Vodafone Disposal Group cable operations offer multiple tiers of digital video programming and audio services starting with a basic video service. In each market, the basic digital service is unencrypted. Extended digital tiers are available for an additional monthly charge and include additional video and radio channels, including those in the basic tier services, and additional HD channels. Vodafone Disposal Group customers have access to Horizon TV or Horizons Lite, depending on location, Horizon Go and, except in Germany, Replay TV. The operations have an extensive WiFi Community network, and the maximum broadband speeds available are 400 Mbps in Germany and 500Mbps in the other countries. In addition, up to 1 Gbps is available in select cities of Germany. Through MVNO arrangements, customers in Germany and Hungary have access to LTE services and postpaid service plans. With these mobile services, the German and Hungarian operations are able to offer quad-play bundles and converged services to residential and business customers.

Approximately two-thirds of Unitymedia's video customers are in multiple dwelling units where Unitymedia has the billing relationship with the landlord or housing association or with a third-party (**Professional Operator**) that operates and administers the in-building network on behalf of housing associations. Many of these agreements, such as the one with Tele Columbus Multimedia GmbH, allow Unitymedia to market its digital video, broadband internet and fixed-line telephony services directly to the Professional Operator's subscriber base. Professional Operators may procure the basic video signals from Unitymedia at volume-based discounts and will generally resell them to housing associations with whom the operator maintains the customer relationship.

Unitymedia has entered into various long-term agreements with the incumbent telecommunications operator, Deutsche Telekom for the lease of cable duct space and hubs, as well as use of fiber optic transmission systems, towers and facility space. In addition, Unitymedia purchases a portion of the electricity required for the operation of its networks through Deutsche Telekom under such agreements. Unitymedia's ability to offer its broadband communications services to customers is dependent on the agreements with Deutsche Telekom. These agreements are long-term and may only be terminated under certain limited exceptions. Any termination, however, would have a material adverse effect on the operations of Unitymedia. For information on a legal action that Unitymedia commenced against Deutsche Telekom's affiliate in December 2012 regarding these agreements, see note 20 to the Consolidated Financial Statements.

Strategy and management focus

From a strategic perspective, we are seeking to build broadband communications and mobile businesses that have strong prospects for future growth. As discussed further under *Liquidity and Capital Resources — Capitalization* below, we also seek to maintain our debt at levels that provide for attractive equity returns without assuming undue risk.

We strive to achieve organic revenue and customer growth in our operations by developing and marketing bundled entertainment and information and communications services, and extending and upgrading the quality of our networks where appropriate. As we use the term, organic growth excludes foreign currency translation effects (**FX**) and the estimated impact of acquisitions and dispositions. While we seek to increase our customer base, we also seek to maximize the average revenue we receive from each household by increasing the penetration of our digital video, broadband internet, fixed-line telephony and mobile services with existing customers through product bundling and upselling.

We currently are engaged in certain network extension programs across our footprint, which we collectively refer to as the "**Network Extensions**." During 2018, pursuant to the Network Extensions, our continuing operations connected approximately 657,000 additional residential and commercial premises (excluding upgrades) to our two-way networks, including approximately 481,000 residential and commercial premises connected by Virgin Media in the U.K. and Ireland. We expect to continue the Network Extensions in 2019. Depending on a variety of factors, including the financial and operational results of our new build programs, the Network Extensions may be continued, modified or cancelled at our discretion.

The capital costs associated with the Network Extensions, which include the costs to build out the networks and the purchase and installation of related customer premises equipment, are expected to be significant. For information regarding our expected property and equipment additions during 2019, see *Liquidity and Capital Resources — Consolidated Statements of Cash Flows* below.

Our assessment of the impacts of the Network Extensions are subject to competitive, economic, regulatory and other factors outside of our control.

Competition and Other External Factors

We are experiencing significant competition from incumbent telecommunications operators, DTH operators and/or other providers in all of our markets. The significant competition we are experiencing, together with macroeconomic and regulatory factors, has adversely impacted our revenue, RGUs and/or average monthly subscription revenue per average cable RGU or mobile subscriber, as applicable (**ARPU**), particularly in Switzerland and Belgium. In addition, the VodafoneZiggo JV is facing significant competition in the Netherlands, particularly with respect to its mobile operations. For additional information regarding the revenue impact of changes in the RGUs and ARPU of our consolidated reportable segments, see *Discussion and Analysis of our Reportable Segments* below.

In addition to competition, our operations are subject to macroeconomic, political and other risks that are outside of our control. For example, on June 23, 2016, the U.K. held a referendum in which U.K. citizens voted in favor of, on an advisory basis, an exit from the E.U. commonly referred to as "**Brexit**." Following the failure to reach a separation deal by the original deadline of March 29, 2019, the E.U. granted the U.K. an extension until October 31, 2019. Uncertainty remains as to what kind of separation agreement, if any, may be agreed and approved by the U.K. Parliament. It is possible that the U.K. will again fail to agree to a separation agreement with the E.U. by the new October 31, 2019 deadline which, absent another extension, would require the U.K. to leave the E.U. under a so-called "hard Brexit" or "no-deal Brexit" without agreements on trade, finance and other key elements. The foregoing has caused considerable uncertainty as to Brexit's impact on the free movement of goods, services, people, data and capital between the U.K. and the E.U., customer behavior, economic conditions, interest rates, currency exchange rates and availability of capital. The effects of Brexit could adversely affect our business, results of operations, financial condition and liquidity. For additional information regarding the potential impact of Brexit on our company, see *Risk Factors* included elsewhere in this annual report.

Results of Operations

We have completed a number of transactions that impact the comparability of our 2018 and 2017 results of operations, the most notable of which is the SFR BeLux Acquisition on June 19, 2017. For further information, see note 5 to the Consolidated Financial Statements.

In the following discussion, we quantify the estimated impact of acquisitions (the **Acquisition Impact**) on our operating results. The Acquisition Impact represents our estimate of the difference between the operating results of the periods under comparison that is attributable to an acquisition. In general, we base our estimate of the Acquisition Impact on an acquired entity's operating results during the first three to twelve months following the acquisition date, as adjusted to remove integration costs and any other material unusual or nonoperational items, such that changes from those operating results in subsequent periods are considered to be organic changes. Accordingly, in the following discussion, (i) organic variances attributed to an acquired entity during the first 12 months following the acquisition date represent differences between the Acquisition Impact and the actual results and (ii) the calculation of our organic change percentages includes the organic activity of an acquired entity relative to the Acquisition Impact of such entity.

Changes in foreign currency exchange rates have a significant impact on our reported operating results as all of our operating segments have functional currencies other than the U.S. dollar. Our primary exposure to FX risk during the year ended December 31, 2018 was to the British pound sterling and euro as 53.2% and 32.0% of our reported revenue during the period was derived from subsidiaries whose functional currencies are the British pound sterling and euro, respectively. In addition, our reported operating results are impacted by changes in the exchange rates for certain other local currencies in Europe. The portions of the changes in the various components of our results of operations that are attributable to changes in FX are highlighted under *Discussion and Analysis of our Reportable Segments* and *Discussion and Analysis of our Consolidated Operating Results* below. For information regarding our foreign currency risks and the applicable foreign currency exchange rates in effect for the periods covered by this annual report, see *Quantitative and Qualitative Disclosures about Market Risk — Foreign Currency Risk* below.

The amounts presented and discussed below represent 100% of each of our consolidated reportable segment's revenue and Adjusted EBITDA. As we have the ability to control Telenet, we consolidate 100% of its revenue and expenses in our consolidated statements of profit or loss despite the fact that third parties own a significant interest. The noncontrolling owners' interests in the operating results of Telenet and other less significant majority-owned subsidiaries are reflected in net profit or loss attributable to noncontrolling interests in our consolidated statements of profit or loss.

As further described in note 2 to the Consolidated Financial Statements, we adopted IFRS 15 on January 1, 2018 using the cumulative effect transition method. As such, the information included in the Consolidated Financial Statements and notes thereto for 2017 has not been restated and continues to be reported under the accounting standards in effect for 2017. In order to provide a more meaningful comparison of our results of operations, in the following discussion and analysis of our results of operations for 2018, as compared to 2017, we present our revenue, expenses and Adjusted EBITDA for 2017 on a pro forma basis that gives effect to the adoption of IFRS 15 as if such adoption had occurred on January 1, 2017.

The following table presents (i) the impact of the adoption of IFRS 15 on the revenue and Adjusted EBITDA of our consolidated reportable segments for the year ended December 31, 2018 and (ii) the pro forma impact of the adoption of IFRS 15 on the revenue and Adjusted EBITDA of our consolidated reportable segments for the year ended December 31, 2017 as if such adoption had occurred on January 1, 2017.

	Year ended December 31,	
	2018	**2017**
		pro forma
	in millions	
Increase (decrease) to revenue:		
U.K./Ireland	$ 34.3	$ (12.9)
Belgium	(9.0)	(3.7)
Switzerland	1.0	(3.9)
Central and Eastern Europe	(0.2)	(1.0)
Total increase (decrease) to revenue	$ 26.1	$ (21.5)
Increase (decrease) to Adjusted EBITDA:		
U.K./Ireland	$ 27.1	$ (26.1)
Belgium	(9.0)	(3.7)
Switzerland	(0.2)	(2.9)
Central and Eastern Europe	(0.5)	0.8
Total increase (decrease) to Adjusted EBITDA	$ 17.4	$ (31.9)

Discussion and Analysis of our Reportable Segments

General

All of our reportable segments derive their revenue primarily from residential and B2B communications services, including video, broadband internet, fixed-line telephony and mobile services. For detailed information regarding the composition of our reportable segments and how we define and categorize our revenue components, see note 18 to the Consolidated Financial Statements. For information regarding the results of operations of the VodafoneZiggo JV, refer to *Discussion and Analysis of our Consolidated Operating Results - Share of results of affiliates* below.

The tables presented below in this section provide the details of revenue and Adjusted EBITDA of our consolidated reportable segments for 2018, as compared to 2017. As discussed above, amounts for 2017 are presented on a pro forma basis that gives effect to the adoption of IFRS 15 as if such adoption had occurred on January 1, 2017. These tables present (i) the amounts reported for the current and comparative periods, (ii) the reported U.S. dollar change and percentage change from period to period and (iii) the organic U.S. dollar change and percentage change from period to period. For our organic comparisons, which exclude the impact of FX, we assume that exchange rates remained constant at the prior-period rate during all periods presented. We also provide a table showing the Adjusted EBITDA margins of our consolidated reportable segments for 2018 and 2017 at the end of this section.

Most of our revenue is derived from jurisdictions that administer VAT or similar revenue-based taxes. Any increases in these taxes could have an adverse impact on our ability to maintain or increase our revenue to the extent that we are unable to pass such tax increases on to our customers. In the case of revenue-based taxes for which we are the ultimate taxpayer, we will also experience increases in our operating costs and expenses and corresponding declines in our Adjusted EBITDA and Adjusted EBITDA margins to the extent of any such tax increases.

We pay interconnection fees to other telephony providers when calls or text messages from our subscribers terminate on another network, and we receive similar fees from such providers when calls or text messages from their customers terminate on our networks or networks that we access through MVNO or other arrangements. The amounts we charge and incur with respect to fixed-line telephony and mobile interconnection fees are subject to regulatory oversight. To the extent that regulatory authorities introduce fixed-line or mobile termination rate changes, we would experience prospective changes and, in very limited cases, we could experience retroactive changes in our interconnect revenue and/or costs. The ultimate impact of any such changes in termination rates on our Adjusted EBITDA would be dependent on the call or text messaging patterns that are subject to the changed termination rates.

We are subject to inflationary pressures with respect to certain costs and foreign currency exchange risk with respect to costs and expenses that are denominated in currencies other than the respective functional currencies of our consolidated reportable segments. Any cost increases that we are not able to pass on to our subscribers through rate increases would result in increased pressure on our operating margins. For additional information regarding our foreign currency exchange risks see *Quantitative and Qualitative Disclosures about Market Risk — Foreign Currency Risk* below.

Revenue of our Reportable Segments

General. While not specifically discussed in the below explanations of the changes in the revenue of our consolidated reportable segments, we are experiencing significant competition in all of our markets. This competition has an adverse impact on our ability to increase or maintain our RGUs and/or ARPU.

Variances in the subscription revenue that we receive from our customers are a function of (i) changes in the number of RGUs or mobile subscribers outstanding during the period and (ii) changes in ARPU. Changes in ARPU can be attributable to (a) changes in prices, (b) changes in bundling or promotional discounts, (c) changes in the tier of services selected, (d) variances in subscriber usage patterns and (e) the overall mix of cable and mobile products within a segment during the period. In the following discussion, we discuss ARPU changes in terms of the net impact of the above factors on the ARPU that is derived from our video, broadband internet, fixed-line telephony and mobile products.

Revenue — 2018 compared to 2017

	Year ended December 31,		Increase (decrease)		Organic increase (decrease)	
	2018	2017	$	%	$	%
		pro forma				
	in millions, except percentages					
U.K./Ireland	$ 6,875.1	$ 6,385.8	$ 489.3	7.7	$ 249.5	3.9
Belgium	2,991.6	2,853.3	138.3	4.8	(29.7)	(1.0)
Switzerland	1,326.0	1,366.2	(40.2)	(2.9)	(50.6)	(3.7)
Central and Eastern Europe	492.2	466.5	25.7	5.5	4.5	1.0
Central and Corporate (a)	274.2	189.4	84.8	44.8	59.9	28.9
Intersegment eliminations	(3.2)	(14.6)	11.4	N.M.	11.4	N.M.
Total	$ 11,955.9	$ 11,246.6	$ 709.3	6.3	$ 245.0	2.2

N.M. — Not Meaningful.

(a) Amounts primarily include the revenue earned from transition and other services provided to the VodafoneZiggo JV and, during 2018, Deutsche Telekom and Liberty Latin America. For additional information, see notes 6 and 8 to the Consolidated Financial Statements.

U.K./Ireland. The details of the pro forma increase in U.K/Ireland's revenue during 2018, as compared to 2017, are set forth below:

	Subscription revenue	Non-subscription revenue	Total
		in millions	
Increase in residential cable subscription revenue due to change in:			
Average number of RGUs (a)	$ 70.9	$ —	$ 70.9
ARPU (b)	49.3	—	49.3
Increase in residential cable non-subscription revenue (c)	—	6.6	6.6
Total increase in residential cable revenue	120.2	6.6	126.8
Increase (decrease) in residential mobile revenue (d)	(3.8)	86.6	82.8
Increase in B2B revenue (e)	28.3	4.1	32.4
Increase in other revenue (f)	—	7.5	7.5
Total organic increase	144.7	104.8	249.5
Impact of FX	187.7	52.1	239.8
Total	$ 332.4	$ 156.9	$ 489.3

(a) The increase in residential cable subscription revenue related to a change in the average number of RGUs is attributable to increases in the average number of broadband internet, video and fixed-line telephony RGUs.

(b) The increase in residential cable subscription revenue related to a change in ARPU is attributable to (i) a net increase due to (a) higher ARPU from broadband internet services, (b) lower ARPU from fixed-line telephony services and (c) higher ARPU from video services and (ii) an improvement in RGU mix.

(c) The increase in residential cable non-subscription revenue is primarily driven by changes in the U.K., including the net effect of (i) increases in interconnect revenue and late fees and (ii) a decrease in cancellation revenue.

(d) The decrease in residential mobile subscription revenue is primarily attributable to the net effect of (i) a decrease in the U.K., due primarily to lower ARPU, and (ii) an increase in Ireland, mainly due to an increase in the average number of mobile subscribers. The increase in residential mobile non-subscription revenue is primarily due to an increase in revenue from mobile handset sales in the U.K., which typically generate relatively low margins.

(e) The increase in B2B subscription revenue is primarily due to an increase in the average number of broadband internet SOHO subscribers in the U.K. The increase in B2B non-subscription revenue is primarily driven by changes in the U.K., including the net effect of (i) higher revenue related to business network services, (ii) a decrease in interconnect revenue, (iii) lower revenue from wholesale fixed-line telephony services and (iv) lower revenue from data services.

(f) The increase in other revenue is primarily due to an increase in broadcasting revenue in Ireland.

Belgium. The details of the pro forma increase in Belgium's revenue during 2018, as compared to 2017, are set forth below:

	Subscription revenue	Non-subscription revenue	Total
		in millions	
Increase (decrease) in residential cable subscription revenue due to change in:			
Average number of RGUs (a)	$ (57.3)	$ —	$ (57.3)
ARPU (b)	18.1	—	18.1
Decrease in residential cable non-subscription revenue (c)	—	(5.5)	(5.5)
Total decrease in residential cable revenue	(39.2)	(5.5)	(44.7)
Decrease in residential mobile revenue (d)	(26.9)	(26.5)	(53.4)
Increase in B2B revenue (e)	26.3	42.1	68.4
Total organic increase (decrease)	(39.8)	10.1	(29.7)
Impact of acquisitions	27.7	41.5	69.2
Impact of disposals	(17.4)	(11.6)	(29.0)
Impact of FX	97.9	29.9	127.8
Total	$ 68.4	$ 69.9	$ 138.3

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(a) The decrease in residential cable subscription revenue related to a change in the average number of RGUs is attributable to declines in the average number of video, broadband internet and fixed-line telephony RGUs.

(b) The increase in residential cable subscription revenue related to a change in ARPU is attributable to (i) the net effect of (a) higher ARPU from broadband internet and video services and (b) lower ARPU from fixed-line telephony services and (ii) an improvement in RGU mix.

(c) The decrease in residential cable non-subscription revenue is primarily attributable to the net effect of (i) a decrease of $5.6 million related to adjustments recorded during 2017 to reflect the expected recovery of certain prior-period VAT payments, (ii) an increase in distribution revenue, (iii) a decrease in late fees and (iv) a decrease in revenue from equipment sales.

(d) The decrease in residential mobile subscription revenue is primarily due to the net effect of (i) lower ARPU and (ii) an increase in the average number of mobile subscribers. The decrease in residential mobile non-subscription revenue is primarily attributable to decreases in (a) revenue from the sales of mobile handsets and other devices and (b) interconnect revenue.

(e) The increase in B2B subscription revenue is attributable to (i) higher ARPU, as increases in mobile and video SOHO services were only partially offset by a decrease in broadband internet SOHO services, and (ii) an increase in the average number of SOHO subscribers, as increases in broadband internet and video SOHO subscribers were only partially offset by a decrease in mobile subscribers. The increase in B2B non-subscription revenue is primarily due to (a) higher revenue from wholesale services and (b) an increase in interconnect revenue.

For information concerning certain regulatory developments that could have an adverse impact on our revenue in Belgium, see "*Belgium Regulatory Developments*" in note 20 to the Consolidated Financial Statements.

Switzerland. The details of the pro forma decrease in Switzerland's revenue during 2018, as compared to 2017, are set forth below:

	Subscription revenue	Non-subscription revenue	Total
		in millions	
Decrease in residential cable subscription revenue due to change in:			
Average number of RGUs (a)	$ (46.3)	$ —	$ (46.3)
ARPU (b)	(42.5)	—	(42.5)
Increase in residential cable non-subscription revenue (c)	—	4.5	4.5
Total increase (decrease) in residential cable revenue	(88.8)	4.5	(84.3)
Increase in residential mobile revenue (d)	14.9	0.9	15.8
Increase in B2B revenue (e)	1.6	12.6	14.2
Increase in other revenue	—	3.7	3.7
Total organic increase (decrease)	(72.3)	21.7	(50.6)
Impact of acquisitions	1.0	—	1.0
Impact of FX	7.5	1.9	9.4
Total	$ (63.8)	$ 23.6	$ (40.2)

(a) The decrease in residential cable subscription revenue related to a change in the average number of RGUs is attributable to the net effect of (i) declines in the average number of video and broadband internet RGUs and (ii) an increase in the average number of fixed-line telephony RGUs.

(b) The decrease in residential cable subscription revenue related to a change in ARPU is primarily attributable to lower ARPU from video, fixed-line telephony and broadband internet services.

(c) The increase in residential cable non-subscription revenue is primarily attributable to the net effect of (i) a $13.6 million increase in distribution revenue associated with the September 2017 launch of our Swiss sports channels and (ii) a decrease of $6.4 million due to the impact of unclaimed customer credit accruals that were released during the first half of 2017.

(d) The increase in residential mobile subscription revenue is primarily due to an increase in the average number of mobile subscribers.

(e) The increase in B2B non-subscription revenue is primarily due to (i) an increase in interconnect revenue and (ii) higher revenue from data services.

Central and Eastern Europe. The details of the pro forma increase in Central and Eastern Europe's revenue during 2018, as compared to 2017, set forth below:

	Subscription revenue	Non-subscription revenue	Total
		in millions	
Increase (decrease) in residential cable subscription revenue due to change in:			
Average number of RGUs (a)	$ 2.7	$ —	$ 2.7
ARPU (b)	(4.4)	—	(4.4)
Decrease in residential cable non-subscription revenue	—	(2.6)	(2.6)
Total decrease in residential cable revenue	(1.7)	(2.6)	(4.3)
Increase in B2B revenue (c)	5.0	3.8	8.8
Total organic increase	3.3	1.2	4.5
Impact of FX	19.8	1.4	21.2
Total	$ 23.1	$ 2.6	$ 25.7

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(a) The increase in residential cable subscription revenue related to a change in the average number of RGUs is attributable to an increase in the average number of broadband internet, video and fixed-line telephony RGUs, primarily in Poland.

(b) The decrease in residential cable subscription revenue related to a change in ARPU is primarily due to our operations in Poland, attributable to the net effect of (i) lower ARPU from fixed-line telephony and broadband internet services and (ii) higher ARPU from video services.

(c) The increase in B2B subscription revenue is attributable to an increase in the average number of broadband internet SOHO subscribers, primarily in Poland. The increase in B2B non-subscription revenue is largely attributable to an increase in interconnect revenue, primarily in Poland.

Adjusted EBITDA of our Consolidated Reportable Segments

Adjusted EBITDA is the primary measure used by our chief operating decision maker to evaluate segment operating performance. For the definition of this performance measure and for a reconciliation of Adjusted EBITDA from continuing operations to profit (loss) from continuing operations before income taxes, see note 18 to the Consolidated Financial Statements.

Adjusted EBITDA — 2018 compared to 2017

	Year ended December 31,		Increase (decrease)		Organic increase (decrease)	
	2018	2017	$	%	$	%
		pro forma				
	in millions, except percentages					
U.K./Ireland	$ 3,054.2	$ 2,859.0	$ 195.2	6.8	$ 94.3	3.3
Belgium	1,498.1	1,304.1	194.0	14.9	116.6	8.8
Switzerland	725.2	839.4	(114.2)	(13.6)	(119.8)	(14.3)
Central and Eastern Europe	249.1	234.3	14.8	6.3	4.6	2.0
Central and Corporate	(371.7)	(415.8)	44.1	10.6	37.2	8.6
Intersegment eliminations	(11.8)	(9.1)	(2.7)	N.M.	(2.7)	N.M.
Total	$ 5,143.1	$ 4,811.9	$ 331.2	6.9	$ 130.2	2.7

N.M. — Not Meaningful.

Adjusted EBITDA Margin — 2018 and 2017

The following table sets forth the Adjusted EBITDA margins (Adjusted EBITDA divided by revenue) of each of our consolidated reportable segments:

	Year ended December 31,	
	2018	2017
	%	
U.K./Ireland	44.4	45.1
Belgium	50.1	45.8
Switzerland	54.7	61.5
Central and Eastern Europe	50.6	49.9

In addition to organic changes in the revenue, cost of services, G&A and selling expenses of our consolidated reportable segments, the Adjusted EBITDA margins presented above include the impact of acquisitions. For discussion of the factors contributing to the changes in the Adjusted EBITDA margins of our consolidated reportable segments, see the analysis of our revenue included in *Discussion and Analysis of our Reportable Segments* above and the analysis of our expenses included in *Discussion and Analysis of our Consolidated Operating Results* below.

Discussion and Analysis of our Consolidated Operating Results

General

For more detailed explanations of the changes in our revenue, see *Discussion and Analysis of our Reportable Segments* above.

2018 compared to 2017

Revenue

Our revenue by major category is set forth below:

	Year ended December 31, 2018	Year ended December 31, 2017 pro forma	Increase (decrease) $	Increase (decrease) %	Organic increase (decrease) $	Organic increase (decrease) %
	in millions, except percentages					
Residential revenue:						
Residential cable revenue (a):						
Subscription revenue (b):						
Video	$ 2,861.2	$ 2,804.9	$ 56.3	2.0	$ (53.1)	(1.9)
Broadband internet	3,226.6	2,998.4	228.2	7.6	111.2	3.7
Fixed-line telephony	1,607.8	1,614.7	(6.9)	(0.4)	(67.5)	(4.2)
Total subscription revenue	7,695.6	7,418.0	277.6	3.7	(9.4)	(0.1)
Non-subscription revenue	279.1	268.9	10.2	3.8	5.1	1.9
Total residential cable revenue	7,974.7	7,686.9	287.8	3.7	(4.3)	(0.1)
Residential mobile revenue (c):						
Subscription revenue (b)	983.5	978.7	4.8	0.5	(15.8)	(1.6)
Non-subscription revenue	694.8	621.8	73.0	11.7	60.8	10.0
Total residential mobile revenue	1,678.3	1,600.5	77.8	4.9	45.0	2.9
Total residential revenue	9,653.0	9,287.4	365.6	3.9	40.7	0.4
B2B revenue (d):						
Subscription revenue	446.4	368.6	77.8	21.1	61.2	16.6
Non-subscription revenue	1,537.1	1,370.7	166.4	12.1	73.8	5.2
Total B2B revenue	1,983.5	1,739.3	244.2	14.0	135.0	7.6
Other revenue (e)	319.4	219.9	99.5	45.2	69.3	29.1
Total	$ 11,955.9	$ 11,246.6	$ 709.3	6.3	$ 245.0	2.2

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(a) Residential cable subscription revenue includes amounts received from subscribers for ongoing services and the recognition of deferred installation revenue over the associated contract period. Residential cable non-subscription revenue includes, among other items, channel carriage fees, late fees and revenue from the sale of equipment.

(b) Residential subscription revenue from subscribers who purchase bundled services at a discounted rate is generally allocated proportionally to each service based on the standalone price for each individual service. As a result, changes in the standalone pricing of our cable and mobile products or the composition of bundles can contribute to changes in our product revenue categories from period to period.

(c) Residential mobile subscription revenue includes amounts received from subscribers for ongoing services. Residential mobile non-subscription revenue includes, among other items, interconnect revenue and revenue from sales of mobile handsets and other devices. Residential mobile interconnect revenue was $253.6 million and $253.0 million during 2018 and 2017, respectively.

(d) B2B subscription revenue represents revenue from SOHO subscribers. SOHO subscribers pay a premium price to receive expanded service levels along with video, broadband internet, fixed-line telephony or mobile services that are the same or similar to the mass marketed products offered to our residential subscribers. A portion of the increases in our B2B subscription revenue is attributable to the conversion of certain residential subscribers to SOHO subscribers. B2B non-subscription revenue includes revenue from business broadband internet, video, fixed-line telephony, mobile and data services offered to medium to large enterprises and, on a wholesale basis, to other operators.

(e) Other revenue includes, among other items, revenue earned from the JV Services, broadcasting revenue in Ireland and revenue from Central and Corporate's wholesale handset program. In addition, the amount for 2018 includes revenue earned from (i) sales of customer premises equipment to the VodafoneZiggo JV and (ii) transitional and other services provided to Deutsche Telekom and Liberty Latin America.

Total revenue. Our consolidated revenue increased $709.3 million or 6.3% during 2018, as compared to 2017. This increase includes (i) an increase of $70.4 million attributable to the impact of acquisitions and (ii) a decrease of $29.1 million attributable to the impact of dispositions. On an organic basis, our consolidated revenue increased $245.0 million or 2.2%.

Residential revenue. The details of the pro forma changes in our consolidated residential revenue for 2018, as compared to 2017, are as follows (in millions):

Increase (decrease) in residential cable subscription revenue due to change in:		
Average number of RGUs	$	(14.7)
ARPU		5.3
Increase in residential cable non-subscription revenue		5.1
Total decrease in residential cable revenue		(4.3)
Decrease in residential mobile subscription revenue		(15.8)
Increase in residential mobile non-subscription revenue		60.8
Total organic increase in residential revenue		40.7
Net impact of acquisitions and disposals		(1.3)
Impact of FX		326.2
Total increase in residential revenue	$	365.6

On an organic basis, our consolidated residential cable subscription revenue decreased $9.4 million or 0.1% during 2018, as compared to 2017. This decrease is attributable to the net effect of (i) an increase from broadband internet services of $111.2 million or 3.7%, attributable to higher ARPU and an increase in the average number of RGUs, (ii) a decrease from fixed-line telephony services of $67.5 million or 4.2%, attributable to the net effect of lower ARPU and an increase in the average number of RGUs, and (iii) a decrease from video services of $53.1 million or 1.9%, attributable to the net effect of a decrease in the average number of RGUs and higher ARPU.

On an organic basis, our consolidated residential cable non-subscription revenue increased $5.1 million or 1.9% during 2018, as compared to 2017. This increase is primarily attributable to the net effect of (i) increases in the U.K. and Switzerland and (ii) a decrease in Belgium.

On an organic basis, our consolidated residential mobile subscription revenue decreased $15.8 million or 1.6% during 2018, as compared to 2017. This decrease is primarily due to the net effect of (i) declines in Belgium and the U.K. and (ii) an increase in Switzerland.

On an organic basis, our consolidated residential mobile non-subscription revenue increased $60.8 million or 10.0% during 2018, as compared to 2017. This increase is primarily due to an increase in revenue from low-margin sales of mobile handsets and other devices, as an increase in the U.K. was only partially offset by a decrease in Belgium.

B2B revenue. On an organic basis, our consolidated B2B subscription revenue increased $61.2 million or 16.6% during 2018, as compared to 2017. This increase is primarily due to increases in SOHO revenue in the U.K., Belgium and Poland.

On an organic basis, our consolidated B2B non-subscription revenue increased $73.8 million or 5.2% during 2018, as compared to 2017. This increase is primarily due to increases in Belgium and Switzerland.

Other revenue. On an organic basis, our consolidated other revenue increased $69.3 million or 29.1% during 2018 respectively, as compared to 2017. This increase is primarily due to (i) revenue of $57.2 million that was earned from the sale of customer premises equipment to the VodafoneZiggo JV, which began during the second quarter of 2018 and typically generate low margins, and (ii) an increase in broadcasting revenue in Ireland.

Cost of services

Cost of services include programming and copyright costs, interconnect and access costs, costs of mobile handsets and other devices, network operations, customer operations, customer care, share-based compensation and other costs related to our operations. We do not include share-based compensation and depreciation and amortization in the following discussion and analysis of the cost of services of our reportable segments as these items are not included our performance measures. Share-based compensation expense and depreciation and amortization are discussed separately below.

Our cost of services (exclusive of share-based compensation expense and depreciation and amortization) increased $344.5 million or 7.5% during 2018, as compared to 2017. This increase includes (i) an increase of $32.8 million attributable to the impact of acquisitions and (ii) a decrease of $20.8 million attributable to the impact of dispositions. On an organic basis, our cost of services increased $161.5 million or 3.5%. This increase includes the following factors:

- An increase in programming and copyright costs of $65.2 million or 4.3%, primarily due to increases in U.K./Ireland and Switzerland. This increase is primarily due to higher costs for certain premium and/or basic content, including (i) a $27.8 million increase in costs associated with sports rights in Switzerland and (ii) a $10.3 million increase in costs associated with broadcasting rights in Ireland. The increase in the costs for sports rights in Switzerland is due to the acquisition of the rights to carry live sporting events in connection with the September 2017 launch of our Swiss sports channels. Approximately half of the annual programming costs and the operating and capital costs associated with the production of the related Swiss sports channels are recovered from the revenue earned from the distribution of these sports channels to other cable operators;

- Higher cost of sales of $51.2 million in Central and Corporate related to customer premises equipment sold to the VodafoneZiggo JV;

- An increase in mobile handset and other device costs of $35.9 million or 11.0%, primarily due to the net effect of (i) a higher average cost per handset sold in U.K./Ireland and (ii) lower mobile handset and other device sales volumes, primarily due to decreases in U.K./Ireland and Belgium;

- An increase in personnel costs of $32.3 million or 6.8%, primarily due to the net effect of (i) a higher average cost per employee, primarily due to increases in U.K./Ireland and Switzerland, (ii) lower staffing levels, as decreases in U.K./ Ireland and Belgium were only partially offset by an increase in Central and Corporate, and (iii) higher incentive compensation costs, primarily in U.K./Ireland. A portion of the lower staffing levels in Belgium is attributable to the transfer of certain employees to a newly-formed joint venture that provides network maintenance and customer-facing services to Telenet. Effective with the July 1, 2018 formation of this non-consolidated joint venture, the costs associated with these services are included within our core network and outsourced labor operating expense categories;

- An increase in network infrastructure charges in U.K./Ireland of $22.5 million following an increase in the rateable value of existing assets. For additional information, see "*Other Regulatory Issues"* in note 20 to the Consolidated Financial Statements;

- A decrease in core network and information technology-related costs of $17.3 million or 5.2%, primarily due to the net effect of (i) a decrease in network maintenance and energy costs, primarily in Central and Corporate, U.K./Ireland and Belgium, (ii) an increase in outsourced data center costs, primarily in Central and Corporate, and (iii) a decrease in information technology-related expenses, primarily in Belgium;

- An increase in interconnect and access costs of $16.5 million or 1.9%, primarily due to the net effect of (i) lower MVNO costs, as a decrease in Belgium of $46.5 million was only partially offset by an increase in Switzerland of $9.0 million, (ii) a $34.3 million increase in U.K./Ireland resulting from the net impact of credits recorded during the second quarter of 2017 ($28.8 million), the fourth quarter of 2017 ($10.5 million) and the second quarter of 2018 ($5.0 million), primarily associated with a telecommunications operator's agreement to compensate communications providers, including Virgin Media, for certain contractual breaches related to network charges, and (iii) higher interconnect and roaming costs, primarily due to increases in U.K./Ireland and Switzerland. The lower MVNO costs in Belgium are primarily attributable to the impact of the migration of mobile subscribers from Telenet's MVNO arrangement to Telenet's mobile network, which was completed during the first quarter of 2018. For additional information, see note 15 to the Consolidated Financial Statements;

- A decrease in business service costs of $12.7 million or 6.2%, primarily due to (i) decreased vehicle expenses due to the impact of the conversion of certain operating leases on company vehicles to capital leases, primarily in Belgium, (ii) lower energy costs, primarily in Belgium, and (iii) lower consulting costs, primarily in U.K./Ireland;

- A decrease of $7.3 million in the U.K. associated with the fourth quarter 2017 modification of a software agreement that resulted in the acquisition of a perpetual license and related conversion of the operating costs to capitalized costs;

- A decrease in customer service costs of $5.3 million or 2.0%, primarily due to the net effect of (i) lower call center costs, primarily in Belgium, U.K./Ireland and Switzerland, and (ii) an increase in customer premises equipment refurbishment, inventory management and other supply chain costs, as increases in Central and Corporate and Belgium were only partially offset by a decrease in U.K./Ireland;

- A decrease in encryption costs of $4.6 million in the U.K. associated with the 2018 modification of a service agreement that resulted in the acquisition of a time-based license and related conversion of the operating costs to capitalized costs; and

- An increase in outsourced labor costs of $4.4 million or 3.7%, primarily associated with customer-facing activities. This increase is largely attributable to the aforementioned July 1, 2018 formation of a non-consolidated joint venture in Belgium.

General and administrative expenses

General and administrative expenses include human resources, information technology, general services, management, finance, legal, share-based compensation and other general expenses related to our administrative functions. We do not include share-based compensation and depreciation and amortization in the following discussion and analysis of the general and administrative expenses of our reportable segments as these items are not included in our performance measures. Share-based compensation expense and depreciation and amortization are discussed separately below.

Our general and administrative expenses (exclusive of share-based compensation expense and depreciation and amortization) increased $12.5 million or 1.5% during 2018, as compared to 2017. This increase includes an increase of $7.9 million attributable to the impact of acquisitions. On an organic basis, our general and administrative expenses decreased $21.9 million or 2.7%. This decrease includes the following factors:

- A decrease in personnel costs of $27.2 million or 7.7%, primarily due to the net effect of (i) a lower average cost per employee, primarily due to decreases in Belgium, U.K./Ireland, Switzerland and Central and Corporate, (ii) lower incentive compensation costs, primarily in Central and Corporate and U.K./Ireland, (iii) higher staffing levels, as increases in U.K./Ireland, Central and Corporate and Switzerland were only partially offset by a decrease in Belgium, and (iv) a decrease in temporary personnel costs, primarily in Central and Corporate and Belgium. The lower incentive compensation costs are attributable to the expected settlement of a portion of our annual incentive compensation with Liberty Global ordinary shares through a shareholding incentive program that was implemented in the fourth quarter of 2017. This shareholding incentive program resulted in lower incentive compensation expense of $29.1 million during 2018 as compared to 2017, primarily in Central and Corporate. For additional information, see note 14 to the Consolidated Financial Statements;

- An increase in core network and information technology-related costs of $20.3 million or 11.8%, primarily due to higher information technology-related expenses in Central and Corporate and U.K./Ireland; and

- A decrease in business service and certain other costs of $14.6 million or 8.8%, primarily due to the net effect of (i) lower consulting costs, primarily due to decreases in Belgium, Central and Corporate and U.K./Ireland and (ii) a $9.1 million increase related to the settlement of an operational contingency in U.K./Ireland during 2018.

Selling expenses

Selling expenses include costs associated with our sales and marketing function.

Our selling expenses (exclusive of share-based compensation expense) increased $21.1 million or 2.1% during 2018, as compared to 2017. This increase includes an increase of $6.1 million attributable to the impact of acquisitions. On an organic basis, our selling expenses decreased $24.8 million or 2.4%. This decrease includes the following factors:

- A decrease in external sales and marketing costs of $58.5 million or 14.7%, primarily due to lower costs associated with advertising campaigns in U.K./Ireland and Belgium;

- An increase in personnel costs of $18.6 million or 4.4%, primarily due to (i) a higher average cost per employee, primarily due to increases in U.K./Ireland and Switzerland and (ii) slightly higher staffing levels, as increases in Belgium, Switzerland and Poland were largely offset by a decrease in U.K./Ireland; and

- An increase in customer service costs of $3.0 million or 7.6%, primarily due to lower call center costs, as an increase in U.K./Ireland was only partially offset by a decrease in Belgium.

Share-based compensation expense (included in cost of services and G&A expenses)

Our share-based compensation expense primarily relates to the share-based incentive awards issued by Liberty Global to its employees and employees of its subsidiaries. A summary of the aggregate share-based compensation expense is set forth below:

	Year ended December 31,	
	2018	2017
	in millions	
Liberty Global:		
Performance-based incentive awards (a)	$ 50.8	$ 23.9
Non-performance based share-based incentive awards	90.0	110.0
Other (b)	43.4	13.7
Total Liberty Global	184.2	147.6
Telenet share-based incentive awards (c)	19.6	20.7
Other	2.1	10.1
Total	$ 205.9	$ 178.4
Included in:		
Cost of services	$ 4.4	$ 5.2
G&A expenses	201.5	173.2
Total	$ 205.9	$ 178.4

(a) Includes share-based compensation expense related to (i) PSUs and (ii) through March 2017, the PGUs held by our Chief Executive Officer.

(b) Represents annual incentive compensation and defined contribution plan liabilities that have been or are expected to be settled with Liberty Global ordinary shares. In the case of the annual incentive compensation, shares will be issued to senior management and key employees pursuant to a shareholding incentive program that was implemented in the fourth quarter of 2017. The shareholding incentive program allows these employees to elect to receive up to 100% of their annual incentive compensation in ordinary shares of Liberty Global in lieu of cash.

(c) Represents the share-based compensation expense associated with Telenet's share-based incentive awards, which, at December 31, 2018, included performance- and non-performance-based stock option awards with respect to 4,494,002 Telenet shares. These stock option awards had a weighted average exercise price of €42.50 ($48.67).

For additional information concerning our share-based compensation, see note 14 to the Consolidated Financial Statements.

Depreciation and amortization expense (included in cost of services and G&A expenses)

Our depreciation and amortization expense was $3,896.2 million and $3,823.3 million during 2018 and 2017, respectively. Excluding the effects of FX, depreciation and amortization expense decreased $64.6 million or 1.7% during 2018, as compared to 2017. This decrease is primarily due to the net effect of (i) a decrease associated with certain assets becoming fully depreciated, primarily in U.K./Ireland, Central and Corporate, Belgium and, to a lesser extent Switzerland, (ii) an increase associated with property and equipment additions related to the installation of customer premises equipment, the expansion and upgrade of our networks and other capital initiatives.

Impairment, restructuring and other operating items, net

We recognized impairment, restructuring and other operating items, net, of $270.5 million during 2018, as compared to $113.8 million during 2017.

The total for 2018 primarily includes (i) provisions for litigation of $135.0 million related to certain VAT matters in the U.K. recorded during the third quarter of 2018, (ii) restructuring charges of $64.7 million, including employee severance and termination costs related to certain reorganization and integration activities of $23.7 million in U.K./Ireland and $14.2 million in Central and Corporate and (iii) $40.5 million in Belgium related to the migration of Telenet's mobile subscribers from an MVNO arrangement to Telenet's mobile network. For additional information regarding Telenet's exit from its MVNO arrangement, see note 16 to the Consolidated Financial Statements. For additional information regarding VAT matters in the U.K., see note 20 to the Consolidated Financial Statements.

The total for 2017 primarily includes (i) restructuring charges of $82.3 million, including employee severance and termination costs related to certain reorganization and integration activities of $20.1 million in U.K./Ireland and $10.0 million in Central and Corporate, and (ii) a $40 million legal settlement recorded during the third quarter of 2017.

If, among other factors, (i) our equity values were to decline significantly or (ii) the adverse impacts of economic, competitive, regulatory or other factors were to cause our results of operations or cash flows to be worse than anticipated, we could conclude in future periods that impairment charges are required in order to reduce the carrying values of our goodwill and, to a lesser extent, other non-current assets. Any such impairment charges could be significant.

For additional information regarding our restructuring charges, see note 16 to the Consolidated Financial Statements.

Net finance costs

	Year ended December 31,	
	2018	**2017**
	in millions	
Interest expense	$ (1,536.4)	$ (1,419.5)
Realized and unrealized losses due to changes in fair values of certain investments and debt, net	(381.3)	—
Losses on debt modification and extinguishment, net	(65.0)	(252.2)
Realized and unrealized losses on derivative instruments, net	—	(1,052.8)
Foreign currency transaction losses, net	—	(181.5)
Total finance costs	(1,982.7)	(2,906.0)
Realized and unrealized gains on derivative instruments, net	1,125.8	—
Foreign currency transaction gains, net	90.4	—
Interest and dividend income	13.4	31.0
Realized and unrealized gains due to changes in fair values of certain investments and debt, net	—	39.8
Total finance income	1,229.6	70.8
Net finance costs	$ (753.1)	$ (2,835.2)

Interest expense

We recognized interest expense of $1,536.4 million and $1,419.5 million during 2018 and 2017, respectively. Excluding the effects of FX, interest expense increased $65.8 million or 4.6% during 2018, as compared to 2017. This increase is primarily attributable to slightly higher weighted average interest rates, partially offset by lower average outstanding debt balances. For additional information regarding our outstanding indebtedness, see note 15 to the Consolidated Financial Statements.

It is possible that the interest rates on (i) any new borrowings could be higher than the current interest rates on our existing indebtedness and (ii) our variable-rate indebtedness could increase in future periods. As further discussed in note 9 to the Consolidated Financial Statements and under *Qualitative and Quantitative Disclosures about Market Risk* below, we use derivative instruments to manage our interest rate risks.

Realized and unrealized gains (losses) on derivative instruments, net

Our realized and unrealized gains or losses on derivative instruments include (i) unrealized changes in the fair values of our derivative instruments that are non-cash in nature until such time as the derivative contracts are fully or partially settled and (ii) realized gains or losses upon the full or partial settlement of the derivative contracts. The details of our realized and unrealized gains (losses) on derivative instruments, net, are as follows:

	Year ended December 31,	
	2018	2017
	in millions	
Cross-currency and interest rate derivative contracts (a)	$ 905.8	$ (1,145.6)
Equity-related derivative instruments:		
ITV Collar	176.7	215.0
Lionsgate Forward	30.1	(11.4)
Sumitomo Collar	(11.8)	(77.4)
Other	2.5	(3.9)
Total equity-related derivative instruments (b)	197.5	122.3
Foreign currency forward and option contracts	22.7	(30.2)
Other	(0.2)	0.7
Total	$ 1,125.8	$ (1,052.8)

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(a) The gain during 2018 is primarily attributable to the net effect of (i) a net gain associated with changes in the relative value of certain currencies and (ii) a net loss associated with changes in certain market interest rates. In addition, the gain during 2018 includes a net loss of $71.1 million resulting from changes in our credit risk valuation adjustments. The loss during 2017 is primarily attributable to the net effect of (a) a net loss associated with changes in the relative value of certain currencies and (b) a net gain associated with changes in certain market interest rates. In addition, the loss during 2017 includes a net gain of $168.4 million resulting from changes in our credit risk valuation adjustments.

(b) For information concerning the factors that impact the valuations of our equity-related derivative instruments, see note 10 to the Consolidated Financial Statements.

For additional information concerning our derivative instruments, see notes 9 and 10 to the Consolidated Financial Statements and *Quantitative and Qualitative Disclosures about Market Risk* below.

Losses on debt modification and extinguishment, net

We recognized net losses on debt modification and extinguishment of $65.0 million and $252.2 million during 2018 and 2017, respectively.

The loss during 2018 is primarily attributable to the net effect of (i) the payment of $49.5 million of redemption premiums, (ii) the write-off of $28.2 million of net unamortized deferred financing costs and discounts and (iii) a gain associated with the settlement of the final tranche of the Sumitomo Collar, as described in note 9 to the Consolidated Financial Statements.

The loss during 2017 is primarily attributable to (i) the payment of $138.4 million of redemption premiums and (ii) the write-off of $115.4 million of net unamortized deferred financing costs, discounts and premiums.

For additional information concerning our losses on debt modification and extinguishment, net, see note 15 to the Consolidated Financial Statements.

Realized and unrealized gains (losses) due to changes in fair values of certain investments and debt, net

Our realized and unrealized gains or losses due to changes in fair values of certain investments and debt include unrealized gains or losses associated with changes in fair values that are non-cash in nature until such time as these gains or losses are realized through cash transactions. For additional information regarding our investments, fair value measurements and debt, see notes 8, 10 and 15, respectively, to the Consolidated Financial Statements. The details of our realized and unrealized gains (losses) due to changes in fair values of certain investments and debt, net, are as follows:

	Year ended December 31,	
	2018	2017
	in millions	
Investments:		
ITV	$ (257.8)	$ (123.5)
Lionsgate	(86.4)	35.3
ITI Neovision	(24.9)	15.8
Casa	(9.2)	47.9
Sumitomo	(3.4)	238.2
Other, net (a)	(8.3)	10.8
Total investments	(390.0)	224.5
Debt	8.7	(184.7)
Total	$ (381.3)	$ 39.8

(a) Amounts in 2017 include gains of $12.7 million related to investments that were sold during the year.

Foreign currency transaction gains (losses), net

Our foreign currency transaction gains or losses primarily result from the remeasurement of monetary assets and liabilities that are denominated in currencies other than the underlying functional currency of the applicable entity. Unrealized foreign currency transaction gains or losses are computed based on period-end exchange rates and are non-cash in nature until such time as the amounts are settled. The details of our foreign currency transaction gains (losses), net, are as follows:

	Year ended December 31,	
	2018	2017
	in millions	
Intercompany payables and receivables denominated in a currency other than the entity's functional currency (a)	$ 494.3	$ (874.3)
U.S. dollar denominated debt issued by British pound sterling functional currency entities	(258.0)	351.9
U.S. dollar denominated debt issued by euro functional currency entities	(222.1)	551.2
British pound sterling denominated debt issued by a U.S. dollar functional currency entity	83.3	(125.5)
Cash and restricted cash denominated in a currency other than the entity's functional currency	(5.5)	(105.9)
Euro denominated debt issued by British pound sterling functional currency entities	5.3	20.2
Yen denominated debt issued by a U.S. dollar functional currency entity	(5.1)	(20.9)
Other	(1.8)	21.8
Total	$ 90.4	$ (181.5)

(a) Amounts primarily relate to (i) loans between certain of our non-operating and operating subsidiaries in Europe, which generally are denominated in the currency of the applicable operating subsidiary and (ii) loans between certain of our non-operating subsidiaries in the U.S. and Europe.

For information regarding how we manage our exposure to foreign currency risk, see *Quantitative and Qualitative Disclosures about Market Risk — Foreign Currency Risk* below.

Share of results of affiliates, net

The following table sets forth the details of our share of results of affiliates, net:

	Year ended December 31,	
	2018	2017
	in millions	
VodafoneZiggo JV (a)	$ 11.4	$ (70.1)
Other	8.2	(24.0)
Total	$ 19.6	$ (94.1)

(a) Amounts include the net effect of (i) interest income of $59.6 million and $64.3 million, respectively, representing 100% of the interest income earned on the VodafoneZiggo JV Receivable, (ii) 100% of the share-based compensation expense associated with Liberty Global awards held by VodafoneZiggo JV employees who were formerly employees of Liberty Global, as these awards remain our responsibility, and (iii) our 50% share of the remaining results of operations of the VodafoneZiggo JV. The summarized results of operations of the VodafoneZiggo JV are set forth below:

	Year ended December 31,	
	2018	2017 (1)
	in millions	
Revenue	$ 4,602.2	$ 4,488.9
Adjusted EBITDA	$ 2,009.7	$ 1,912.6
Operating income (2)	$ 130.6	$ 219.4
Non-operating expense (3)	$ (598.4)	$ (580.3)
Net loss	$ (91.6)	$ (257.3)

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(1) Amounts have been presented on a pro forma basis that gives effect to the adoption of IFRS 15 as if such adoption had occurred on January 1, 2017.

(2) Includes depreciation and amortization of $1,833.6 million and $1,678.5 million, respectively.

(3) Includes interest expense of $678.3 million and $650.1 million, respectively.

The VodafoneZiggo JV is experiencing significant competition. In particular, the mobile operations of the VodafoneZiggo JV continue to experience competitive pressure on pricing, characterized by aggressive promotion campaigns, heavy marketing efforts and increasing or unlimited data bundles. In light of this competition, as well as regulatory and economic factors, we could conclude in future periods that our investment in the VodafoneZiggo JV is impaired or management of the VodafoneZiggo JV could conclude that an impairment of the VodafoneZiggo JV goodwill and, to a lesser extent, non-current assets, is required. Any such impairment of the VodafoneZiggo JV's goodwill or our investment in the VodafoneZiggo JV would be reflected as a component of share of results of affiliates, net, in our consolidated statement of profit or loss. Our share of any such impairment charges could be significant.

For additional information regarding our equity method investments, see note 8 to the Consolidated Financial Statements.

Other income, net

We recognized other income, net, of $14.0 million and $11.3 million during 2018 and 2017, respectively. The 2018 amount includes a $12.3 million gain related to the formation of a joint venture in Belgium, representing the excess of the fair value of our ownership interest in the joint venture over the carrying value of the assets that we contributed. The 2017 amount includes a $4.5 million pre-tax gain related to the finalization of the equalization payment from Vodafone associated with the VodafoneZiggo JV Transaction. For additional information, see note 6 to the Consolidated Financial Statements.

Income tax benefit (expense)

We recognized income tax expense of $1,527.5 million and $181.4 million during 2018 and 2017, respectively.

The income tax expense during 2018 differs from the expected income tax expense of $9.7 million (based on the U.K. statutory income tax rate of 19.00%), primarily due to the net negative impact of (i) the Mandatory Repatriation Tax, (ii) certain permanent differences between the financial and tax accounting treatment of items associated with investments in subsidiaries and affiliates and (iii) certain permanent differences between the financial and tax accounting treatment of interest and other items. The net negative impact of these items was partially offset by the net positive impact of non-deductible or non-taxable foreign currency exchange results.

The income tax expense during 2017 differs from the expected income tax benefit of $421.5 million (based on the U.K. statutory income tax rate of 19.25%) primarily due to the net negative impact of (i) an increase in unrecognized deductible temporary deferred items, (ii) non-deductible or non-taxable foreign currency exchange results and (iii) certain permanent differences between the financial and tax accounting treatment of items associated with investments in subsidiaries and affiliates. The net negative impact of these items was partially offset by the net positive impact of statutory tax rates in certain jurisdictions in which we operate that are different than the U.K. statutory income tax rate.

For additional information concerning our income taxes, see note 11 to the Consolidated Financial Statements.

Loss from continuing operations

During 2018 and 2017, we reported losses from continuing operations of $1,476.5 million and $2,371.1 million, respectively, consisting of (i) operating profit of $770.5 million and $728.3 million, respectively, (ii) net non-operating expense of $719.5 million and $2,918.0 million, respectively, and (iii) income tax expense of $1,527.5 million and $181.4 million, respectively.

Gains or losses associated with (i) changes in the fair values of derivative instruments, (ii) movements in foreign currency exchange rates and (iii) the disposition of assets and changes in ownership are subject to a high degree of volatility and, as such, any gains from these sources do not represent a reliable source of income. In the absence of significant gains in the future from these sources or from other non-operating items, our ability to generate profits is largely dependent on our ability to increase our aggregate Adjusted EBITDA to a level that more than offsets the aggregate amount of our (a) share-based compensation expense, (b) depreciation and amortization, (c) impairment, restructuring and other operating items, (d) interest expense, (e) other non-operating expenses and (f) income tax expenses.

Due largely to the fact that we seek to maintain our debt at levels that provide for attractive equity returns, as discussed under *Liquidity and Capital Resources — Capitalization* below, we expect that we will continue to report significant levels of interest expense for the foreseeable future. For information concerning our expectations with respect to trends that may affect certain aspects of our operating results in future periods, see the discussion under *Overview* above. For information concerning the reasons for changes in specific line items in our consolidated statements of profit or loss, see *Discussion and Analysis of our Reportable Segments* and *Discussion and Analysis of our Consolidated Operating Results* above.

Profit (loss) from discontinued operations, net of taxes

Our profit (loss) from discontinued operations, net of taxes, of $1,158.6 million and ($380.3 million) during 2018 and 2017, respectively, relates to the operations of UPC Austria, the Vodafone Disposal Group, UPC DTH and, for 2017, the LiLAC Group. In addition, we recognized a gain on the sale of UPC Austria of $975.3 million during the third quarter of 2018 and the 2017 amount includes a $242.9 million gain associated with the Split-off Transaction. For additional information, see note 6 to the Consolidated Financial Statements.

Net profit attributable to noncontrolling interests

Net profit attributable to noncontrolling interests includes the noncontrolling interests' share of the results of our continuing and discontinued operations. Our net profit attributable to noncontrolling interests was $146.5 million and $43.0 million during 2018 and 2017, respectively. The increase is primarily attributable to improvements in the results of operations of Telenet and the impact of the Split-off Transaction.

Liquidity and Capital Resources

Sources and Uses of Cash

We are a holding company that is dependent on the capital resources of our subsidiaries to satisfy our liquidity requirements at the corporate level. Each of our significant operating subsidiaries is separately financed within one of our three subsidiary "borrowing groups." These borrowing groups include the respective restricted parent and subsidiary entities within Virgin Media, UPC Holding and Telenet. Although our borrowing groups typically generate cash from operating activities, the terms of the instruments governing the indebtedness of these borrowing groups may restrict our ability to access the liquidity of these subsidiaries. In addition, our ability to access the liquidity of these and other subsidiaries may be limited by tax and legal considerations, the presence of noncontrolling interests and other factors.

Cash and cash equivalents

The details of the U.S. dollar equivalent balances of our consolidated cash and cash equivalents at December 31, 2018 are set forth in the following table (in millions):

Cash and cash equivalents held by:	
Liberty Global and unrestricted subsidiaries:	
Liberty Global (a)	$ 10.8
Unrestricted subsidiaries (b)	1,333.2
Total Liberty Global and unrestricted subsidiaries	1,344.0
Borrowing groups (c):	
Telenet	100.5
Virgin Media (d)	21.2
UPC Holding	14.8
Total borrowing groups	136.5
Total cash and cash equivalents	$ 1,480.5

(a) Represents the amount held by Liberty Global on a standalone basis.

(b) Represents the aggregate amount held by subsidiaries that are outside of our borrowing groups.

(c) Except as otherwise noted, represents the aggregate amounts held by the parent entity and restricted subsidiaries of our borrowing groups.

(d) The Virgin Media borrowing group includes certain subsidiaries of Virgin Media, but excludes the parent entity, Virgin Media Inc.

Liquidity of Liberty Global and its unrestricted subsidiaries

The $10.8 million of cash and cash equivalents held by Liberty Global and, subject to certain tax and legal considerations, the $1,333.2 million of aggregate cash and cash equivalents held by unrestricted subsidiaries, represented available liquidity at the corporate level at December 31, 2018. Our remaining cash and cash equivalents of $136.5 million at December 31, 2018 were held by our borrowing groups as set forth in the table above. As noted above, various factors may limit our ability to access the cash of our borrowing groups. For information regarding certain limitations imposed by our subsidiaries' debt instruments at December 31, 2018, see note 15 to the Consolidated Financial Statements.

Our current sources of corporate liquidity include (i) cash and cash equivalents held by Liberty Global and, subject to certain tax and legal considerations, Liberty Global's unrestricted subsidiaries, (ii) interest and dividend income received on our and, subject to certain tax and legal considerations, our unrestricted subsidiaries' cash and cash equivalents and investments, including dividends received from the VodafoneZiggo JV, (iii) principal and interest payments received with respect to the VodafoneZiggo JV Receivable and (iv) cash received with respect to transitional services provided to the VodafoneZiggo JV, Deutsche Telekom and Liberty Latin America.

From time to time, Liberty Global and its unrestricted subsidiaries may also receive (i) proceeds in the form of distributions or loan repayments from Liberty Global's borrowing groups or affiliates (including amounts from the VodafoneZiggo JV) upon (a) the completion of recapitalizations, refinancings, asset sales or similar transactions by these entities or (b) the accumulation of excess cash from operations or other means, (ii) proceeds upon the disposition of investments and other assets of Liberty Global and its unrestricted subsidiaries and (iii) proceeds in connection with the incurrence of debt by Liberty Global or its unrestricted subsidiaries or the issuance of equity securities by Liberty Global, including equity securities issued to satisfy subsidiary obligations. No assurance can be given that any external funding would be available to Liberty Global or its unrestricted subsidiaries on favorable terms, or at all. For information regarding the liquidity impacts of the disposition of UPC Austria and the pending dispositions of the Vodafone Disposal Group and UPC DTH, see note 6 to the Consolidated Financial Statements. For information regarding the liquidity impact of the pending sale of our operations in Switzerland, see note 28 to the Consolidated Financial Statements.

At December 31, 2018, our consolidated cash and cash equivalents balance included $1,455.1 million held by entities that are domiciled outside of the U.K. Based on our assessment of our ability to access the liquidity of our subsidiaries on a tax efficient basis, our expectations with respect to our corporate liquidity requirements and our preliminary assessment of the 2017 U.S. Tax Act, we do not anticipate that tax considerations will adversely impact our corporate liquidity over the next 12 months. Our ability to access the liquidity of our subsidiaries on a tax efficient basis is a consideration in assessing the extent of our share repurchase program.

In addition, the amount of cash we receive from our subsidiaries to satisfy U.S. dollar-denominated liquidity requirements is impacted by fluctuations in exchange rates, particularly with regard to the translation of British pounds sterling and euros into U.S. dollars. In this regard, the strengthening (weakening) of the U.S. dollar against these currencies will result in decreases (increases) in the U.S. dollars received from the applicable subsidiaries to fund the repurchase of our equity securities and other U.S. dollar-denominated liquidity requirements.

Our corporate liquidity requirements include (i) corporate general and administrative expenses, (ii) interest payments on our secured borrowing arrangement with respect to the ITV Collar Loan and (iii) principal payments on the ITV Collar Loan and our secured borrowing arrangement with respect to the Lionsgate Loan to the extent not settled through the delivery of the underlying shares. In addition, Liberty Global and its unrestricted subsidiaries may require cash in connection with (a) the repayment of third-party and intercompany debt, (b) the satisfaction of contingent liabilities, (c) acquisitions, (d) the repurchase of equity and debt securities, (e) other investment opportunities, (f) any funding requirements of our subsidiaries and affiliates or (g) income tax payments. In addition, our parent entity uses available liquidity to make interest and principal payments on notes payable to certain of our unrestricted subsidiaries (aggregate outstanding principal of $13.0 billion at December 31, 2018 with varying maturity dates). For information regarding our commitments and contingencies, see note 20 to the Consolidated Financial Statements.

During 2018, the aggregate amount of our share repurchases was $2,010.0 million, including direct acquisition costs. In July 2018, our board of directors authorized an additional $500.0 million of share repurchases through July 2019. At December 31, 2018, the remaining amount authorized for share repurchases was $566.2 million. As a U.K. incorporated company, we may only elect to repurchase shares or pay dividends to the extent of our Distributable Reserves. For additional information regarding our share repurchase programs and Distributable Reserves, see note 13 to the Consolidated Financial Statements.

Liquidity of borrowing groups

The cash and cash equivalents of our borrowing groups are detailed in the table above. In addition to cash and cash equivalents, the primary sources of liquidity of our borrowing groups are cash provided by operations and borrowing availability under their respective debt instruments. For the details of the borrowing availability of our borrowing groups at December 31, 2018, see note 15 to the Consolidated Financial Statements. The aforementioned sources of liquidity may be supplemented in certain cases by contributions and/or loans from Liberty Global and its unrestricted subsidiaries. The liquidity of our borrowing groups generally is used to fund property and equipment additions, debt service requirements and income tax payments. From time to time, our borrowing groups may also require liquidity in connection with (i) acquisitions and other investment opportunities, (ii) loans to Liberty Global, (iii) capital distributions to Liberty Global and other equity owners or (iv) the satisfaction of contingent liabilities. No assurance can be given that any external funding would be available to our borrowing groups on favorable terms, or at all. For information regarding our borrowing groups' commitments and contingencies, see note 20 to the Consolidated Financial Statements.

For additional information regarding our consolidated cash flows, see the discussion under *Consolidated Statements of Cash Flows* below.

Capitalization

We seek to maintain our debt at levels that provide for attractive equity returns without assuming undue risk. In this regard, we generally seek to cause our operating subsidiaries to maintain their debt at levels that result in a consolidated debt balance (excluding the ITV Collar Loan and Lionsgate Loan and measured using subsidiary debt figures at swapped foreign currency exchange rates, consistent with the covenant calculation requirements of our subsidiary debt agreements) that is between four and five times our consolidated Adjusted EBITDA, although the timing of our acquisitions and financing transactions and the interplay of average and spot foreign currency rates may impact this ratio. The ratio of our December 31, 2018 consolidated debt to our annualized consolidated Adjusted EBITDA for the quarter ended December 31, 2018 was 5.0x. In addition, the ratio of our December 31, 2018 consolidated net debt (debt, as defined above, less cash and cash equivalents) to our annualized consolidated Adjusted EBITDA for the quarter ended December 31, 2018 was 4.8x. Consistent with how we calculate our leverage ratios under our debt agreements, these ratios are presented on a basis that includes the debt and Adjusted EBITDA of both our continuing and discontinued operations.

Our ability to service or refinance our debt and to maintain compliance with the leverage covenants in the credit agreements and indentures of our borrowing groups is dependent primarily on our ability to maintain or increase the Adjusted EBITDA of our operating subsidiaries and to achieve adequate returns on our property and equipment additions and acquisitions. In addition, our ability to obtain additional debt financing is limited by the incurrence-based leverage covenants contained in the various debt instruments of our borrowing groups. For example, if the Adjusted EBITDA of one of our borrowing groups were to decline, our ability to obtain additional debt could be limited. No assurance can be given that we would have sufficient sources of liquidity, or that any external funding would be available on favorable terms, or at all, to fund any such required repayment. At December 31, 2018, each of our borrowing groups was in compliance with its debt covenants. In addition, we do not anticipate any instances of non-compliance with respect to the debt covenants of our borrowing groups that would have a material adverse impact on our liquidity during the next 12 months.

At December 31, 2018, the outstanding principal amount of our consolidated debt, together with our finance lease obligations, aggregated $29.9 billion, including $3.6 billion that is classified as current in our consolidated statement of financial position and $22.7 billion that is not due until 2024 or thereafter. All of our consolidated debt and finance lease obligations have been borrowed or incurred by our subsidiaries at December 31, 2018. For additional information concerning our debt maturities, see note 15 to the Consolidated Financial Statements.

Notwithstanding our negative working capital position at December 31, 2018, we believe that we have sufficient resources to repay or refinance the current portion of our debt and finance lease obligations and to fund our foreseeable liquidity requirements during the next 12 months. However, as our maturing debt grows in later years, we anticipate that we will seek to refinance or otherwise extend our debt maturities. No assurance can be given that we will be able to complete these refinancing transactions or otherwise extend our debt maturities. In this regard, it is not possible to predict how political and economic conditions, sovereign debt concerns or any adverse regulatory developments could impact the credit and equity markets we access and, accordingly, our future liquidity and financial position. Our ability to access debt financing on favorable terms, or at all, could be adversely impacted by (i) the financial failure of any of our counterparties which could (a) reduce amounts available under committed credit facilities and (b) adversely impact our ability to access cash deposited with any failed financial institution and (ii) tightening of the credit markets. In addition, any weakness in the equity markets could make it less attractive to use our shares to satisfy contingent or other obligations, and sustained or increased competition, particularly in combination with adverse economic or regulatory developments, could have an unfavorable impact on our cash flows and liquidity.

For additional information concerning our debt and finance lease obligations, see note 15 to the Consolidated Financial Statements.

Consolidated Statements of Cash Flows

General. Our cash flows are subject to significant variations due to FX. See related discussion under *Quantitative and Qualitative Disclosures about Market Risk — Foreign Currency Risk* below.

Consolidated Statements of Cash Flows — 2018 compared to 2017

Summary. The 2018 and 2017 consolidated statements of cash flows of our continuing operations are summarized as follows:

	Year ended December 31, 2018	Year ended December 31, 2017	Change
	in millions		
Net cash provided by operating activities	$ 3,970.5	$ 3,464.4	$ 506.1
Net cash provided by investing activities	583.8	758.7	(174.9)
Net cash used by financing activities	(6,286.6)	(4,504.2)	(1,782.4)
Effect of exchange rate changes on cash and cash equivalents and restricted cash	(43.2)	114.1	(157.3)
Net decrease in cash and cash equivalents and restricted cash	$ (1,775.5)	$ (167.0)	$ (1,608.5)

Operating Activities. The increase in net cash provided by our operating activities is primarily attributable to the net effect of (i) an increase in cash provided by our Adjusted EBITDA and related working capital items, (ii) an increase in cash provided due to higher cash receipts related to derivative instruments and (iii) a decrease in reported net cash provided by operating activities due to FX.

Investing Activities. The decrease in net cash provided by our investing activities is primarily attributable to the net effect of (i) an increase in cash provided of $2,058.2 million in connection with net proceeds received from the sale of UPC Austria, (ii) a decrease in cash provided of $1,569.4 million related to distributions received from affiliates during 2017, (iii) a decrease in cash provided of $845.3 million associated with the equalization payment received during 2017 in connection with the completion of the VodafoneZiggo JV Transaction, (iv) an increase in cash provided of $331.4 million associated with lower cash paid in connection with acquisitions and (v) a decrease in cash provided of $198.4 million due to higher capital expenditures. Capital expenditures increased from $1,272.3 million during 2017 to $1,470.7 million during 2018 due to the net effect of (a) an increase in our net local currency capital expenditures and related working capital movements, including the impact of lower capital-related vendor financing, (b) a decrease in proceeds received for transfers to related parties and (c) an increase resulting from FX.

The capital expenditures that we report in our consolidated statements of cash flows do not include amounts that are financed under capital-related vendor financing or finance lease arrangements. Instead, these amounts are reflected as non-cash additions to our property and equipment when the underlying assets are delivered and as repayments of debt when the principal is repaid. In this discussion, we refer to (i) our capital expenditures as reported in our consolidated statements of cash flows, which exclude amounts financed under capital-related vendor financing or finance lease arrangements, and (ii) our total property, equipment and intangible asset additions, which include our capital expenditures on an accrual basis and amounts financed under capital-related vendor financing or finance lease arrangements. For further details regarding our property, equipment and intangible asset additions, see note 18 to the Consolidated Financial Statements. A reconciliation of our consolidated property, equipment and intangible asset additions to our consolidated capital expenditures, as reported in our consolidated statements of cash flows, is set forth below:

	Year ended December 31,	
	2018	2017
	in millions	
Property, equipment and intangible asset additions	$ 3,723.3	$ 3,725.8
Assets acquired under capital-related vendor financing arrangements	(2,175.5)	(2,336.2)
Assets acquired under finance leases	(102.4)	(106.7)
Changes in current liabilities related to capital expenditures	25.3	(10.6)
Capital expenditures, net	$ 1,470.7	$ 1,272.3
Capital expenditures, net:		
Third-party payments	$ 1,570.4	$ 1,608.8
Proceeds received for transfers to related parties (a)	(99.7)	(336.5)
Total capital expenditures, net	$ 1,470.7	$ 1,272.3

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(a) Primarily relates to transfers of centrally-procured property and equipment to our discontinued operations and the VodafoneZiggo JV.

The increase in our property, equipment and intangible asset additions during 2018 is primarily due to the net effect of (i) an increase due to FX and (ii) a decrease in local currency expenditures of our subsidiaries, primarily due to the net effect of (a) a decrease in expenditures for new build and upgrade projects, (b) an increase in baseline expenditures, including network improvements and expenditures for property and facilities and information technology systems, (c) an increase in expenditures for the purchase and installation of customer premises equipment, (d) an increase in software expenditures and (e) an increase in expenditures to support new customer products and operational efficiency initiatives. During 2018 and 2017, our property, equipment and intangible asset additions represented 31.1% and 33.1% of revenue, respectively.

We expect our 2019 property, equipment and intangible asset additions to decline significantly as compared to our 2018 property, equipment and intangible asset additions. The actual amount of our 2019 property, equipment and intangible asset additions may vary from our expectations for a variety of reasons, including (i) changes in (a) the competitive or regulatory environment, (b) business plans, (c) our expected future operating results or (d) foreign currency exchange rates and (ii) the availability of sufficient capital. Accordingly, no assurance can be given that our actual property, equipment and intangible asset additions will not vary materially from our expectations.

Financing Activities. The increase in net cash used by our financing activities is primarily attributable to the net effect of (i) an increase in cash used of $2,812.0 million related to higher net repayments and repurchases of debt and finance lease obligations, (ii) a decrease in cash used of $966.3 million due to lower repurchases of Liberty Global ordinary shares, (iii) an increase in cash used of $277.3 million related to higher distributions by subsidiaries to noncontrolling interests and (iv) a decrease in cash used of $250.9 million due to higher cash receipts related to derivative instruments.

Adjusted Free Cash Flow

We define adjusted free cash flow as net cash provided by our operating activities of our continuing operations, plus (i) cash payments for third-party costs directly associated with successful and unsuccessful acquisitions and dispositions and (ii) expenses financed by an intermediary, less (a) capital expenditures, as reported in our consolidated statements of cash flows, (b) principal payments on amounts financed by vendors and intermediaries and (c) principal payments on finance leases (exclusive of the portions of the network lease in Belgium and the duct leases in Germany that we assumed in connection with an acquisition), with each item excluding any cash provided or used by our discontinued operations. We believe that our presentation of adjusted free cash flow provides useful information to our investors because this measure can be used to gauge our ability to service debt and fund new investment opportunities. Adjusted free cash flow should not be understood to represent our ability to fund discretionary amounts, as we have various mandatory and contractual obligations, including debt repayments, which are not deducted to arrive at this amount. Investors should view adjusted free cash flow as a supplement to, and not a substitute for, E.U.-IFRS measures of liquidity included in our consolidated statements of cash flows.

The following table provides the details of our adjusted free cash flow:

	Year ended December 31,	
	2018	**2017**
	in millions	
Net cash provided by operating activities of our continuing operations (a)	$ 3,970.5	$ 3,464.4
Cash payments for direct acquisition and disposition costs	23.0	8.7
Expenses financed by an intermediary (b)	1,883.7	1,343.9
Capital expenditures, net	(1,470.7)	(1,272.3)
Principal payments on amounts financed by vendors and intermediaries	(4,258.0)	(2,721.5)
Principal payments on certain finance leases	(72.9)	(78.6)
Adjusted free cash flow	$ 75.6	$ 744.6

(a) Amounts include interest payments related to debt that has been or may be repaid in connection with the completion of the dispositions of UPC Austria, the Vodafone Disposal Group and UPC DTH. These interest payments have not been allocated to discontinued operations.

(b) For purposes of our consolidated statements of cash flows, expenses financed by an intermediary are treated as hypothetical operating cash outflows and hypothetical financing cash inflows when the expenses are incurred. When we pay the financing intermediary, we record financing cash outflows in our consolidated statements of cash flows. For purposes of our adjusted free cash flow definition, we add back the hypothetical operating cash outflow when these financed expenses are incurred and deduct the financing cash outflows when we pay the financing intermediary.

Contractual Commitments

The following table sets forth the U.S. dollar equivalents of our commitments as of December 31, 2018:

	Payments due during:						
	2019	2020	2021	2022	2023	Thereafter	Total
				in millions			
Debt (excluding interest)	$ 3,537.5	$ 269.8	$ 2,320.2	$ 673.3	$ 108.7	$ 22,405.8	$ 29,315.3
Finance leases (excluding interest)	78.2	74.0	66.0	67.7	70.2	265.2	621.3
Network and connectivity commitments	629.4	282.1	243.6	60.3	44.1	776.4	2,035.9
Programming commitments	858.0	558.7	286.2	52.1	14.2	44.9	1,814.1
Purchase commitments	742.8	243.9	88.5	31.9	20.4	45.5	1,173.0
Operating leases	123.9	85.4	66.6	54.3	46.8	178.6	555.6
Other commitments	27.0	3.2	0.5	0.3	—	—	31.0
Total (a)	$ 5,996.8	$ 1,517.1	$ 3,071.6	$ 939.9	$ 304.4	$ 23,716.4	$ 35,546.2
Projected cash interest payments on debt and finance lease obligations (b)	$ 1,249.9	$ 1,330.2	$ 1,286.2	$ 1,219.2	$ 1,198.4	$ 3,531.8	$ 9,815.7

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(a) The commitments included in this table do not reflect any liabilities that are included in our December 31, 2018 consolidated statement of financial position other than debt and finance lease obligations. Our liability for uncertain tax positions in the various jurisdictions in which we operate ($553.5 million at December 31, 2018) has been excluded from the table as the amount and timing of any related payments are not subject to reasonable estimation.

(b) Amounts are based on interest rates, interest payment dates, commitment fees and contractual maturities in effect as of December 31, 2018. These amounts are presented for illustrative purposes only and will likely differ from the actual cash payments required in future periods. In addition, the amounts presented do not include the impact of our interest rate derivative contracts, deferred financing costs, original issue premiums or discounts.

For information concerning our debt and finance lease obligations, see note 15 to the Consolidated Financial Statements. For information concerning our commitments, see note 20 to the Consolidated Financial Statements.

In addition to the commitments set forth in the table above, we have significant commitments under (i) derivative instruments and (ii) defined benefit plans and similar agreements, pursuant to which we expect to make payments in future periods. For information regarding projected cash flows associated with these derivative instruments, see *Quantitative and Qualitative Disclosures about Market Risk — Projected Cash Flows Associated with Derivative Instruments* below. For information regarding our derivative instruments, including the net cash paid or received in connection with these instruments during 2018 and 2017, see note 9 to the Consolidated Financial Statements. For information concerning our defined benefit plans, see note 17 to the Consolidated Financial Statements.

Critical Accounting Policies, Judgments and Estimates

In connection with the preparation of the consolidated financial statements, we make estimates and assumptions that affect the reported amounts of assets and liabilities, revenue and expenses and related disclosure of contingent assets and liabilities. Critical accounting policies are defined as those policies that are reflective of significant judgments, estimates and uncertainties, which would potentially result in materially different results under different assumptions and conditions. We believe the following accounting policies are critical in the preparation of the consolidated financial statements because of the judgment necessary to account for these matters and the significant estimates involved, which are susceptible to change:

- Impairment of property and equipment and intangible assets (including goodwill);
- Costs associated with construction and installation activities;
- Fair value measurements; and
- Income tax accounting.

We have discussed the selection of the aforementioned critical accounting policies with the audit committee of our board of directors. For additional information concerning our significant accounting policies, see note 2 to the Consolidated Financial Statements.

Impairment of Property and Equipment and Intangible Assets

Carrying Value. The aggregate carrying value of our property and equipment and intangible assets (including goodwill) that was held for use comprised 67.3% of the total assets of our continuing operations at December 31, 2018.

When circumstances warrant, we review the carrying amounts of our property and equipment and our intangible assets (other than goodwill and other indefinite-lived intangible assets) to determine whether such carrying amounts continue to be recoverable. Such changes in circumstance may include (i) an expectation of a sale or disposal of a non-current asset or asset group, (ii) adverse changes in market or competitive conditions, (iii) an adverse change in legal factors or business climate in the markets in which we operate and (iv) operating or cash flow losses. For purposes of impairment testing, non-current assets are grouped at the lowest level for which cash flows are largely independent of other assets and liabilities, generally at or below the reporting unit level (see below). If the carrying amount of the asset or asset group is greater than the expected undiscounted cash flows to be generated by such asset or asset group, an impairment adjustment is recognized. Such adjustment is measured by the amount that the carrying value of such asset or asset group exceeds its fair value. We generally measure fair value by considering (a) sale prices for similar assets, (b) discounted estimated future cash flows using an appropriate discount rate and/or (c) estimated replacement cost. Assets to be disposed of are recorded at the lower of their carrying amount or fair value less costs to sell.

We evaluate goodwill and other indefinite-lived intangible assets for impairment at least annually on October 1 and whenever facts and circumstances indicate that their carrying amounts may not be recoverable. For impairment evaluations with respect to both goodwill and other indefinite-lived intangibles, we first make a qualitative assessment to determine if the goodwill or other indefinite-lived intangible may be impaired. In the case of goodwill, if a reporting unit's fair value is less than its carrying value, we then compare the fair value of the reporting unit to its respective carrying amount. Any excess of the carrying amount over the fair value would be charged to operations as an impairment loss. A reporting unit is an operating segment or one level below an operating segment (referred to as a "component"). With respect to other indefinite-lived intangible assets, if the fair value of an indefinite-lived intangible asset is less than its carrying value, we then estimate its fair value and any excess of the carrying value over the fair value is also charged to operations as an impairment loss.

When required, considerable management judgment is necessary to estimate the fair value of reporting units and underlying non-current and indefinite-lived assets. The equity of one of our reporting units, Telenet, is publicly traded in an active market. For this reporting unit, our fair value determination is based on quoted market prices. For other reporting units, we typically determine fair value using an income-based approach (discounted cash flows) based on assumptions in our long-range business plans and, in some cases, a combination of an income-based approach and a market-based approach. With respect to our discounted cash flow analysis used in the income-based approach, the timing and amount of future cash flows under these business plans require estimates of, among other items, subscriber growth and retention rates, rates charged per product, expected gross margins and Adjusted EBITDA margins and expected property and equipment additions. The development of these cash flows, and the discount rate applied to the cash flows, is subject to inherent uncertainties, and actual results could vary significantly from such estimates. Our determination of the discount rate is based on a weighted average cost of capital approach, which uses a market participant's cost of equity and after-tax cost of debt and reflects the risks inherent in the cash flows. Based on the results of our 2018 qualitative assessment of our reporting unit carrying values, we determined that fair value exceeded carrying value for all of our reporting units.

During the three years ended December 31, 2018, we did not record any significant impairment charges with respect to our property and equipment and intangible assets. For additional information regarding our non-current assets, see note 7 to the Consolidated Financial Statements.

If, among other factors, (i) our equity values were to decline significantly or (ii) the adverse impacts of economic, competitive, regulatory or other factors were to cause our results of operations or cash flows to be worse than anticipated, we could conclude in future periods that impairment charges are required in order to reduce the carrying values of our goodwill and, to a lesser extent, other non-current assets. Any such impairment charges could be significant.

Costs Associated with Construction and Installation Activities

We capitalize costs associated with the construction of new cable and mobile transmission and distribution facilities and the installation of new cable services. Installation activities that are capitalized include (i) the initial connection (or drop) from our cable system to a customer location, (ii) the replacement of a drop and (iii) the installation of equipment for additional services, such as digital cable, telephone or broadband internet service. The costs of other customer-facing activities, such as reconnecting customer locations where a drop already exists, disconnecting customer locations and repairing or maintaining drops, are expensed as incurred.

The nature and amount of labor and other costs to be capitalized with respect to construction and installation activities involves significant judgment and estimate. In addition to direct external and internal labor and materials, we also capitalize other costs directly attributable to our construction and installation activities, including dispatch costs, quality-control costs, vehicle-related costs and certain warehouse-related costs. The capitalization of these costs is based on time sheets, time studies, standard costs, call tracking systems and other verifiable means that directly link the costs incurred with the applicable capitalizable activity. We continuously monitor the appropriateness of our capitalization policies and update the policies when necessary to respond to changes in facts and circumstances, such as the development of new products and services and changes in the manner that installations or construction activities are performed.

Fair Value Measurements

E.U.-IFRS provides guidance with respect to the recurring and nonrecurring fair value measurements and for a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three broad levels. Level 1 inputs are quoted market prices in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date. Level 2 inputs are inputs other than quoted market prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs for the asset or liability.

Recurring Valuations. We perform recurring fair value measurements with respect to our derivative instruments, our fair value method investments and certain instruments that we classify as debt, each of which are carried at fair value. We use (i) cash flow valuation models to determine the fair values of our interest rate and foreign currency derivative instruments and (ii) a Black Scholes option pricing model to determine the fair values of our equity-related derivative instruments. We use quoted market prices when available and, when not available, we use a combination of an income approach (discounted cash flows) and a market approach (market multiples of similar businesses) to determine the fair value of our fair value method investments. For a detailed discussion of the inputs we use to determine the fair value of our derivative instruments and fair value method investments, see note 10 to the Consolidated Financial Statements. See also notes 8 and 9 to the Consolidated Financial Statements for information concerning our fair value method investments and derivative instruments, respectively.

Changes in the fair values of our derivative instruments, fair value method investments and certain instruments that we classify as debt have had, and we believe will continue to have, a significant and volatile impact on our results of operations. During 2018 and 2017, we recognized a net gain (loss) of $744.5 million and ($1,013.0 million), respectively, attributable to changes in the fair values of these items.

As further described in note 10 to the Consolidated Financial Statements, actual amounts received or paid upon the settlement or disposition of these investments and instruments may differ materially from the recorded fair values at December 31, 2018.

For information concerning the sensitivity of the fair value of certain of our more significant derivative instruments to changes in market conditions, see *Quantitative and Qualitative Disclosures About Market Risk — Sensitivity Information* below.

Nonrecurring Valuations. Our nonrecurring valuations are primarily associated with (i) the application of acquisition accounting and (ii) impairment assessments, both of which require that we make fair value determinations as of the applicable valuation date. In making these determinations, we are required to make estimates and assumptions that affect the recorded amounts, including, but not limited to, expected future cash flows, market comparables and discount rates, remaining useful lives of non-current assets, replacement or reproduction costs of property and equipment and the amounts to be recovered in future periods from acquired net operating losses and other deferred tax assets. To assist us in making these fair value determinations, we may engage third-party valuation specialists. Our estimates in this area impact, among other items, the amount of depreciation and amortization, impairment charges and income tax expense or benefit that we report. Our estimates of fair value are based upon assumptions we believe to be reasonable, but which are inherently uncertain. A significant portion of our non-current assets were initially recorded through the application of acquisition accounting and all of our non-current assets are subject to impairment assessments. For additional information, see note 10 to the Consolidated Financial Statements. For information regarding our acquisitions and non-current assets, see notes 5 and 7 to the Consolidated Financial Statements, respectively.

Income Tax Accounting

We are required to estimate the amount of tax payable or refundable for the current year and the deferred tax assets and liabilities for the future tax consequences attributable to differences between the financial statement carrying amounts and income tax basis of assets and liabilities and the expected benefits of utilizing net operating loss and tax credit carryforwards, using enacted or substantially enacted tax rates in effect for each taxing jurisdiction in which we operate for the year in which those temporary differences are expected to be recovered or settled. This process requires our management to make assessments regarding the timing and probability of the ultimate tax impact of such items.

Net deferred tax assets are recognized to the extent that the realization of them is considered probable. Recognizing deferred tax assets requires us to make assessments about the timing of future events, including the probability of expected future taxable income and available tax planning strategies. At December 31, 2018, the aggregate of unrecognized deferred tax assets was $4,055.9 million. The actual amount of deferred income tax benefits realized in future periods will likely differ from the net deferred tax assets reflected in our December 31, 2018 consolidated balance sheet due to, among other factors, possible future changes in income tax law or interpretations thereof in the jurisdictions in which we operate and differences between estimated and actual future taxable income. Any such factors could have a material effect on our current and deferred tax positions as reported in the consolidated financial statements. A high degree of judgment is required to assess the impact of possible future outcomes on our current and deferred tax positions.

Tax laws in jurisdictions in which we have a presence are subject to varied interpretation, and many tax positions we take are subject to significant uncertainty regarding whether the position will be ultimately sustained after review by the relevant tax authority. We recognize the financial statement effects of a tax position when it is considered probable that the position will be sustained upon examination. The determination of whether the tax position meets the probable threshold requires a facts-based judgment using all information available. In a number of cases, we have concluded that the probable threshold is not met and, accordingly, the amount of tax benefit recognized in the consolidated financial statements is different than the amount taken or expected to be taken in our tax returns.

QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to market risk in the normal course of our business operations due to our investments in various foreign countries and ongoing investing and financing activities. Market risk refers to the risk of loss arising from adverse changes in foreign currency exchange rates, interest rates and stock prices. The risk of loss can be assessed from the perspective of adverse changes in fair values, cash flows and future profits. As further described below, we have established policies, procedures and processes governing our management of market risks and the use of derivative instruments to manage our exposure to such risks.

Cash and Investments

We invest our cash in highly liquid instruments that meet high credit quality standards. We are exposed to exchange rate risk to the extent that the denominations of our cash and cash equivalent balances, revolving lines of credit and other short-term sources of liquidity do not correspond to the denominations of our and our subsidiaries' short-term liquidity requirements. In order to mitigate this risk, we actively manage the denominations of our cash balances in light of our and our subsidiaries' forecasted liquidity requirements. At December 31, 2018, $670.2 million or 45.3%, $646.0 million or 43.6% and $151.3 million or 10.2% of our consolidated cash balances were denominated in euros, U.S. dollars and British pounds sterling, respectively.

We are exposed to market price fluctuations related to our investments in ITV and Lionsgate shares. At December 31, 2018, the aggregate fair value of these investments was $634.2 million and $77.5 million, respectively. All of our ITV shares are held through the ITV Collar, and 50% of our Lionsgate shares are held through the Lionsgate Forward. For information concerning the terms of (i) the ITV Collar and ITV Collar Loan and (ii) the Lionsgate Forward and Lionsgate Loan, see note 9 to the Consolidated Financial Statements. For those shares that are held through the ITV Collar and the Lionsgate Forward, our exposure to market risk is limited. For additional information concerning our investments in ITV and Lionsgate shares, see note 8 to the Consolidated Financial Statements.

Foreign Currency Risk

We are exposed to foreign currency exchange rate risk with respect to our consolidated debt in situations where our debt is denominated in a currency other than the functional currency of the operations whose cash flows support our ability to repay or refinance such debt. Although we generally match the denomination of our and our subsidiaries' borrowings with the functional currency of the operations that are supporting the respective borrowings, market conditions or other factors may cause us to enter into borrowing arrangements that are not denominated in the functional currency of the underlying operations (unmatched debt). In these cases, our policy is to provide for an economic hedge against foreign currency exchange rate movements by using derivative instruments to synthetically convert unmatched debt into the applicable underlying currency. At December 31, 2018, substantially all of our debt was either directly or synthetically matched to the applicable functional currencies of the underlying operations. For additional information concerning the terms of our derivative instruments, see note 9 to the Consolidated Financial Statements.

In addition to the exposure that results from the mismatch of our borrowings and underlying functional currencies, we are exposed to foreign currency risk to the extent that we enter into transactions denominated in currencies other than our or our subsidiaries' respective functional currencies (non-functional currency risk), such as equipment purchases, programming contracts, notes payable and notes receivable (including intercompany amounts). Changes in exchange rates with respect to amounts recorded in our consolidated statements of financial position related to these items will result in unrealized (based upon period-end exchange rates) or realized foreign currency transaction gains and losses upon settlement of the transactions. Moreover, to the extent that our revenue, costs and expenses are denominated in currencies other than our respective functional currencies, we will experience fluctuations in our revenue, costs and expenses solely as a result of changes in foreign currency exchange rates.Generally, we will consider hedging non-functional currency risks when the risks arise from agreements with third parties that involve the future payment or receipt of cash or other monetary items to the extent that we can reasonably predict the timing and amount of such payments or receipts and the payments or receipts are not otherwise hedged. In this regard, we have entered into foreign currency forward contracts to hedge certain of these risks. For additional information concerning our foreign currency forward contracts, see note 9 to the Consolidated Financial Statements.

We also are exposed to unfavorable and potentially volatile fluctuations of the U.S. dollar (our reporting currency) against the currencies of our operating subsidiaries when their respective financial statements are translated into U.S. dollars for inclusion in the Consolidated Financial Statements. Cumulative translation adjustments are recorded in foreign currency translation reserve as a separate component of equity. Any increase (decrease) in the value of the U.S. dollar against any foreign currency that is the functional currency of one of our operating subsidiaries will cause us to experience unrealized foreign currency translation losses (gains) with respect to amounts already invested in such foreign currencies. Accordingly, we may experience a negative impact on our comprehensive income or loss and equity with respect to our holdings solely as a result of FX. Our primary exposure to FX risk during the year ended December 31, 2018 was to the British pound sterling and euro as 53.2% and 32.0% of our reported revenue during the period was derived from subsidiaries whose functional currencies are the British pound sterling and euro, respectively. In addition, our reported operating results are impacted by changes in the exchange rates for the Swiss franc and other local currencies in Europe. We do not hedge against the risk that we may incur non-cash losses upon the translation of the financial statements of our subsidiaries and affiliates into U.S. dollars. For information regarding certain currency instability risks with respect to the British pound sterling and euro, see *Management's Discussion and Analysis of Financial Condition and Results of Operations — Overview* above.

The relationships between the primary currencies of the countries in which we operate and the U.S. dollar, which is our reporting currency, are shown below, per one U.S. dollar:

	As of December 31,	
	2018	2017
Spot rates:		
Euro	0.8732	0.8318
British pound sterling	0.7846	0.7394
Swiss franc	0.9828	0.9736
Hungarian forint	280.21	258.41
Polish zloty	3.7454	3.4730
Czech koruna	22.471	21.243
Romanian lei	4.0640	3.8830

	Year ended December 31,	
	2018	2017
Average rates:		
Euro	0.8472	0.8852
British pound sterling	0.7498	0.7767
Swiss franc	0.9781	0.9847
Hungarian forint	270.21	274.34
Polish zloty	3.6108	3.7766
Czech koruna	21.734	23.374
Romanian lei	3.9430	4.0514

Inflation and Foreign Investment Risk

We are subject to inflationary pressures with respect to labor, programming and other costs. While we attempt to increase our revenue to offset increases in costs, there is no assurance that we will be able to do so. Therefore, costs could rise faster than associated revenue, thereby resulting in a negative impact on our operating results, cash flows and liquidity. The economic environment in the respective countries in which we operate is a function of government, economic, fiscal and monetary policies and various other factors beyond our control that could lead to inflation. We are unable to predict the extent that price levels might be impacted in future periods by the current state of the economies in the countries in which we operate.

Interest Rate Risks

We are exposed to changes in interest rates primarily as a result of our borrowing activities, which include fixed-rate and variable-rate borrowings by our borrowing groups. Our primary exposure to variable-rate debt is through the EURIBOR-indexed and LIBOR-indexed debt of our borrowing groups and the variable-rate debt of certain of our other subsidiaries.

In general, we enter into derivative instruments to protect against increases in the interest rates on our variable-rate debt. Accordingly, we have entered into various derivative transactions to manage exposure to increases in interest rates. We use interest rate derivative contracts to exchange, at specified intervals, the difference between fixed and variable interest rates calculated by reference to an agreed-upon notional principal amount. We also use interest rate cap and collar agreements and swaptions that lock in a maximum interest rate if variable rates rise, but also allow our company to benefit, to a limited extent in the case of collars, from declines in market rates. Under our current guidelines, we use various interest rate derivative instruments to mitigate interest rate risk, generally for five years, with the later years covered primarily by swaptions. As such, the final maturity dates of our various portfolios of interest rate derivative instruments generally fall short of the respective maturities of the underlying variable-rate debt. In this regard, we use judgment to determine the appropriate composition and maturity dates of our portfolios of interest rate derivative instruments, taking into account the relative costs and benefits of different maturity profiles in light of current and expected future market conditions, liquidity issues and other factors. For additional information concerning the impacts of these interest rate derivative instruments, see note 9 to the Consolidated Financial Statements.

In July 2017, the U.K. Financial Conduct Authority (the authority that regulates LIBOR) announced that it intends to stop compelling banks to submit rates for the calculation of LIBOR after 2021. Currently, it is not possible to predict the exact transitional arrangements for calculating applicable reference rates that may be made in the U.K., the U.S., the Eurozone or elsewhere given that a number of outcomes are possible, including the cessation of the publication of one or more reference rates. Our loan documents contain provisions that contemplate alternative calculations of the base rate applicable to our LIBOR-indexed debt to the extent LIBOR is not available, which alternative calculations we do not anticipate will be materially different from what would have been calculated under LIBOR. Additionally, no mandatory prepayment or redemption provisions would be triggered under our loan documents in the event that the LIBOR rate is not available. It is possible, however, that any new reference rate that applies to our LIBOR-indexed debt could be different than any new reference rate that applies to our LIBOR-indexed derivative instruments. We anticipate managing this difference and any resulting increased variable-rate exposure through modifications to our debt and/or derivative instruments, however future market conditions may not allow immediate implementation of desired modifications and/or the company may incur significant associated costs.

Weighted Average Variable Interest Rate. At December 31, 2018, the outstanding principal amount of our variable-rate indebtedness aggregated $11.7 billion, and the weighted average interest rate (including margin) on such variable-rate indebtedness was approximately 4.2%, excluding the effects of interest rate derivative contracts, deferred financing costs, original issue premiums or discounts and commitment fees, all of which affect our overall cost of borrowing. Assuming no change in the amount outstanding, and without giving effect to any interest rate derivative contracts, deferred financing costs, original issue premiums or discounts and commitment fees, a hypothetical 50 basis point (0.50%) increase (decrease) in our weighted average variable interest rate would increase (decrease) our annual consolidated interest expense and cash outflows by $58.5 million. As discussed above and in note 9 to the Consolidated Financial Statements, we use interest rate derivative contracts to manage our exposure to increases in variable interest rates. In this regard, increases in the fair value of these contracts generally would be expected to offset most of the economic impact of increases in the variable interest rates applicable to our indebtedness to the extent and during the period that principal amounts are matched with interest rate derivative contracts.

Counterparty Credit Risk

We are exposed to the risk that the counterparties to the derivative instruments, undrawn debt facilities and cash investments of our subsidiary borrowing groups will default on their obligations to us. We manage these credit risks through the evaluation and monitoring of the creditworthiness of, and concentration of risk with, the respective counterparties. In this regard, credit risk associated with our derivative instruments and undrawn debt facilities is spread across a relatively broad counterparty base of banks and financial institutions. With the exception of a limited number of instances where we have required a counterparty to post collateral, neither party has posted collateral under the derivative instruments of our subsidiary borrowing groups. Collateral is generally not posted by either party under the derivative instruments of our subsidiary borrowing groups. Most of our cash currently is invested in either (i) AAA credit rated money market funds, including funds that invest in government obligations, or (ii) overnight deposits with banks having a minimum credit rating of A by Standard & Poor's or an equivalent rating by Moody's Investor Service. To date, neither the access to nor the value of our cash and cash equivalent balances have been adversely impacted by liquidity problems of financial institutions.

At December 31, 2018, our exposure to counterparty credit risk included (i) derivative assets with an aggregate fair value of $617.3 million, (ii) cash and cash equivalent and restricted cash balances of $1,498.3 million and (iii) aggregate undrawn debt facilities of $2,503.8 million.

Each of our subsidiary borrowing groups have entered into derivative instruments under master agreements with each counterparty that contain master netting arrangements that are applicable in the event of early termination by either party to such derivative instrument. The master netting arrangements are limited to the derivative instruments, and derivative-related debt instruments, governed by the relevant master agreement within each individual borrowing group and are independent of similar arrangements of our other subsidiary borrowing groups.

Under our derivative contracts, it is generally only the non-defaulting party that has a contractual option to exercise early termination rights upon the default of the other counterparty and to set off other liabilities against sums due upon such termination. However, in an insolvency of a derivative counterparty, under the laws of certain jurisdictions, the defaulting counterparty or its insolvency representatives may be able to compel the termination of one or more derivative contracts and trigger early termination payment liabilities payable by us, reflecting any mark-to-market value of the contracts for the counterparty. Alternatively, or in addition, the insolvency laws of certain jurisdictions may require the mandatory set off of amounts due under such derivative contracts against present and future liabilities owed to us under other contracts between us and the relevant counterparty. Accordingly, it is possible that we may be subject to obligations to make payments, or may have present or future liabilities owed to us partially or fully discharged by set off as a result of such obligations, in the event of the insolvency of a derivative counterparty, even though it is the counterparty that is in default and not us. To the extent that we are required to make such payments, our ability to do so will depend on our liquidity and capital resources at the time. In an insolvency of a defaulting counterparty, we will be an unsecured creditor in respect of any amount owed to us by the defaulting counterparty, except to the extent of the value of any collateral we have obtained from that counterparty.

In addition, where a counterparty is in financial difficulty, under the laws of certain jurisdictions, the relevant regulators may be able to (i) compel the termination of one or more derivative instruments, determine the settlement amount and/or compel, without any payment, the partial or full discharge of liabilities arising from such early termination that are payable by the relevant counterparty or (ii) transfer the derivative instruments to an alternative counterparty.

While we currently have no specific concerns about the creditworthiness of any counterparty for which we have material credit risk exposures, we cannot rule out the possibility that one or more of our counterparties could fail or otherwise be unable to meet its obligations to us. Any such instance could have an adverse effect on our cash flows, results of operations, financial condition and/or liquidity.

Although we actively monitor the creditworthiness of our key vendors, the financial failure of a key vendor could disrupt our operations and have an adverse impact on our revenue and cash flows.

Sensitivity Information

Information concerning the sensitivity of the fair value of certain of our more significant derivative instruments to changes in market conditions is set forth below. The potential changes in fair value set forth below do not include any amounts associated with the remeasurement of the derivative asset or liability into the applicable functional currency. For additional information, see notes 9 and 10 to the Consolidated Financial Statements.

Virgin Media Cross-currency and Interest Rate Derivative Contracts

Holding all other factors constant, at December 31, 2018, an instantaneous increase (decrease) of 10% in the value of the British pound sterling relative to the U.S. dollar would have decreased (increased) the aggregate fair value of the Virgin Media cross-currency and interest rate derivative contracts by approximately £560 million ($714 million).

UPC Holding Cross-currency and Interest Rate Derivative Contracts

Holding all other factors constant, at December 31, 2018:

(i) an instantaneous increase (decrease) of 10% in the value of the Swiss franc, Polish zloty, Hungarian forint, Czech koruna and Romanian lei relative to the euro would have decreased (increased) the aggregate fair value of the UPC Holding cross-currency and interest rate derivative contracts by approximately €420 million ($481 million);

(ii) an instantaneous increase (decrease) of 10% in the value of the euro relative to the U.S. dollar would have decreased (increased) the aggregate fair value of the UPC Holding cross-currency and interest rate derivative contracts by approximately €242 million ($277 million); and

(iii) an instantaneous increase (decrease) of 10% in the value of the Swiss franc relative to the U.S. dollar would have decreased (increased) the aggregate fair value of the UPC Holding cross-currency and interest rate derivative contracts by approximately €92 million ($105 million).

Telenet Cross-currency and Interest Rate Derivative Contracts

Holding all other factors constant, at December 31, 2018:

(i) an instantaneous increase (decrease) of 10% in the value of the euro relative to the U.S. dollar would have decreased (increased) the aggregate fair value of the Telenet cross-currency derivative contracts by approximately €330 million ($378 million); and

(ii) an instantaneous increase (decrease) in the relevant base rate of 50 basis points (0.50%) would have increased (decreased) the aggregate fair value of the Telenet cross currency, interest rate cap and swap contracts by approximately €106 million ($121 million).

Projected Cash Flows Associated with Derivative Instruments

The following table provides information regarding the projected cash flows associated with our derivative instruments. The U.S. dollar equivalents presented below are based on interest rates and exchange rates that were in effect as of December 31, 2018. These amounts are presented for illustrative purposes only and will likely differ from the actual cash payments required in future periods. For additional information regarding our derivative instruments, see note 9 to the Consolidated Financial Statements. For information concerning the counterparty credit risk associated with our derivative instruments, see the discussion under *Counterparty Credit Risk* above.

	Payments (receipts) due during:						
	2019	**2020**	**2021**	**2022**	**2023**	**Thereafter**	**Total**
				in millions			
Projected derivative cash payments (receipts), net:							
Interest-related (a)	$ (27.1)	$ (116.3)	$ (94.0)	$ (113.8)	$ (131.2)	$ (163.1)	$ (645.5)
Principal-related (b)	5.7	62.5	(155.7)	(243.7)	(129.3)	(787.4)	(1,247.9)
Other (c)	19.3	(55.3)	(489.2)	(183.6)	—	—	(708.8)
Total	$ (2.1)	$ (109.1)	$ (738.9)	$ (541.1)	$ (260.5)	$ (950.5)	$ (2,602.2)

(a) Includes (i) the cash flows of our interest rate cap, swaption, collar and swap contracts and (ii) the interest-related cash flows of our cross-currency and interest rate swap contracts.

(b) Includes the principal-related cash flows of our cross-currency swap contracts.

(c) Includes amounts related to our equity-related derivative instruments and foreign currency forward contracts. We may elect to use cash or the collective value of the related shares and equity-related derivative instrument to settle the ITV Collar Loan and the Lionsgate Loan.

RISK FACTORS

In addition to the other information contained in this Annual Report, you should consider the following risk factors in evaluating our results of operations, financial condition, business and operations or an investment in the shares of our company.

The risk factors described in this section have been separated into four groups:

- risks that relate to the competition we face and the technology used in our businesses;
- risks that relate to our operating in overseas markets and being subject to foreign regulation;
- risks that relate to certain financial matters; and
- other risks, including risks that, among other things, relate to the obstacles that may be faced by anyone who may seek to acquire us.

Although we describe below and elsewhere in this annual report the risks we consider to be the most material, there may be other unknown or unpredictable economic, business, competitive, regulatory or other factors that also could have material adverse effects on our results of operations, financial condition, business or operations in the future. In addition, past financial performance may not be a reliable indicator of future performance and historical trends should not be used to anticipate results or trends in future periods.

If any of the events described below, individually or in combination, were to occur, our businesses, prospects, financial condition, results of operations and/or cash flows could be materially adversely affected.

Factors Relating to Competition and Technology

We operate in increasingly competitive markets, and there is a risk that we will not be able to effectively compete with other service providers. The markets for cable television, broadband internet, telephony and mobile services are highly competitive. In the provision of video services, we face competition from FTA and DTT broadcasters, video provided via satellite platforms, networks using DSL, VDSL or vectoring technology, multi-channel multipoint distribution system operators, FTTx networks, OTT video content aggregators, and, in some countries where parts of our systems are overbuilt, cable networks, among others. Our operating businesses are facing increasing competition from video services provided by, or over the networks of, incumbent telecommunications operators and other service providers. As the availability and speed of broadband internet increases, we also face competition from OTT video content providers utilizing our or our competitors' high-speed internet connections. In the provision of telephony and broadband internet services, we are experiencing increasing competition from the incumbent telecommunications operators and other service providers in each country in which we operate, as well as mobile providers of voice and data. The incumbent telecommunications operators typically dominate the market for these services and have the advantage of nationwide networks and greater resources than we have to devote to the provision of these services. Many of the incumbent operators offer double-play, triple-play and quadruple-play bundles of services. In many countries, we also compete with other operators using LLU to provide these services, other facilities-based operators and wireless providers. Developments in the DSL and other technology used by the incumbent telecommunications operators and alternative providers have improved the attractiveness of our competitors' products and services and strengthened their competitive position. Developments in wireless technologies, such as LTE and WiFi, are creating additional competitive challenges.

In some of our markets, national and local government agencies may seek to become involved, either directly or indirectly, in the establishment of FTTx networks, DTT systems or other communications systems. We intend to pursue available options to restrict such involvement or to ensure that such involvement is on commercially reasonable terms. There can be no assurance, however, that we will be successful in these pursuits. As a result, we may face competition from entities not requiring a normal commercial return on their investments. In addition, we may face more vigorous competition than would have been the case if there were no government involvement.

We expect the level and intensity of competition to continue to increase from both existing competitors and new market entrants as a result of changes in the regulatory framework of the industries in which we operate, advances in technology, the influx of new market entrants and strategic alliances and cooperative relationships among industry participants. Increased competition could result in increased customer churn, reductions of customer acquisition rates for some products and services and significant price and promotional competition in our markets. In combination with difficult economic environments, these competitive pressures could adversely impact our ability to increase or, in certain cases, maintain the revenue, ARPU, RGUs, mobile subscribers, Adjusted EBITDA, Adjusted EBITDA margins and liquidity of our operating segments.

Changes in technology may limit the competitiveness of and demand for our services. Technology in the video, telecommunications and data services industries is changing rapidly, including advances in current technologies and the emergence of new technologies. New technologies, products and services may impact consumer behavior and therefore demand for our products and services. The ability to anticipate changes in technology and consumer tastes and to develop and introduce new and enhanced products and services on a timely basis will affect our ability to continue to grow, increase our revenue and number of subscribers and remain competitive. New products and services, once marketed, may not meet consumer expectations or demand, can be subject to delays in development and may fail to operate as intended. A lack of market acceptance of new products and services that we may offer, or the development of significant competitive products or services by others, could have a material adverse impact on our revenue and Adjusted EBITDA.

Our significant property and equipment additions, namely in connection with our Network Extensions, may not generate a positive return. Significant additions to our property and equipment are, or in the future may be, required to add customers to our networks and to upgrade or expand our broadband communications networks and upgrade customer premises equipment to enhance our service offerings and improve the customer experience. Additions to our property and equipment, which are currently underway, including in connection with our Network Extensions, require significant capital expenditures for equipment and associated labor costs to build out and/or upgrade our networks as well as for related customer premises equipment. Additionally, significant competition, the introduction of new technologies, the expansion of existing technologies, such as FTTx and advanced DSL technologies, the impact of natural disasters, or adverse regulatory developments could cause us to decide to undertake previously unplanned builds or upgrades of our networks and customer premises equipment.

No assurance can be given that any rebuilds, upgrades or extensions of our network (including the Network Extensions) will increase penetration rates, increase average monthly subscription revenue per average cable RGU or mobile subscriber, as applicable, or otherwise generate positive returns as anticipated, or that we will have adequate capital available to finance such rebuilds, upgrades or extensions. Additionally, costs related to our Network Extensions and property and equipment additions could end up being greater than originally anticipated or planned. If this is the case, we may require additional financing sooner than anticipated or we may have to delay or abandon some or all of our development and expansion plans or otherwise forego market opportunities. Additional financing may not be available on favorable terms, if at all, and our ability to incur additional debt will be limited by our debt agreements. If we are unable to, or elect not to, pay for costs associated with adding new customers, expanding, extending or upgrading our networks or making our other planned or unplanned additions to our property and equipment, or are delayed in making such investments, our growth could be limited and our competitive position could be harmed.

We depend almost exclusively on our relationships with third-party programming providers and broadcasters for programming content, and a failure to acquire a wide selection of popular programming on acceptable terms could adversely affect our business. The success of our video subscription business depends, in large part, on our ability to provide a wide selection of popular programming to our subscribers. We generally do not produce our own content and we depend on our agreements, relationships and cooperation with public and private broadcasters and collective rights associations to obtain such content. If we fail to obtain a diverse array of popular programming for our pay television services, including a sufficient selection of HD channels as well as non-linear content (such as a selection of attractive VoD content and rights for ancillary services such as DVR and catch up or 'Replay' services), on satisfactory terms, we may not be able to offer a compelling video product to our customers at a price they are willing to pay. Additionally, we are frequently negotiating and renegotiating programming agreements and our annual costs for programming can vary. There can be no assurance that we will be able to renegotiate or renew the terms of our programming agreements on acceptable terms or at all. We expect that programming and copyright costs will continue to rise in future periods as a result of (i) higher costs associated with the expansion of our digital video content, including rights associated with ancillary product offerings and rights that provide for the broadcast of live sporting events, (ii) rate increases and (iii) growth in the number of our enhanced video subscribers.

If we are unable to obtain or retain attractively priced competitive content, demand for our existing and future video services could decrease, thereby limiting our ability to attract new customers, maintain existing customers and/or migrate customers from lower-tier programming to higher-tier programming, thereby inhibiting our ability to execute our business plans. Furthermore, we may be placed at a competitive disadvantage if certain of our competitors obtain exclusive programming rights, particularly with respect to popular sports and movie programming, and as certain entrants in the OTT market, for example Netflix, Amazon and even Disney, increasingly produce their own exclusive content.

We depend on third-party suppliers and licensors to supply necessary equipment, software and certain services required for our businesses. We rely on third-party vendors for the equipment, software and services that we require in order to provide services to our customers. Our suppliers often conduct business worldwide and their ability to meet our needs is subject to various risks, including political and economic instability, natural calamities, interruptions in transportation systems, terrorism and labor issues. As a result, we may not be able to obtain the equipment, software and services required for our businesses on a timely basis or on satisfactory terms. Any shortfall in customer premises equipment could lead to delays in completing extensions to our networks and in connecting customers to our services and, accordingly, could adversely impact our ability to maintain or increase our RGUs, revenue and cash flows. Also, if demand exceeds the suppliers' and licensors' capacity or if they experience financial difficulties, the ability of our businesses to provide some services may be materially adversely affected, which in turn could affect our businesses' ability to attract and retain customers. Although we actively monitor the creditworthiness of our key third-party suppliers and licensors, the financial failure of a key third-party supplier or licensor could disrupt our operations and have an adverse impact on our revenue and cash flows. We rely upon intellectual property that is owned or licensed by us to use various technologies, conduct our operations and sell our products and services. Legal challenges could be made against our use of our or our licensed intellectual property rights (such as trademarks, patents and trade secrets) and we may be required to enter into licensing arrangements on unfavorable terms, incur monetary damages or be enjoined from use of the intellectual property rights in question.

Certain of our businesses that offer mobile telephony and data services rely on the radio access networks of third-party wireless network providers to carry our mobile communications traffic. Our services to mobile customers in many jurisdictions in which we operate rely on the use of MVNO arrangements in which we utilize the radio access networks of third-party wireless network providers to carry our mobile communications traffic. If any of our MVNO arrangements are terminated, or if the respective third-party wireless network provider fails to provide the services required under an MVNO arrangement, or if a third-party wireless network provider fails to deploy and maintain its network, and we are unable to find a replacement network operator on a timely and commercially reasonable basis or at all, we could be prevented from continuing the mobile services relying on such MVNO arrangement. Additionally, as our MVNO arrangements come to term, we may not be able to renegotiate renewal or replacement MVNO arrangements on the same or more favorable terms.

Failure in our or third-party technology or telecommunications systems or leakage of sensitive customer data could significantly disrupt our operations, reduce our customer base and result in fines, litigation or lost revenue. Our success depends, in part, on the continued and uninterrupted performance of our information technology and network systems, including internet sites, data hosting and processing facilities and other hardware, software and technical applications and platforms, as well as our customer service centers. Some of these are managed, hosted, provided or used by third-party service providers or their vendors, to assist in conducting our business. In addition, the hardware supporting a large number of critical systems for our cable network in a particular country or geographic region is housed in a relatively small number of locations. Our and our third-party service providers' systems and equipment (including our routers and set-top boxes) are vulnerable to damage or security breach from a variety of sources, including telecommunications failures, power loss, malicious human acts, security flaws, and natural disasters. Moreover, despite security measures, our and our third-party service providers' servers, systems and equipment are potentially vulnerable to physical or electronic break-ins, computer viruses, worms, phishing attacks and similar disruptive actions. We and our third party service providers may not be able to anticipate or respond in an adequate and timely manner to attempts to obtain authorized access to, disable or degrade our or our third party service providers' systems because the techniques for doing so change frequently, are increasingly complex and sophisticated and are difficult to detect for periods of time. In addition, the security measures and procedures we and our third-party service providers have in place to protect sensitive consumer data and other information may not be sufficient to counter all data security breaches, cyber-attacks, or system failures. In some cases, mitigation efforts may depend on third parties who may not deliver products or services that meet the required contractual standards or whose hardware, software or network services may be subject to error, defect, delay, or outage.

Furthermore, our operating activities could be subject to risks caused by misappropriation, misuse, leakage, falsification or accidental release or loss of information maintained in our information technology systems and networks and those of our third-party vendors, including customer, personnel and vendor data. As a result of the increasing awareness concerning the importance of safeguarding personal information, the potential misuse of such information and legislation that has been adopted or is being considered across all of our markets regarding the protection, privacy and security of personal information, information-related risks are increasing, particularly for businesses like ours that handle a large amount of personal customer data. Failure to comply with these data protection laws may result in, among other consequences, fines, litigation or regulatory actions by state, federal or non-U.S. authorities.

Despite the precautions we have taken, unanticipated problems affecting our systems could cause business disruptions such as failures in our information technology systems, disruption in the transmission of signals over our networks or similar problems. Further, although we devote significant resources to our cybersecurity programs and have implemented security measures to protect our systems and data, and to prevent, detect and respond to data security incidents, there can be no assurance that our efforts will prevent these threats. Any disruptive situation that causes loss, misappropriation, misuse or leakage of data could damage our reputation and the credibility of our operations, and could subject us to potential liability, including litigation or other legal actions against us or the imposition of penalties, fines, fees or liabilities, which may not be covered by our insurance policies. Further, sustained or repeated system failures that interrupt our ability to provide service to our customers or otherwise meet our business obligations in a timely manner could adversely affect our reputation and result in a loss of customers and an adverse impact on revenue. Also, a cybersecurity breach could require us to devote significant management resources to address the problems associated with the breach and to expend significant additional resources to upgrade further the security measures we employ to protect personal information against cyber-attacks and other wrongful attempts to access such information, which could result in a disruption of our operations.

The "Virgin" brand is used by our subsidiary Virgin Media under licenses from Virgin Enterprises Limited and is not under the control of Virgin Media. The activities of the group of companies utilizing the "Virgin" brand and other licensees could have a material adverse effect on the goodwill of customers towards Virgin Media as a licensee and the licenses from Virgin Enterprises Limited can be terminated in certain circumstances. The "Virgin" brand is integral to Virgin Media's corporate identity. Virgin Media is reliant on the general goodwill of consumers towards the Virgin brand. Consequently, adverse publicity in relation to the group of companies utilizing the "Virgin" brand or its principals, particularly Sir Richard Branson, who is closely associated with the brand, or in relation to another licensee of the "Virgin" name and logo (particularly in the U.K., where Virgin Media does business) could have a material adverse effect on Virgin Media's reputation and on Virgin Media's and our business and results of operations. In addition, the licenses from Virgin Enterprises Limited can be terminated in certain circumstances. For example, Virgin Enterprises Limited can terminate the licenses, after providing Virgin Media with an opportunity to cure, (i) if Virgin Media or any of its affiliates commits persistent and material breaches or a flagrant and material breach of the licenses, (ii) if Virgin Enterprises Limited has reasonable grounds to believe that the use (or lack of use) of the licensed trademarks by Virgin Media has been or is likely to result in a long-term and material diminution in the value of the "Virgin" brand, or (iii) if a third-party who is not (or one of whose directors is not) a "fit and proper person", such as a legally disqualified director or a bankrupt entity, acquires "control" of Liberty Global. Such a termination could have a material adverse effect on Virgin Media's and our business and results of operations.

Factors Relating to Overseas Operations and Foreign Regulation

Our businesses are conducted almost exclusively outside of the U.S., which gives rise to numerous operational risks. Our businesses operate almost exclusively in countries outside the U.S. and are thereby subject to the following inherent risks:

- fluctuations in foreign currency exchange rates;
- difficulties in staffing and managing international operations;
- potentially adverse tax consequences;
- export and import restrictions, custom duties, tariffs and other trade barriers;
- increases in taxes and governmental fees;
- economic and political instability; and
- changes in foreign and domestic laws and policies that govern operations of foreign-based companies.

Operational risks that we may experience in certain countries include disruptions of services or loss of property or equipment that are critical to overseas businesses due to expropriation, nationalization, war, insurrection, terrorism or general social or political unrest.

We are exposed to foreign currency exchange rate risk. We are exposed to foreign currency exchange rate risk with respect to our consolidated debt in situations where our debt is denominated in a currency other than the functional currency of the operations whose cash flows support our ability to repay or refinance such debt. Although we generally seek to match the denomination of our and our subsidiaries' borrowings with the functional currency of the operations that are supporting the respective borrowings, market conditions or other factors may cause us to enter into borrowing arrangements that are not denominated in the functional currency of the underlying operations (unmatched debt). In these cases, our policy is to provide for an economic hedge against foreign currency exchange rate movements by using derivative instruments to synthetically convert unmatched debt into the applicable underlying currency. At December 31, 2018, substantially all of our debt was either directly or synthetically matched to the applicable functional currencies of the underlying operations.

In addition to the exposure that results from the mismatch of our borrowings and underlying functional currencies, we are exposed to foreign currency risk to the extent that we enter into transactions denominated in currencies other than our or our subsidiaries' respective functional currencies (non-functional currency risk), such as equipment purchases, programming contracts, notes payable and notes receivable (including intercompany amounts). Changes in exchange rates with respect to amounts recorded in our consolidated statements of financial position related to these items will result in unrealized (based upon period-end exchange rates) or realized foreign currency transaction gains and losses upon settlement of the transactions. Moreover, to the extent that our revenue, costs and expenses are denominated in currencies other than our respective functional currencies, we will experience fluctuations in our revenue, costs and expenses solely as a result of changes in foreign currency exchange rates. Generally, we will consider hedging non-functional currency risks when the risks arise from agreements with third parties that involve the future payment or receipt of cash or other monetary items to the extent that we can reasonably predict the timing and amount of such payments or receipts and the payments or receipts are not otherwise hedged. In this regard, we have entered into foreign currency forward contracts to hedge certain of these risks. For additional information concerning our foreign currency forward contracts, see note 9 to the Consolidated Financial Statements.

We also are exposed to unfavorable and potentially volatile fluctuations of the U.S. dollar (our reporting currency) against the currencies of our operating subsidiaries when their respective financial statements are translated into U.S. dollars for inclusion in the consolidated financial statements. Cumulative translation adjustments are recorded in foreign currency translation reserve as a separate component of equity. Any increase (decrease) in the value of the U.S. dollar against any foreign currency that is the functional currency of one of our operating subsidiaries will cause us to experience unrealized foreign currency translation losses (gains) with respect to amounts already invested in such foreign currencies. Accordingly, we may experience a negative impact on our comprehensive income or loss and equity with respect to our holdings solely as a result of foreign currency translation. Our primary exposure to FX risk during the year ended December 31, 2018 was to the British pound sterling and euro as 53.2% and 32.0% of our reported revenue during the period was derived from subsidiaries whose functional currencies are the British pound sterling and euro, respectively. In addition, our reported operating results are impacted by changes in the exchange rates for the Swiss franc and other local currencies in Europe. We do not hedge against the risk that we may incur non-cash losses upon the translation of the financial statements of our subsidiaries and affiliates into U.S. dollars.

Our businesses are subject to risks of adverse regulation. Our businesses are subject to the unique regulatory regimes of the countries in which they operate. Video distribution, broadband internet, telephony and mobile businesses are subject to licensing or registration eligibility rules and regulations, which vary by country. The provision of electronic communications networks and services requires our licensing from, or registration with, the appropriate regulatory authorities and, for telephony services, entrance into interconnection arrangements with other phone companies, including the incumbent phone company. It is possible that countries in which we operate may adopt laws and regulations regarding electronic commerce, which could dampen the growth of the internet services being offered and developed by these businesses. In a number of countries, our ability to increase the prices we charge for our cable television service or make changes to the programming packages we offer is limited by regulation or conditions imposed by competition authorities or is subject to review by regulatory authorities or is subject to termination rights of customers. In addition, regulatory authorities may grant new licenses to third parties and, in any event, in most of our markets new entry is possible without a license, although there may be registration eligibility rules and regulations, resulting in greater competition in territories where our businesses may already be active. More significantly, regulatory authorities may require us to grant third parties access to our bandwidth, frequency capacity, facilities or services to distribute their own services or resell our services to end customers. Consequently, our businesses must adapt their ownership and organizational structure as well as their pricing and service offerings to satisfy the rules and regulations to which they are subject. A failure to comply with applicable rules and regulations could result in penalties, restrictions on our business or loss of required licenses or other adverse conditions.

Adverse changes in rules and regulations could:

- impair our ability to use our bandwidth in ways that would generate maximum revenue and Adjusted EBITDA;
- create a shortage of capacity on our networks, which could limit the types and variety of services we seek to provide our customers;
- impact our ability to access spectrum for our mobile services;
- strengthen our competitors by granting them access and lowering their costs to enter into our markets; and
- have a significant adverse impact on our results of operations.

Businesses, including ours, that offer multiple services, such as video distribution as well as internet, telephony, and/or mobile services, or that are vertically integrated and offer both video distribution and programming content, often face close regulatory scrutiny from competition authorities in several countries in which they operate. This is particularly the case with respect to any proposed business combinations, which will often require clearance from national competition authorities. The regulatory authorities in several countries in which we do business have considered from time to time what access rights, if any, should be afforded to third parties for use of existing cable television networks and have imposed access obligations in certain countries. This has resulted, for example, in obligations with respect to call termination for our telephony business in Europe, video must carry obligations in many markets in which we operate and video and broadband internet access obligations in Belgium.

When we acquire additional communications companies, these acquisitions may require the approval of governmental authorities (either at country or, in the case of the E.U., European level), which can block, impose conditions on, or delay an acquisition, thus hampering our opportunities for growth. In the event conditions are imposed and we fail to meet them in a timely manner, the governmental authority may impose fines and, if in connection with a merger transaction, may require restorative measures, such as mandatory disposition of assets or divestiture of operations.

New legislation may significantly alter the regulatory regimes applicable to us, which could adversely affect our competitive position and profitability, and we may become subject to more extensive regulation if we are deemed to possess significant market power in any of the markets in which we operate. Significant changes to the existing regulatory regimes applicable to the provision of cable television, telephony, internet and mobile services have been and are still being introduced. For example, in the E.U. a large element of regulation affecting our business derives from a number of Directives that are the basis of the regulatory regimes concerning many of the services we offer across the E.U. The various Directives require Member States to harmonize their laws on communications and cover issues such as access, user rights, privacy and competition. These Directives are reviewed by the E.U. from time to time and any changes to them could lead to substantial changes in the way in which our businesses are regulated and to which we would have to adapt. In addition, we are subject to review by competition or national regulatory authorities in certain countries concerning whether we exhibit Significant Market Power. A finding of Significant Market Power can result in our company becoming subject to pricing, open access, unbundling and other requirements that could provide a more favorable operating environment for existing and potential competitors.

The U.K. referendum advising for the exit of the U.K. from the E.U. could have a material adverse effect on our business, financial condition, results of operations or liquidity. On June 23, 2016, the U.K. held a referendum in which voters approved, on an advisory basis, an exit from the E.U., commonly referred to as "Brexit". Following the failure to reach a separation deal by the original deadline of March 29, 2019, the E.U. granted the U.K. an extension until October 31, 2019. Uncertainty remains as to what kind of separation agreement, if any, may be agreed and approved by the U.K. Parliament. It is possible that the U.K. will again fail to agree to a separation agreement with the E.U. by the new October 31, 2019 deadline which, absent another extension, would require the U.K. to leave the E.U. under a so-called "hard Brexit" or "no-deal Brexit" without agreements on trade, finance and other key elements. The foregoing has caused considerable uncertainty as to Brexit's impact on the free movement of goods, services, people and capital between the U.K. and the E.U., customer behavior, economic conditions, interest rates, currency exchange rates, and availability of capital. Examples of the potential impact Brexit could have on our business, financial condition or results of operations include:

- changes in foreign currency exchange rates and disruptions in the capital markets. For example, a sustained period of weakness in the British pound sterling or the euro could have an adverse impact on our liquidity, including our ability to fund repurchases of our equity securities and other U.S. dollar-denominated liquidity requirements;
- shortages of labor necessary to conduct our business, including our Network Extensions in the U.K.;
- disruption to our U.K. supply chain and related increased cost of supplies;
- a weakened U.K. economy resulting in decreased consumer demand for our products and services in the U.K.;
- legal uncertainty and potentially divergent national laws and regulations as the U.K. determines which E.U. laws and directives to replace or replicate, or where previously implemented by enactment of U.K. laws or regulations, to retain, amend or repeal; and
- various geopolitical forces may impact the global economy and our business, including, for example, other E.U. member states (in particular those member states where we have operations) proposing referendums to, or electing to, exit the E.U.

We cannot be certain that we will be successful with respect to acquisitions, dispositions, partnerships or other similar transactions, or that we will achieve the anticipated benefits thereof. Historically, our businesses have grown, in part, through selective acquisitions that enabled them to take advantage of existing networks, local service offerings and region-specific management expertise, and we have also taken advantage of attractive opportunities to sell select businesses. We expect to seek to continue improving our company through attractive acquisitions, dispositions, partnerships or other similar transactions in selected markets, such as the SFR BeLux acquisition in June 2017, the UPC Austria disposition in July 2018 and the pending sales of the Vodafone Disposal Group, the operations of UPC DTH and UPC Switzerland. Our ability to complete any such transaction may be limited by many factors, including government regulation, availability of financing, our or our counterparty's debt covenants, the prevalence of complex ownership structures among potential targets, acquirers, or partners, and competition from other potential acquirers, including private equity funds. Even if we are successful in completing such transactions, integration and separation activities may present significant costs and challenges. We cannot be assured that we will be successful with respect to acquisitions, dispositions, partnerships or other similar transactions or realizing the anticipated benefits thereof, including for, example, the sale of the Vodafone Disposal Group.

In addition, we anticipate that most, if not all, companies acquired by us will be located outside the U.S. Foreign companies may not have disclosure controls and procedures or internal controls over financial reporting that are as thorough or effective as those required by U.S. securities laws. While we intend to conduct appropriate due diligence and to implement appropriate controls and procedures as we integrate acquired companies, we may not be able to certify as to the effectiveness of these companies' disclosure controls and procedures or internal controls over financial reporting until we have fully integrated them.

We may have exposure to additional tax liabilities. We are subject to income taxes as well as non-income based taxes, such as VAT in the U.K., the U.S. and many other jurisdictions around the world. In addition, most tax jurisdictions that we operate in have complex and subjective rules regarding the valuation of intercompany services, cross-border payments between affiliated companies and the related effects on income tax, VAT and transfer tax. Significant judgment is required in determining our worldwide provision for income taxes and other tax liabilities. In the ordinary course of our business, there are many transactions and calculations where the ultimate tax determination is uncertain. We are regularly under audit by tax authorities in many of the jurisdictions in which we operate. Although we believe that our tax estimates are reasonable, any material differences as a result of final determinations of tax audits or tax disputes could have an adverse effect on our financial position and results of operations in the period or periods for which determination is made.

We are subject to changing tax laws, treaties and regulations in and between countries in which we operate, including treaties between and among the U.K., the U.S. and many other jurisdictions in which we have a presence. Also, various income tax proposals in the jurisdictions in which we operate could result in changes to the existing laws on which our deferred taxes are calculated. A change in these tax laws, treaties or regulations, or in the interpretation thereof, could result in a materially higher income or non-income tax expense, and any such material changes could cause a material change in our effective tax rate. In this regard, there have been significant changes or proposed changes to the tax laws in numerous jurisdictions in which we operate, the impacts of which have been reflected accordingly in our financial statements.

Further changes in the tax laws of the foreign jurisdictions in which we operate could arise as a result of the base erosion and profit shifting project that has been undertaken by the OECD or the European Commission Anti-Tax Avoidance Package. The OECD, which represents a coalition of member countries that encompass most of the jurisdictions in which we operate, and the European Commission have undertaken studies and are publishing action plans that include recommendations aimed at addressing what they believe are issues within tax systems that may lead to tax avoidance by companies. It is possible that jurisdictions in which we do business could react to these initiatives or their own concerns by enacting tax legislation that could adversely affect us or our shareholders through increasing our tax liabilities.

Factors Relating to Certain Financial Matters

Our substantial leverage could limit our ability to obtain additional financing and have other adverse effects. We seek to maintain our debt at levels that provide for attractive equity returns without assuming undue risk. In this regard, we generally seek to cause our operating subsidiaries to maintain their debt at levels that result in a consolidated debt balance that is between four and five times our consolidated Adjusted EBITDA. As a result, we are highly leveraged. At December 31, 2018, the outstanding principal amount of our consolidated debt, together with our finance lease obligations, aggregated \$29.9 billion, including \$3.6 billion that is classified as current in our consolidated statement of financial position and \$22.7 billion that is not due until 2024 or thereafter. We believe that we have sufficient resources to repay or refinance the current portion of our debt and finance lease obligations and to fund our foreseeable liquidity requirements during the next 12 months. However, as our maturing debt grows in later years, we anticipate that we will seek to refinance or otherwise extend our debt maturities. In this regard, we completed refinancing transactions during 2018 that, among other things, resulted in the extension of certain of our subsidiaries' debt maturities. No assurance can be given that we will be able to complete these refinancing transactions or otherwise extend our debt maturities. In this regard, it is not possible to predict how political and economic conditions, sovereign debt concerns or any adverse regulatory developments could impact the credit and equity markets we access and, accordingly, our future liquidity and financial position.

Our ability to service or refinance our debt and to maintain compliance with the leverage covenants in the credit agreements and indentures of our borrowing groups is dependent primarily on our ability to maintain or increase the Adjusted EBITDA of our operating subsidiaries and to achieve adequate returns on our property and equipment additions and acquisitions. In addition, our ability to obtain additional debt financing is limited by the incurrence-based leverage covenants contained in the various debt instruments of our borrowing groups. For example, if the Adjusted EBITDA of our subsidiary, UPC Holding were to decline, our ability to obtain additional debt could be limited. Accordingly, if our cash provided by operations declines or we encounter other material liquidity requirements, we may be required to seek additional debt or equity financing in order to meet our debt obligations and other liquidity requirements as they come due. In addition, our current debt levels may limit our ability to incur additional debt financing to fund working capital needs, acquisitions, property and equipment additions, or other general corporate requirements. We can give no assurance that any additional debt or equity financing will be available on terms that are as favorable as the terms of our existing debt or at all. Further, our board of directors has approved share repurchase programs for Liberty Global. Any cash used by our company in connection with any future purchases of our ordinary shares would not be available for other purposes, including the repayment of debt. For additional information concerning our share repurchase programs, see note 13 to the Consolidated Financial Statements.

Certain of our subsidiaries are subject to various debt instruments that contain restrictions on how we finance our operations and operate our businesses, which could impede our ability to engage in beneficial transactions. Certain of our subsidiaries are subject to significant financial and operating restrictions contained in outstanding credit agreements, indentures and similar instruments of indebtedness. These restrictions will affect, and in some cases significantly limit or prohibit, among other things, the ability of those subsidiaries to:

- incur or guarantee additional indebtedness;
- pay dividends or make other upstream distributions;
- make investments;
- transfer, sell or dispose of certain assets, including subsidiary stock;
- merge or consolidate with other entities;
- engage in transactions with us or other affiliates; or
- create liens on their assets.

As a result of restrictions contained in these debt instruments, the companies party thereto, and their subsidiaries, could be unable to obtain additional capital in the future to:

- fund property and equipment additions or acquisitions that could improve their value;
- meet their loan and capital commitments to their business affiliates;
- invest in companies in which they would otherwise invest;
- fund any operating losses or future development of their business affiliates;
- obtain lower borrowing costs that are available from secured lenders or engage in advantageous transactions that monetize their assets; or
- conduct other necessary or prudent corporate activities.

In addition, most of the credit agreements to which these subsidiaries are parties include financial covenants that require them, in certain circumstances, to maintain certain leverage and other financial ratios. Their ability to meet these financial covenants may be affected by adverse economic, competitive, or regulatory developments and other events beyond their control, and we cannot assure you that these financial covenants will be met. In the event of a default under such subsidiaries' credit agreements or indentures, the lenders may accelerate the maturity of the indebtedness under those agreements or indentures, which could result in a default under other outstanding credit facilities or indentures. We cannot assure you that any of these subsidiaries will have sufficient assets to pay indebtedness outstanding under their credit agreements and indentures. Any refinancing of this indebtedness is likely to contain similar restrictive covenants.

We are exposed to interest rate risks. Shifts in such rates may adversely affect the debt service obligation of our subsidiaries. We are exposed to the risk of fluctuations in interest rates, primarily through the credit facilities of certain of our subsidiaries, which are indexed to EURIBOR, LIBOR or other base rates. Although we enter into various derivative transactions to manage exposure to movements in interest rates, there can be no assurance that we will be able to continue to do so at a reasonable cost or at all. If we are unable to effectively manage our interest rate exposure through derivative transactions, any increase in market interest rates would increase our interest rate exposure and debt service obligations, which would exacerbate the risks associated with our leveraged capital structure.

In July 2017, the U.K. Financial Conduct Authority (the authority that regulates LIBOR) announced that it intends to stop compelling banks to submit rates for the calculation of LIBOR after 2021. Currently, it is not possible to predict the exact transitional arrangements for calculating applicable reference rates that may be made in the U.K., the U.S., the Eurozone or elsewhere given that a number of outcomes are possible, including the cessation of the publication of one or more reference rates. Our loan documents contain provisions that contemplate alternative calculations of the base rate applicable to our LIBOR-indexed debt to the extent LIBOR is not available, which alternative calculations we do not anticipate will be materially different from what would have been calculated under LIBOR. Additionally, no mandatory prepayment or redemption provisions would be triggered under our loan documents in the event that the LIBOR rate is not available. It is possible, however, that any new reference rate that applies to our LIBOR-indexed debt could be different than any new reference rate that applies to our LIBOR-indexed derivative instruments. We anticipate managing this difference and any resulting increased variable-rate exposure through modifications to our debt and/or derivative instruments, however future market conditions may not allow immediate implementation of desired modifications and/or the company may incur significant associated costs.

We are subject to increasing operating costs and inflation risks, which may adversely affect our results of operations. While our operations attempt to increase our subscription rates to offset increases in programming and operating costs, there is no assurance that they will be able to do so. In certain countries in which we operate, our ability to increase subscription rates is subject to regulatory controls. Also, our ability to increase subscription rates may be constrained by competitive pressures. Therefore, operating costs may rise faster than associated revenue, resulting in a material negative impact on our cash flow and net earnings (loss). We are also impacted by inflationary increases in salaries, wages, benefits and other administrative costs in certain of our markets.

Continuing uncertainties and challenging conditions in the global economy and in the countries in which we operate may adversely impact our business, financial condition and results of operations. The current macroeconomic environment is highly volatile, and continuing instability in global markets, including the ongoing struggles in Europe related to sovereign debt issues, the risk of deflation and the stability of the British pound sterling and the euro, has contributed to a challenging global economic environment. Future developments are dependent upon a number of political and economic factors, including the effectiveness of measures by the E.U. Commission to address debt burdens of certain countries in Europe and the overall stability of the eurozone. As a result, we cannot predict how long challenging conditions will exist or the extent to which the markets in which we operate may deteriorate. Additional risks arising from the ongoing economic challenges in Europe are described below under the Risk Factor titled: *We are exposed to sovereign debt and currency instability risks that could have an adverse impact on our liquidity, financial condition and cash flows.*

Unfavorable economic conditions may impact a significant number of our subscribers and/or the prices we are able to charge for our products and services, and, as a result, it may be (i) more difficult for us to attract new subscribers, (ii) more likely that subscribers will downgrade or disconnect their services and (iii) more difficult for us to maintain ARPUs at existing levels. Countries may also seek new or increased revenue sources due to fiscal deficits. Such actions may further adversely affect our company. Accordingly, our ability to increase, or, in certain cases, maintain, the revenue, ARPUs, RGUs, mobile subscribers, Adjusted EBITDA, Adjusted EBITDA margins and liquidity of our operating segments could be adversely affected if the macroeconomic environment remains uncertain or declines further. We are currently unable to predict the extent of any of these potential adverse effects.

We are exposed to sovereign debt and currency instability risks that could have an adverse impact on our liquidity, financial condition and cash flows. Our operations are subject to macroeconomic and political risks that are outside of our control. For example, high levels of sovereign debt in the U.S. and several countries in which we or our affiliates operate, combined with weak growth and high unemployment, could potentially lead to fiscal reforms (including austerity measures), tax increases, sovereign debt restructurings, currency instability, increased counterparty credit risk, high levels of volatility and disruptions in the credit and equity markets, as well as other outcomes that might adversely impact our company. With regard to currency instability issues, concerns exist in the eurozone with respect to individual macro-fundamentals on a country-by-country basis, as well as with respect to the overall stability of the European monetary union and the suitability of a single currency to appropriately deal with specific fiscal management and sovereign debt issues in individual eurozone countries. The realization of these concerns could lead to the exit of one or more countries from the European monetary union and the re-introduction of individual currencies in these countries, or, in more extreme circumstances, the possible dissolution of the European monetary union entirely, which could result in the redenomination of a portion or, in the extreme case, all of our euro-denominated assets, liabilities and cash flows to the new currency of the country in which they originated. This could result in a mismatch in the currencies of our assets, liabilities and cash flows. Any such mismatch, together with the capital market disruption that would likely accompany any such redenomination event, could have a material adverse impact on our liquidity and financial condition. Furthermore, any redenomination event would likely be accompanied by significant economic dislocation, particularly within the eurozone countries, which in turn could have an adverse impact on demand for our products and services, and accordingly, on our revenue and cash flows. Moreover, any changes from euro to non-euro currencies within the countries in which we operate would require us to modify our billing and other financial systems. No assurance can be given that any required modifications could be made within a time frame that would allow us to timely bill our customers or prepare and file required financial reports. In light of the significant exposure that we have to the euro through our euro-denominated borrowings, derivative instruments, cash balances and cash flows, a redenomination event could have a material adverse impact on our company.

We may not freely access the cash of our operating companies. Our operations are conducted through our subsidiaries. Our current sources of corporate liquidity include (i) our cash and cash equivalents and (ii) interest and dividend income received on our cash and cash equivalents and investments. From time to time, we also receive (a) proceeds in the form of distributions or loan repayments from our subsidiaries or affiliates, (b) proceeds upon the disposition of investments and other assets and (c) proceeds in connection with the incurrence of debt or the issuance of equity securities. The ability of our operating subsidiaries to pay dividends or to make other payments or advances to us depends on their individual operating results and any statutory, regulatory or contractual restrictions to which they may be or may become subject and in some cases our receipt of such payments or advances may be limited due to tax considerations or the presence of noncontrolling interests. Most of our operating subsidiaries are subject to credit agreements or indentures that restrict sales of assets and prohibit or limit the payment of dividends or the making of distributions, loans or advances to shareholders and partners, including us. In addition, because these subsidiaries are separate and distinct legal entities they have no obligation to provide us funds for payment obligations, whether by dividends, distributions, loans or other payments.

We are exposed to the risk of default by the counterparties to our derivative and other financial instruments, undrawn debt facilities and cash investments. Although we seek to manage the credit risks associated with our derivative and other financial instruments, cash investments and undrawn debt facilities, we are exposed to the risk that our counterparties will default on their obligations to us. While we regularly review our credit exposures and currently have no specific concerns about the creditworthiness of any counterparty for which we have material credit risk exposures, we cannot rule out the possibility that one or more of our counterparties could fail or otherwise be unable to meet its obligations to us. Any such instance of default or failure could have an adverse effect on our cash flows, results of operations, financial condition and/or liquidity. In this regard, (i) we may incur losses to the extent that we are unable to recover debts owed to us, including cash deposited and the value of financial losses, (ii) we may incur significant costs to recover amounts owed to us, and such recovery may take a long period of time or may not be possible at all, (iii) our derivative liabilities may be accelerated by the default of our counterparty, (iv) we may be exposed to financial risks as a result of the termination of affected derivative contracts, and it may be costly or impossible to replace such contracts or otherwise mitigate such risks, (v) amounts available under committed credit facilities may be reduced and (vi) disruption to the credit markets could adversely impact our ability to access debt financing on favorable terms, or at all.

At December 31, 2018, our exposure to counterparty credit risk included (i) derivative assets with an aggregate fair value of $617.3 million, (ii) cash and cash equivalent and restricted cash balances of $1,498.3 million and (iii) aggregate undrawn debt facilities of $2,503.8 million. For additional information on our derivative contracts, see note 9 to the Consolidated Financial Statements.

Our interest in the VodafoneZiggo JV is held pursuant to a Shareholders Agreement that contains provisions relating to governance as well as transfer and exit rights, which, depending on the circumstances, may not be in the best interest of our company. Our non-controlling interest in the VodafoneZiggo JV is held pursuant to a shareholders' agreement (the **Shareholders Agreement**), which provides the terms of the governance of the VodafoneZiggo JV, including among others, decision-making process, information access, dividend policy and non-compete provisions. These provisions may prevent the VodafoneZiggo JV from making decisions or taking actions that would protect or advance the interests of our company, and could even result in the VodafoneZiggo JV making decisions or taking actions that adversely impact our company. Further, our ability to access the cash of the VodafoneZiggo JV pursuant to the dividend policy contained in the Shareholders Agreement may be restricted in certain circumstances. The Shareholders Agreement also provides for restrictions on the transfer of interests in the VodafoneZiggo JV, which could adversely affect our ability to sell our interest in the VodafoneZiggo JV and/or the prices at which our interest may be sold, as well as certain exit arrangements, which could force us to sell our interest. For additional information on the VodafoneZiggo JV and the Shareholders Agreement, see note 8 to the Consolidated Financial Statements.

We may not report net profit. We reported net losses from continuing operations of $1,476.5 million and $2,371.1 million during 2018 and 2017, respectively. In light of our historical financial performance, we cannot assure you that we will report net profit in the near future.

Other Factors

We have not historically paid any cash dividends, and we may not pay dividends equally or at all on any class of our ordinary shares. We do not presently intend to pay cash dividends on any class of our ordinary shares for the foreseeable future. However, we have the right to pay dividends, effect securities distributions or make bonus issues on Liberty Global Shares. In addition, any dividends or distributions on, or repurchases of Liberty Global Shares will reduce our "distributable reserves" (defined as our accumulated, realized profits less accumulated, realized losses, as measured for U.K. statutory purposes) legally available to be paid as dividends by our company under English law on any of our ordinary shares.

Our share price may change significantly, and you may not be able to resell our ordinary shares at or above the price you paid or at all, and you could lose all or part of your investment as a result. In addition to the factors discussed in this Annual Report, the trading price of each class of our ordinary shares may fluctuate significantly in response to numerous factors, many of which are beyond our control, including:

- actual or anticipated fluctuations in our revenue and other operating results;
- actual operating or financial results that vary from our guidance or the expectations of securities analysts and investors;
- changes in expectations as to our future financial performance, including financial estimates by securities analysts and investors;
- actual or anticipated future sales of our ordinary shares by us, our senior management or our other existing shareholders?
- investor sentiment with respect to our competitors, our business partners, and our industry in general?
- announcements by us or our competitors of significant services or features, technical innovations, acquisitions, strategic partnerships, joint ventures, or capital commitments?
- changes in operating performance and stock market valuations of companies in our industry, including our competitors?
- price and volume fluctuations in the overall stock market, including as a result of trends in the economy as a whole?
- media coverage of our business and financial performance? and
- general domestic and international economic and political conditions.

The stock market has recently experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. In particular, price and volume fluctuations in the stock market as a whole may affect the market price of our ordinary shares in ways that may be unrelated or disproportionate to our operating performance. These broad market and industry fluctuations may adversely affect the trading price of our ordinary shares, regardless of our actual operating performance.

Securities class action litigation has often been instituted against companies following periods of volatility in the overall market and in the market price of a company's securities. Such litigation, if instituted against us, could result in substantial costs, divert our management's attention and resources and have an adverse effect on our business, results of operations and financial condition.

The loss of certain key personnel could harm our business. We have experienced employees at both the corporate and operational levels who possess substantial knowledge of our business and operations. We cannot assure you that we will be successful in retaining their services or that we would be successful in hiring and training suitable replacements without undue costs or delays. As a result, the loss of any of these key employees could cause significant disruptions in our business operations, which could materially adversely affect our results of operations.

John C. Malone has significant voting power with respect to corporate matters considered by our shareholders. John C. Malone beneficially owns outstanding ordinary shares of Liberty Global representing 29.3% of our aggregate voting power as of February 13, 2019. By virtue of Mr. Malone's voting power in our company, as well as his position as Chairman of our board of directors, Mr. Malone may have significant influence over the outcome of any corporate transaction or other matters submitted to our shareholders for approval. For example, under English law and our articles of association, certain matters (including amendments to the articles of association) require the approval of 75% of the shareholders who vote (in person or by proxy) on the relevant resolution, and other certain corporate transactions or matters may require the approval of at least 75% of the outstanding shares of each class of our ordinary shares. Because Mr. Malone beneficially owns approximately 29.3% of our aggregate voting power and more than 75% of the outstanding Class B ordinary shares of Liberty Global, he has the ability to prevent the requisite approval threshold from being met even though the other shareholders may determine that such action or transaction is beneficial for the company. Mr. Malone's rights to vote or dispose of his equity interests in our company are not subject to any restrictions in favor of us other than as may be required by applicable law and except for customary transfer restrictions pursuant to equity award agreements.

It may be difficult for a third-party to acquire us, even if doing so may be beneficial to our shareholders. Certain provisions of our articles of association and of English law may discourage, delay, or prevent a change in control of our company that a shareholder may consider favorable. These provisions include the following:

- authorizing a capital structure with multiple classes of ordinary shares; a Class B that entitles the holders to 10 votes per share; a Class A that entitles the holders to one vote per share; and a Class C that, except as otherwise required by applicable law, entitles the holders to no voting rights;
- authorizing the issuance of "blank check" shares (both ordinary and preference), which could be issued by our board of directors to increase the number of outstanding shares and thwart a takeover attempt;
- classifying our board of directors with staggered three-year terms, which may lengthen the time required to gain control of our board of directors, although under English law, shareholders of our company can remove a director without cause by ordinary resolution;
- prohibiting shareholder action by written resolution, thereby requiring all shareholder actions to be taken at a meeting of the shareholders;
- requiring the approval of 75% in value of the shareholders (or class of shareholders) and/or English court approval for certain statutory mergers or schemes of arrangements; and
- establishing advance notice requirements for nominations of candidates for election to our board of directors or for proposing matters that can be acted upon by shareholders at shareholder meetings.

Change in control provisions in our incentive plans and related award agreements or in executive employment agreements may also discourage, delay, or prevent a change in control of our company, even if such change of control would be in the best interests of our shareholders.

The enforcement of civil liabilities against us may be more difficult. Because we are a public limited company incorporated under the laws of England and Wales, investors could experience more difficulty enforcing judgments obtained against us in U.S. courts than would currently be the case for U.S. judgments obtained against a U.S. company. It may also be more difficult (or impossible) to bring some types of claims against us in courts sitting in England than it would be to bring similar claims against a U.S. company in a U.S. court. In particular, English law significantly limits the circumstances under which shareholders of English companies may bring derivative actions. Under English law generally, only the company can be the proper plaintiff in proceedings in respect of wrongful acts committed against us. Our articles of association provide for the exclusive jurisdiction of the English courts for shareholder lawsuits against us or our directors.

The Group Strategic Report was approved by our board of directors and was signed on its behalf on April 25, 2019 by:

/s/ Bryan H. Hall

Bryan H. Hall

Executive Vice President, General Counsel and Secretary

Company registered number: **8379990**

Political Donations

We did not make any political contributions during 2018. Our code of business conduct prohibits the use of company funds and assets for political contributions to political parties, political party officials and candidates for office, unless approved by our general counsel. Additionally, our charitable giving programs available to employees prohibit political contributions by our company.

Dividends

We have not paid any cash dividends on our ordinary shares, and we have no present intention of so doing. Payment of cash dividends, if any, in the future will be determined by our board of directors in light of our earnings, financial condition and other relevant considerations, including applicable laws in England and Wales. Except as noted below, there are currently no contractual restrictions on our ability to pay dividends in cash or shares. The credit facilities to which certain of our subsidiaries are parties restrict our ability to access their cash for, among other things, our payment of cash dividends.

Share Repurchases

The following table provides details of our share repurchases:

	Class A ordinary shares		Class C ordinary shares		
	Shares repurchased	Average price paid per share (a)	Shares repurchased	Average price paid per share (a)	Total cost (a)
					in millions
Liberty Global Shares:					
2018	15,649,900	$ 29.67	54,211,059	$ 28.51	$ 2,010.0
2017	34,881,510	$ 33.73	52,523,651	$ 32.71	$ 2,894.7
LiLAC Shares:					
2017	2,062,233	$ 22.84	285,572	$ 22.25	$ 53.5

(a) Includes direct acquisition costs and the effects of derivative instruments.

Payment to Creditors - Policy and Practice

We follow the requirements of our vendors for payment, which normally requires payment within 30 to 90 days. We also owe amounts pursuant to interest-bearing vendor financing arrangements that are generally due within one year.

Corporate Responsibility

The internet is one of the most powerful tools ever invented but it's what you do with it that counts. That's why we are focused on the positive potential of connectivity, digital entertainment and technology. It's where we invest, innovate and help to empower people to make the most of the digital revolution.

Our goal will always be to take people further, supporting and inspiring digital imagination by encouraging everyone to be more informed and more ambitious. We equip people with the digital skills needed for the future. We support and invest in original thinkers with their bright new business ideas. We also champion the power of digital technology to bring people together to find collective solutions to the most pressing challenges that impact society.

Connectivity is essential for today's economies, communities and people's everyday lives. This creates an important responsibility to make sure that digital technology works in everyone's best interests. It is our responsibility to deliver outstanding service, protect children while online and watching TV and protect our customers' privacy, as well as to ensure that as the bandwidth we provide grows that our impact on the planet does not.

Everything we do is underpinned by our belief in the liberating potential of technology. We will use it to help people be at their best, to be a business that everyone can trust, to fuel imagination and to empower all of us to realize our full potential.

Our Approach

Our Corporate Responsibility (**CR**) approach is focused on addressing the most significant impacts of our business as they affect our stakeholders and society in general, as well as our business strategy and the feedback we receive from our stakeholders. We believe this approach provides an opportunity for us to strengthen our company and positively contribute to advancing the communities in which we operate.

In 2014, we conducted a detailed analysis of our most significant (material) impacts, engaging with a wide range of stakeholders including industry peers, media, investors, sustainability experts, employees and customers, and consultation with senior management. In 2017, we re-assessed this set of issues to ensure our strategic direction continues to reflect the changing interests and expectations of our business leaders and stakeholders. We intend to do further re-assessments every few years to ensure we stay aligned with our stakeholders on material issues to the business.

To do this, we conducted an analysis of factors that affect our material impacts including:

- The material priorities generated through engagement with local stakeholders by our operating companies: Virgin Media, Unitymedia and Telenet;
- General and sector priorities defined by sustainability frameworks such as the Global Reporting Initiative (**GRI**) and the Sustainability Accounting Standards Board (**SASB**);
- Reputational impacts across the European markets where Liberty Global is active;
- A review of leading telecommunications companies and the issues they present as material for their businesses and their associated social impacts; and
- Employee feedback collected as part of a survey on CR and employee priorities.

This analysis confirmed that the six material topics originally identified continue to be the most relevant for our business, our industry and our stakeholders. These are:

- Protection of privacy and data security;
- Improving energy efficiency;
- Protection of children while online and watching TV;
- Digital inclusion and education;
- Electronic waste reduction; and
- Reducing greenhouse gas (**GHG**) emissions.

In addition, two topics were identified as equally important:

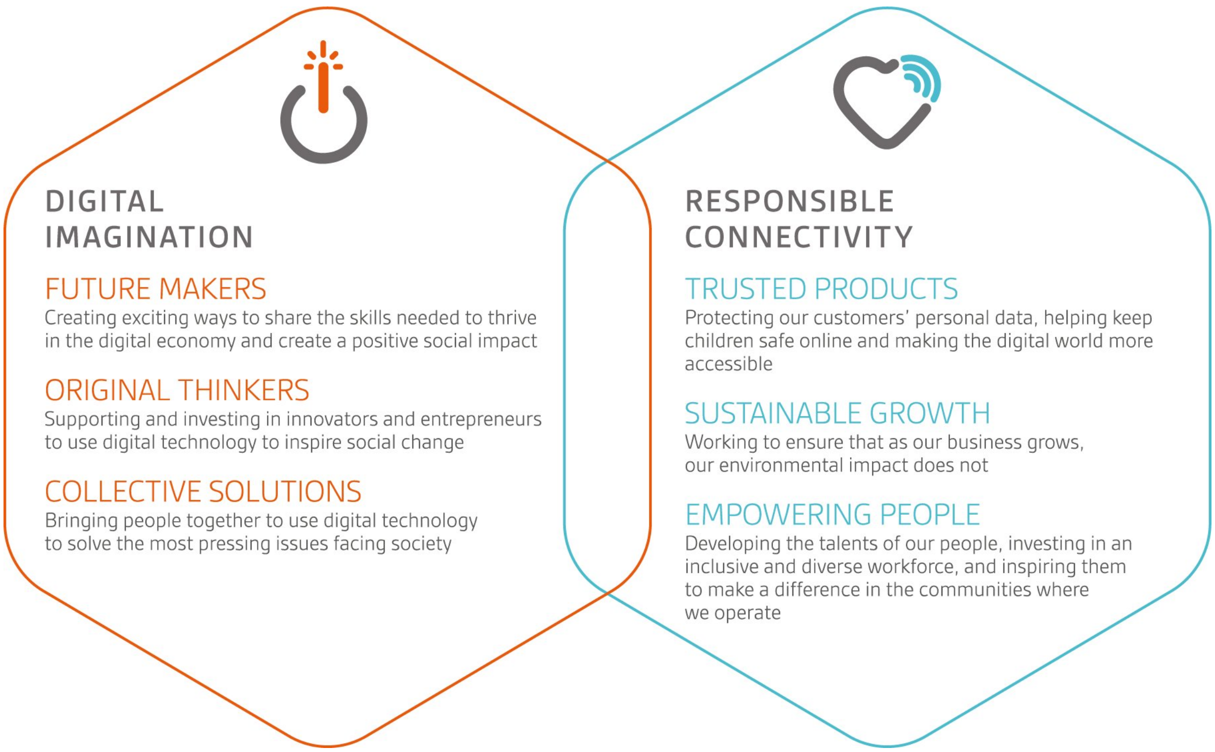
- Customer experience and service quality; and
- Employee engagement and equality.

These material issues have been grouped into two key pillars, as laid out in our CR Framework:

- Digital imagination; and
- Responsible connectivity.

Further details are available at *www.libertyglobal.com/responsibility/reporting-and-performance.*

Our Corporate Responsibility Framework



Community Investments

We measure the impact of our community investment programs using the globally recognized London Benchmarking Group model. This methodology records the inputs, outputs and positive community impacts of our investments in cash, time and in-kind contributions.

During 2018, our total community contribution was $6.7 million, of which $5.3 million was in the form of cash donations. These figures cover our corporate organization and all of our operations across Europe.

Sustainable Growth

We are working to ensure that as our business grows, our environmental impact does not. Our biggest source of carbon emissions is the energy that powers our networks; therefore, we are focused on deploying solutions that drive down energy use, from our data centers to the equipment in our customers' homes. At the same time, we are adding solar capabilities across our markets and procuring renewable energy in order to reduce our carbon emissions.

Our global environmental statement, published in 2014 and revisited in 2018, sets out our commitment to enhancing the energy efficiency of our operations, with a focus on energy use, carbon emissions and the management of electronic waste. Our corporate goal is to improve energy efficiency by 15% every year through 2020 using our 2012 emissions as our base year.

Meanwhile, we have committed to Science Based Targets to enable us drive efficiencies through to 2030 and beyond. During 2018, our energy consumption remained relatively flat, falling by 1% compared to 2017. Our total location-based carbon emissions (scope 1, 2 & 3) fell by 8%, and we decreased our total market-based carbon emissions (scope 1, 2 & 3) by 36%, which takes into account the GHG intensity of the electricity we source. We also improved our overall energy efficiency by 27% during 2018.

Further details on Liberty Global's environmental statement and performance are available at *www.libertyglobal.com/responsibility/reporting-and-performance.*

Energy Consumption

	Gigawatt-hours				
	Year ended December 31,				
	2018	2017	2016	2015	2012 (base year)
Non-renewable fuel					
Diesel	117.73	115.55	115.29	115.47	60.01
Petrol	12.13	11.95	12.69	16.66	19.68
Natural Gas	34.94	38.00	36.29	38.74	47.49
Aviation Fuel	0.03	0.04	0.01	0.01	0.05
Gas Oil	1.60	1.59	1.84	2.06	2.52
Fuel Oil	0.37	0.31	0.41	0.44	2.67
Burning Oil	6.09	9.47	11.07	11.10	12.70
CNG	0.01	0.01	—	—	—
Total	172.90	176.92	177.60	184.48	145.12
Electricity, heating & cooling					
Electricity	1,051.94	1,065.49	1,054.87	1,034.44	990.52
Heating & cooling	4.10	3.38	2.12	2.29	—
Electricity sold	(0.01)	(0.01)	(0.01)	(0.01)	(0.05)
Total energy consumption (a)	1,228.93 *	1,245.78	1,234.58	1,221.20	1,135.59

(a) Represents the total energy consumption from non-renewable fuel and electricity, heating and cooling, minus electricity sold.

(*) Within KPMG's independent limited assurance scope. Please see below for further information.

GHG Emissions

In line with the GHG Protocol, our GHG emissions are calculated in carbon dioxide equivalent (**CO2e**) using the most relevant emission conversion factors according to the countries in which we operate. CO2e is a universal measure that allows the global warming potential of different GHGs to be compared.

	Metric tons of CO2e				
	2018	2017	2016	2015	2012 (base year)
Scope 1 (Direct)	60,200 *	59,200	55,100	54,600	68,300
Scope 2 market-based (Indirect)	137,400 *	283,800	386,900	418,000	435,900
Scope 2 location-based (Indirect)	311,100 *	351,000	379,400	351,400	418,000
Total Scope 1 & 2 market-based emissions	197,700	342,900	442,000	472,600	504,300
Total Scope 1 & 2 location-based emissions	371,300	410,100	434,600	406,000	486,400
Total market-based emissions per terabyte (**TB**) of data usage (a)	0.006 *	0.013	0.028	0.040	0.142
Scope 3 emissions (Indirect) (b)	61,300 *	59,900	59,700	57,800	16,600
Total Scope 1, 2 & 3 market-based emissions	258,900	402,900	501,700	530,400	520,800
Total Scope 1, 2 & 3 location-based emissions	432,600	470,100	494,200	463,800	502,900
Carbon credits	(8,600)	(8,500)	(8,600)	(12,300)	—

(a) In order to provide a meaningful target to measure our energy usage against our business operations, we measure our Scope 1 and 2 market-based GHG emissions per terabyte of data traffic generated as we run our networks and our customers use our services. This calculation reflects internet protocol (**IP**) based data traffic from fixed broadband services, such as web browsing, IP streaming voice and video services, from all of our market operations that we can reliably measure. In 2018, approximately 55% of our total revenue was IP based. For more information, please see our full 'Environmental Reporting Criteria' at *www.libertyglobal.com/responsibility/reporting-and-performance.*

(b) Our Scope 3 indirect emissions include business air and land travel (including the use of employee-owned vehicles for business purposes, flights taken by employees, travel in rental cars, taxis and public transportation); emissions arising from water consumption, waste management (which includes the impact of recycling customer premises equipment) and travel by our third-party logistics, service and installation vehicles. Beginning in 2014, we broadened our Scope 3 emissions reporting to include travel by third-party logistics, service and installation vehicles. This data was excluded in our 2013 and 2012 reporting. Beginning in 2017, we included emissions from travel by third-party 'network expansion' vehicles at Virgin Media in the U.K. This data has not been reported for our other operations.

(*) Within KPMG's independent limited assurance scope. Please see below for further information.

Environmental reporting criteria

All data in this annual report covers the period January 1 to December 31, 2018, unless otherwise stated. For comparative purposes, and to create new base-year values for our environmental targets, we have made adjustments to our environmental results for 2012 to include representative pre-acquisition values for Virgin Media (U.K.), which we acquired on June 7, 2013, for BASE in Belgium for 2012 through 2015, which we acquired in February 2016, and for SFR BeLux for 2012 through 2016, which we acquired on June 19, 2017. We have excluded VodafoneZiggo Holding in the Netherlands from our reporting due to the formation of the VodafoneZiggo JV Transaction with Vodafone in 2016.

Liberty Global's reported environmental data follows the World Resources Institute and World Business Council on Sustainable Development's GHG Protocol Corporate Standard using the operational control approach. This covers our European operations under the consumer brands Virgin Media, Unitymedia, Telenet and UPC. We have reported 100% of the emissions from Telenet, in which we had an ownership interest of 59.7%, as of December 31, 2018. Emissions from businesses in which we have non-controlling equity stakes are not included within our reported figures.

Acquisition and disposals

Our policy is to include any new subsidiaries that have been acquired in the first six months of the reporting period.

In terms of disposals, our policy is to exclude any subsidiaries where we no longer have operational control during the reporting period. During 2018, we sold our operations in Austria and, accordingly, such operations are excluded from our 2018 reporting. During 2017, we completed the Split-off Transaction, which included C&W, VTR and Liberty Puerto Rico. Therefore, we have excluded these operations from our 2017 reporting.

In terms of our presentation of Virgin Media, BASE and SFR BeLux, please see the comparative performance information above.

For more information, please see our full 'Environmental Reporting Criteria' at *https://www.libertyglobal.com/responsibility/reporting-and-performance.*

External assurance

We engaged KPMG LLP to undertake independent limited assurance, reporting to Liberty Global, using the assurance standards ISAE 3000 and ISAE 3410, for the selected energy consumption and GHG emissions that have been highlighted above with an *. KPMG's full statement is available on our website at *www.libertyglobal.com/responsibility/reporting-and-performance.* KPMG LLP has provided an unqualified opinion over this selected data.

The level of assurance provided for a limited assurance engagement is substantially lower than a reasonable assurance engagement. In order to reach their opinion, KPMG performed a range of procedures, which included interviews with management, examination of reporting systems, site visits to three of our operating companies, as well as specific data testing at our corporate offices. A summary of the work that they performed is included within their assurance opinion. Non-financial performance information, GHG quantification in particular, is subject to more inherent limitations than financial information. It is important to read the GHG emissions information in the context of the full KPMG LLP limited assurance statement and our reporting criteria as set out in our 'Environmental Reporting Criteria' available at *www.libertyglobal.com/responsibility/reporting-and-performance.*

Qualifying Indemnity Provisions

Under our articles of association, subject to the provisions of the Companies Act, we may, broadly, (i) indemnify to any extent any person who is or was a director, or a director of any associated company, directly or indirectly against any liability incurred by him or her whether in connection with negligence, default, breach of duty or breach of trust or otherwise by him or her in relation to Liberty Global or any associated company, or in connection with that company's activities as a trustee of an occupational pension scheme and (ii) purchase and maintain insurance for any person who is or was a director, or a director of an associated company, against any loss or liability or any expenditure he or she may incur, whether in connection with any proven or alleged negligence, default, breach of duty or breach of trust by him or her, in relation to Liberty Global or any associated company.

We enter into deeds of indemnity with directors, executive officers and certain other officers and employees (including directors, officers and employees of subsidiaries and other affiliates). These deeds of indemnity require that we indemnify such persons, to the fullest extent permitted by applicable law, against all losses suffered or incurred by them in the event that they are a party to or involved in any claim arising in connection with their appointment as director, officer, employee, agent or fiduciary of Liberty Global or another corporation at the request of Liberty Global.

Employees

The details of our full-time equivalent directors, senior managers and employees by gender as of December 31, 2018, are as follows:

Director (a):	
Male	10
Female	1
	11
Senior manager (a):	
Male	4
Employee (a):	
Male	17,700
Female	8,900
	26,600

____

(a) Employees are included in each category, if applicable. Our senior manager group is comprised of our chief executive officer and our executive vice presidents.

Our employees' development, motivation, health and wellbeing are critical to our business. We aim to create a dynamic, talented workforce that reflects our diverse customers and a culture of innovation in which our 26,600 employees can grow and feel supported. At the heart of this commitment to our employees is 'The People Agenda,' Liberty Global's multi-year people strategy. The People Agenda sets forth our vision for developing and investing in our people across four key areas: Talent, Leadership, Reward and Culture. The People Agenda ensures our employees are supported in their careers, have the tools to work and develop and are engaged in our business, because engaged employees deliver superior business performance. Through the activities of The People Agenda, we aim to provide all our employees with the skills, opportunities, rewards and support they need to reach their full potential at all levels of the organization.

We have a range of employee development programs and provide graduate training and ongoing personal development programs, reflecting our commitment to employee development as a top priority. At Liberty Global, we encourage an inspiring and supportive culture that enables our employees to give their best. We strive to ensure that all of our employees are engaged, informed and aligned with our corporate development goals by communicating often with all employees through email, newsletters and employee meetings.

We give full and fair consideration to all applications for employment, including those from persons with disabilities where the requirements of the job can be adequately fulfilled by a person with disabilities. Where existing employees become disabled, to the extent practicable, we provide continuing employment under normal terms and conditions and provide training and career development and promotion as appropriate.

Directors of the Company during 2018

The following persons were directors of Liberty Global during the year ended December 31, 2018 and up to the date of issuance of this annual report. There we no changes in the directors' interests during 2018.

John C. Malone (Chairman)
Michael T. Fries (Vice Chairman)
Andrew J. Cole
Miranda Curtis
John W. Dick
Paul A. Gould
Richard R. Green
David E. Rapley
Larry E. Romrell
JC Sparkman
J. David Wargo

Directors' Remuneration Report

Details of the directors' compensation (remuneration) and their interests in the shares of Liberty Global are set out in the Directors' Remuneration Report and sections of the 2019 proxy statement (including the Compensation Discussion and Analysis section). For additional information, see *Table of Contents*.

Disclosure of Information to Auditors

The directors who held office at the date of approval of this directors' report confirm that, so far as they are each aware, there is no relevant audit information of which Liberty Global's auditors are unaware; and each director has taken all the steps that they ought to have taken as a director to make themselves aware of any relevant audit information and to establish that Liberty Global's auditors are aware of that information.

Re-Appointment of the Auditors

In accordance with Section 489 of the Companies Act, a resolution for the re-appointment of KPMG LLP (U.K.) as statutory auditors of the company has been proposed at the forthcoming annual general meeting.

The Group Directors' Report was approved by our board of directors and was signed on its behalf on April 25, 2019 by:

/s/ Bryan H. Hall

Bryan H. Hall

Executive Vice President, General Counsel and Secretary

Company registered number: **8379990**

CONSOLIDATED FINANCIAL STATEMENTS

STATEMENT OF DIRECTORS' RESPONSIBILITIES IN RESPECT OF THE 2018 U.K. COMPANIES ACT ANNUAL REPORT

The directors are responsible for preparing the Group Strategic Report, the Group Directors' Report and the group and parent company financial statements in accordance with applicable law and regulations.

Company law requires the directors to prepare group and parent company financial statements for each financial year. Under that law they are required to prepare the group financial statements in accordance with International Financial Reporting Standards as adopted by the European Union (E.U.-IFRS) and applicable law and have elected to prepare the parent company financial statements in accordance with U.K. accounting standards and applicable law (U.K. Generally Accepted Accounting Practice), including FRS 101, *Reduced Disclosure Framework*.

Under company law, the directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the group and parent company and of their profit or loss for that period. In preparing each of the group and parent company financial statements, the directors are required to:

- select suitable accounting policies and then apply them consistently;
- make judgments and estimates that are reasonable, relevant, reliable and prudent;
- for the group financial statements, state whether they have been prepared in accordance with E.U.-IFRS;
- for the parent company financial statements, state whether applicable U.K. accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements;
- assess the group and parent company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern; and
- use the going concern basis of accounting unless they either intend to liquidate the group or the parent company or to cease operations, or have no realistic alternative but to do so.

The directors are responsible for keeping adequate accounting records that are sufficient to show and explain the parent company's transactions and disclose with reasonable accuracy at any time the financial position of the parent company and enable them to ensure that its financial statements comply with the Companies Act 2006. They are responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error, and have general responsibility for taking such steps as are reasonably open to them to safeguard the assets of the group and to prevent and detect fraud and other irregularities.

Under applicable law and regulations, the directors are also responsible for preparing a Group Strategic Report and a Group Directors' Report that complies with that law and those regulations.

The directors are responsible for the maintenance and integrity of the corporate and financial information included on the company's website. Legislation in the U.K. governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

INDEPENDENT AUDITOR'S REPORT TO THE SHAREHOLDERS OF LIBERTY GLOBAL PLC

1 Our opinion is unmodified

We have audited the financial statements of Liberty Global plc ("the Company") for the year ended December 31, 2018 which comprise the consolidated statement of financial position, consolidated statement of profit or loss, consolidated statement of comprehensive earnings, consolidated statement of equity, consolidated statement of cash flows, parent company statement of financial position, parent company statement of equity and the related notes, including the accounting policies in note 3 in the consolidated financial statements and note 2 in the parent company financial statements.

In our opinion:

- the financial statements give a true and fair view of the state of the Group's and of the parent Company's affairs as at December 31, 2018 and of the Group's profit for the year then ended;
- the group financial statements have been properly prepared in accordance with International Financial Reporting Standards as adopted by the European Union (IFRS adopted by the EU);
- the parent Company financial statements have been properly prepared in accordance with UK accounting standards, including FRS 101 *Reduced Disclosure Framework*; and
- the financial statements have been prepared in accordance with the requirements of the Companies Act 2006 and, as regards the Group financial statements, Article 4 of the IAS Regulation.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)") and applicable law. Our responsibilities are described below. We have fulfilled our ethical responsibilities under, and are independent of the Group in accordance with, UK ethical requirements including the FRC Ethical Standard as applied to listed entities. We believe that the audit evidence we have obtained is a sufficient and appropriate basis for our opinion.

2 Key audit matters: our assessment of risks of material misstatement

Key audit matters are those matters that, in our professional judgment, were of most significance in the audit of the financial statements and include the most significant assessed risks of material misstatement (whether or not due to fraud) identified by us, including those which had the greatest effect on: the overall audit strategy; the allocation of resources in the audit; and directing the efforts of the engagement team. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. In arriving at our audit opinion above, the key audit matters, in decreasing order of audit significance, were as follows (unchanged from 2017):

Group: Capitalization of costs associated with construction and installation activities

Refer to page 82 (accounting policy)

The risk - Accounting treatment:

Capitalization of both internal and external costs incurred (part of which is included in Property and equipment, net of $12,294.6m (2017: $17,403.4 m)) associated with the capital projects undertaken by the group involve estimation of the amount of time and costs that should be capitalised. The most significant risk is that the group may inappropriately capitalize construction and installation costs. The key risks in determining if construction and installation costs qualify for recognition as an asset, include whether the costs are directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by the group; it is probable that future economic benefits associated with the item will flow to the group, and if the cost can be measured reliably.

Our response

Our procedures included:

Control operations - We evaluated the design, implementation and tested operating effectiveness of key internal controls in place used for identifying which construction and installation costs should be capitalized.

Personnel interviews - We challenged the amount of internal costs capitalized during the year by comparing to budgets, interviewing department heads to determine the level of time individuals have spent on capital items, and analysed the changes to significant estimates utilized by the group to determine the amount of internal costs to be capitalized (if any), and other changes in the business with a potential impact on cost capitalization during the year.

Tests of details - For both internal and external costs capitalised we selected a sample of PP&E additions on costs capitalized and assessed the nature of the costs thereby assessing the appropriateness of the group's cost capitalization conclusions.

Group: Recognition and measurement of uncertain tax positions
($857.8 million; 2017 $528.5 million)

Refer to page 83 (accounting policy) and page 118 (financial disclosures)

The risk - Dispute outcome:

The Group operates in a multiple international jurisdictions with complex tax environments subject to varied interpretations and has a number of uncertain tax positions. The tax matters are at various stages, from preliminary discussions with tax authorities through to tax tribunal or court proceedings where the matters can take many years to resolve. Tax provisioning for uncertain tax positions is judgmental and requires estimates to be made in relation to existing and potential tax matters. The group uses facts-based judgments in determining tax reserves for uncertain tax positions.

Our response

Our procedures included:

Control operations - We evaluated the design, implementation and tested operating effectiveness of key internal controls in place within the income tax process for controls related to the determination of provisions for uncertain tax positions.

Tests of details - We performed substantive procedures, including testing calculations and underlying supporting data for uncertain tax positions.

Our tax expertise - We utilized our international and local tax specialists to assist with the evaluation and challenge of the group's tax calculations and tax provisions. We also utilized our tax specialists' knowledge of local tax rulings and current tax audits for similar situations in jurisdictions in which the group operates.

Assessing transparency - We assessed the adequacy of the group's disclosures in respect of tax and uncertain tax positions.

Group: Deferred tax assets
($2,984.7 million; 2017 $5,103.5 million)

Refer to page 83 (accounting policy) and page 117 (financial disclosures)

The risk - Forecast-based valuation:

The group has significant deferred tax assets recognised in respect of tax losses. There is inherent uncertainty involved in forecasting future taxable profits, which determines the extent to which deferred tax assets are or are not recognised.

Our response

Our procedures included:

Control operations - We evaluated the design, implementation and tested operating effectiveness of key internal controls in place within the income tax process relating to the recognition of deferred tax assets.

Our experience: - We evaluated assumptions used in determining deferred tax asset balances, particularly those relating to the group's forecasts of future taxable profits.

Sensitivity analysis: We considered reasonably possible changes in assumptions including forecast profit and their impact on the outcome of the deferred tax assets.

Assessing transparency - We assessed the adequacy of the group's disclosures about the sensitivity of the recognition of deferred tax assets to changes in key assumptions reflected in the inherent risk.

Group: Derivative instruments
Assets: ($ 2,496.7m; 2017 $ 2,309.0 m)
Liabilities: ($ 1,370 m; 2017 $ 2,118.8 m)

Refer to page 82 (accounting policy) and page 104 (financial disclosures)

The risk - Subjective Valuation:

The fair value of the group's derivative instruments is determined through a variety of valuation techniques within the treasury process including cash flow valuation models and binomial option pricing models which requires the exercise of judgment.

Our response

Our procedures included:

Control operations - We evaluated the design, implementation and tested operating effectiveness of key internal controls within the treasury process, including controls over data input to valuation models, reconciliations between internal valuations and external (i.e., third-party) valuations and review of final valuation adjustments recorded.

Our valuation expertise - We utilized our own valuation specialists to independently calculate the fair value of a sample of the derivatives and investigated differences outside our expected acceptable range in the context of our materiality.

Assessing transparency - We assessed whether the disclosures appropriately disclose fair value considerations and inherent uncertainties related to the group's derivative instruments.

Parent Company: Recoverability of the Company's investments in subsidiaries
($43,161.8 million; 2017 $40,376.7 million)

Refer to page 174 (accounting policy) and page 175 (financial disclosures)

The risk - low risk/high value:

The carrying amount of the Company's investments in subsidiaries ($43.2 billion) represents 97% of the company's total assets. The recoverability is not at a high risk of significant misstatement or subject to significant judgment. However, due to their materiality in the context of the financial statements, this is considered to be the area that had the greatest effect on our overall audit of the parent company.

Our response

Our procedures included:

Tests of detail: We compared the carrying amount of material investments with the relevant subsidiaries' balance sheet to identify whether their net assets, being an approximation of their minimum recoverable amount, were in excess of their carrying amount and assessing whether those subsidiaries have historically been profit-making.

Assessing subsidiary audits: We assessed the work performed by the subsidiary audit teams of those subsidiaries where audits are performed and considering the results of that work on those subsidiaries' profits and net assets.

3 Our application of materiality and an overview of the scope of our audit

Materiality for the group financial statements as a whole was set at $60,000,000 (2017: $70,000,000), determined with reference to a benchmark of revenue adjusted for discontinued operations of $12,343m, of which it represents 0.48% (2017: 0.47%).

Materiality for the parent Company financial statements as a whole was set at $55,000,000 (2017: $60,000,000), determined with reference to a benchmark of Company total assets, of which it represents 0.12% (2017: 0.14%).

We agreed to report to the Audit Committee any corrected or uncorrected identified misstatements exceeding $3,000,000, in addition to other identified misstatements that warranted reporting on qualitative grounds.

Of the group's 17 (2017: 19) reporting components, we subjected 5 (2017: 7) to full scope audits for group purposes and 2 (2017: 0) to specified risk-focused audit procedures.

The components within the scope of our work accounted for the following percentages of the Group:

2018 (2017)	Number of components	Group revenue	Group loss before tax	Total assets
Audits for group reporting purposes	5 (7)	80% (81%)	42% (81%)	82% (87%)
Specified risk-focused audit procedures	2 (0)	1% (0%)	33% (0%)	10% (0%)
Total	7 (7)	81% (81%)	75% (81%)	92% (87%)

The remaining 19% (2017: 19%) of total group revenue, 25% (2017: 19%) of group loss before tax and 8% (2017: 13%) of total group assets is represented by ten reporting components (2017: 12), none of which individually represented more than 5% (2017: 10%) of any of total group revenue, group profit before tax or total group assets. For these residual components, we performed analysis at an aggregated group level to re-examine our assessment that there were no significant risks of material misstatement within these.

The Group team instructed component auditors as to the significant areas to be covered, including the relevant risks detailed above and the information to be reported back. The Group team approved the component materialities, which ranged from $22m to $50m, having regard to the mix of size and risk profile of the Group across the components. The work on 6 of the 7 components (2017: 6 of the 7 components) was performed by component auditors and the rest, including the audit of the parent company, was performed by the Group team.

The Group team visited 7 (2017: 7) component locations in the United Kingdom, United States, Belgium, Germany, the Netherlands, and Switzerland (2017: United Kingdom, United States, Belgium, Germany, the Netherlands, and Switzerland) to assess the audit risk and strategy. During these visits and meetings, the findings reported to the Group team were discussed in more detail, and any further work required by the Group team was then performed by the component auditor.

4 We have nothing to report on going concern

The Directors have prepared the financial statements on the going concern basis as they do not intend to liquidate the Company or the Group or to cease their operations, and as they have concluded that the Company's and the Group's financial position means that this is realistic. They have also concluded that there are no material uncertainties that could have cast significant doubt over their ability to continue as a going concern for at least a year from the date of approval of the financial statements ("the going concern period").

Our responsibility is to conclude on the appropriateness of the Directors' conclusions and, had there been a material uncertainty related to going concern, to make reference to that in this audit report. However, as we cannot predict all future events or conditions and as subsequent events may result in outcomes that are inconsistent with judgements that were reasonable at the time they were made, the absence of reference to a material uncertainty in this auditor's report is not a guarantee that the group or the company will continue in operation.

In our evaluation of the Directors' conclusions, we considered the inherent risks to the Group's and Company's business model and analysed how those risks might affect the Group's and Company's financial resources or ability to continue operations over the going concern period. In our evaluation of the Directors' conclusions, we considered the inherent risks to the Group's and

Company's business model, including the impact of Brexit, and analysed how those risks might affect the Group's and Company's financial resources or ability to continue operations over the going concern period. We evaluated those risks and concluded that they were not significant enough to require us to perform additional audit procedures

Based on this work, we are required to report to you if we have concluded that the use of the going concern basis of accounting is inappropriate or there is an undisclosed material uncertainty that may cast significant doubt over the use of that basis for a period of at least a year from the date of approval of the financial statements.

We have nothing to report in these respects, and we did not identify going concern as a key audit matter.

5 We have nothing to report on the other information in the Annual Report

The directors are responsible for the other information presented in the Annual Report together with the financial statements. Our opinion on the financial statements does not cover the other information and, accordingly, we do not express an audit opinion or, except as explicitly stated below, any form of assurance conclusion thereon.

Our responsibility is to read the other information and, in doing so, consider whether, based on our financial statements audit work, the information therein is materially misstated or inconsistent with the financial statements or our audit knowledge. Based solely on that work we have not identified material misstatements in the other information.

Strategic report and directors' report

Based solely on our work on the other information:
- we have not identified material misstatements in the strategic report and the directors' report;
- in our opinion the information given in those reports for the financial year is consistent with the financial statements; and
- in our opinion those reports have been prepared in accordance with the Companies Act 2006.

Directors' remuneration report

In our opinion the part of the Directors' Remuneration Report to be audited has been properly prepared in accordance with the Companies Act 2006.

6 We have nothing to report on the other matters on which we are required to report by exception

Under the Companies Act 2006, we are required to report to you if, in our opinion:
- adequate accounting records have not been kept by the parent Company, or returns adequate for our audit have not been received from branches not visited by us; or
- the parent Company financial statements and the part of the Director's Remuneration Report to be audited are not in agreement with the accounting records and returns; or
- certain disclosures of directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

We have nothing to report in these respects.

7 Respective responsibilities

Directors' responsibilities

As explained more fully in their statement set out on page 62, the directors are responsible for: the preparation of the financial statements including being satisfied that they give a true and fair view; such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error; assessing the Group and parent Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern; and using the going concern basis of accounting unless they either intend to liquidate the Group or the parent Company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue our opinion in an auditor's report. Reasonable assurance is a high level of assurance, but does not guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

A fuller description of our responsibilities is provided on the FRC's website at *www.frc.org.uk/auditorsresponsibilities*.

8 The purpose of our audit work and to whom we owe our responsibilities

This report is made solely to the Company's shareholders, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the Company's shareholders those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Company and the Company's shareholders, as a body, for our audit work, for this report, or for the opinions we have formed.

/s/ TUDOR AW

Tudor Aw (Senior Statutory Auditor)
for and on behalf of KPMG LLP, Statutory Auditor
Chartered Accountants
15 Canada Square, London, United Kingdom
April 25, 2019

LIBERTY GLOBAL PLC

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

	Note References	December 31, 2018	December 31, 2017
		in millions	
ASSETS			
Property and equipment, net	7	$ 12,294.6	$ 17,403.4
Goodwill	7	13,727.1	18,561.9
Intangible assets subject to amortization, net	7	2,679.4	3,594.1
Equity-method investments	8	3,995.7	4,347.4
Other investments (including $1,145.2 million and $2,280.2 million, respectively, measured at fair value on a recurring basis)	8	1,145.2	2,311.4
Non-current assets held for sale	6	9,644.6	1,187.3
Other assets, net	7, 9, 10, 11 and 12	5,031.4	5,393.7
Total non-current assets		48,518.0	52,799.2
Current assets:			
Other current assets	10	546.8	483.6
Current assets held for sale	6	356.5	34.9
Derivative instruments	9 and 10	394.2	576.0
Trade receivables and unbilled revenue, net	10 and 12	1,342.1	1,540.4
Cash and cash equivalents	10	1,480.5	1,672.4
Total current assets		4,120.1	4,307.3
Total assets		$ 52,638.1	$ 57,106.5

The accompanying notes are an integral part of these consolidated financial statements.

LIBERTY GLOBAL PLC

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION — (Continued)

	Note References	December 31, 2018	December 31, 2017
		in millions	
EQUITY AND LIABILITIES			
Equity:			
Liberty Global shareholders:			
Share capital:			
Liberty Global Shares — Class A, $0.01 nominal value. Issued and outstanding 204,450,499 and 219,668,579 shares, respectively	13	$ 2.0	$ 2.2
Liberty Global Shares — Class B, $0.01 nominal value. Issued and outstanding 11,099,593 and 11,102,619 shares, respectively	13	0.1	0.1
Liberty Global Shares — Class C, $0.01 nominal value. Issued and outstanding 531,174,389 and 584,332,055 shares, respectively	13	5.3	5.8
Share premium reserve	13	1,121.5	1,115.4
Merger reserve	13	4,749.3	4,749.3
Other reserves	13	(941.7)	(58.6)
Retained earnings (loss)	13	(266.7)	1,024.3
Treasury shares, at cost	13	(0.1)	(0.1)
Total Liberty Global shareholders		4,669.7	6,838.4
Noncontrolling interests		(526.3)	(425.7)
Total equity		4,143.4	6,412.7
Liabilities:			
Non-current debt and finance lease obligations	10 and 15	26,190.0	37,371.1
Long-term portion of provisions	16	736.6	581.9
Non-current liabilities held for sale	6	9,498.7	77.8
Other non-current liabilities	9, 10, 11, 16 and 17	1,678.5	2,697.2
Total non-current liabilities		38,103.8	40,728.0
Current liabilities:			
Other accrued and current liabilities	9 and 19	1,574.5	1,755.3
Current liabilities held for sale	6	1,932.4	78.5
Provisions	16	219.6	146.1
Accrued income taxes	11	378.6	472.3
Accrued capital expenditures		543.2	718.9
Current portion of debt and finance lease obligations	10 and 15	4,021.2	4,647.0
Deferred revenue		847.1	1,101.1
Accounts payable	10 and 19	874.3	1,046.6
Total current liabilities		10,390.9	9,965.8
Total liabilities		48,494.7	50,693.8
Total equity and liabilities		$ 52,638.1	$ 57,106.5

The financial statements were approved by our board of directors and were signed on its behalf on April 25, 2019 by:

/s/ Michael T. Fries

Michael T. Fries
President, Chief Executive Officer and Director
Company registered number: **8379990**

The accompanying notes are an integral part of these consolidated financial statements.

LIBERTY GLOBAL PLC

CONSOLIDATED STATEMENTS OF PROFIT OR LOSS

	Note References	Year ended December 31, 2018	Year ended December 31, 2017
		in millions, except per share amounts	
Revenue	18	$ 11,955.9	$ 11,268.1
Cost of services	7, 14 and 21	8,539.2	8,161.9
General and administrative **(G&A)** expenses	7, 14, 21 and 22	1,346.7	1,257.4
Selling expenses		1,029.0	1,006.7
Impairment, restructuring and other operating items, net	5, 16 and 17	270.5	113.8
		11,185.4	10,539.8
Operating profit		770.5	728.3
Finance costs	23	(1,982.7)	(2,906.0)
Finance income	23	1,229.6	70.8
Net finance costs		(753.1)	(2,835.2)
Share of results of affiliates, net	8	19.6	(94.1)
Other income, net		14.0	11.3
		(719.5)	(2,918.0)
Profit (loss) from continuing operations before income taxes		51.0	(2,189.7)
Income tax expense	11	(1,527.5)	(181.4)
Loss from continuing operations		(1,476.5)	(2,371.1)
Profit (loss) from discontinued operations, net of taxes	6	1,158.6	(380.3)
Gain on disposal of discontinued operations, net of taxes	6	975.3	242.9
Net profit (loss)		657.4	(2,508.5)
Net profit attributable to noncontrolling interests	3 and 6	(146.5)	(43.0)
Net profit (loss) attributable to Liberty Global shareholders		$ 510.9	$ (2,551.5)
Basic and diluted loss from continuing operations attributable to Liberty Global shareholders per share	3	$ (2.10)	$ (2.86)

The accompanying notes are an integral part of these consolidated financial statements.

LIBERTY GLOBAL PLC

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

	Note References	Year ended December 31, 2018	2017
		in millions	
Net profit (loss)		$ 657.4	$ (2,508.5)
Other comprehensive income (loss), net of taxes:	24		
Continuing operations:			
Foreign currency translation adjustments		(896.9)	1,981.0
Reclassification adjustments included in net profit	6	23.5	0.8
Pension-related adjustments and other		(7.1)	16.3
Other comprehensive income (loss) from continuing operations		(880.5)	1,998.1
Other comprehensive income (loss) from discontinued operations		16.4	(80.2)
Other comprehensive income (loss)		(864.1)	1,917.9
Comprehensive loss		(206.7)	(590.6)
Comprehensive income attributable to noncontrolling interests		(145.5)	(44.7)
Comprehensive loss attributable to Liberty Global shareholders		$ (352.2)	$ (635.3)

The accompanying notes are an integral part of these consolidated financial statements.

LIBERTY GLOBAL PLC

CONSOLIDATED STATEMENTS OF EQUITY

		Liberty Global shareholders										
	Note References	Share capital	Share premium reserve	Merger reserve	Capital redemption reserve	Foreign currency translation reserve	Other reserves	Retained earnings	Treasury shares, at cost	Total Liberty Global shareholders	Non-controlling interests	Total equity
							in millions					
Balance at January 1, 2017		$ 10.6	$ 1,103.5	$ 10,083.5	$ 1.5	$ (2,099.5)	$ 3.1	$ 4,698.7	$ (0.3)	$ 13,801.1	$ 972.0	$ 14,773.1
Net loss		—	—	—	—	—	—	(2,551.5)	—	(2,551.5)	43.0	(2,508.5)
Other comprehensive income, net of taxes	6 and 24	—	—	—	—	1,951.8	(2.3)	(33.3)	—	1,916.2	1.7	1,917.9
Impact of the Split-off Transaction	5	(1.7)	—	(4,488.9)	—	86.6	(0.6)	930.3	—	(3,474.3)	(1,361.3)	(4,835.6)
Repurchase and cancellation of Liberty Global ordinary shares	13	(0.8)	—	—	0.8	—	—	(2,948.2)	—	(2,948.2)	—	(2,948.2)
Equalization payment related to the VodafoneZiggo JV Transaction (a)	6	—	—	(845.3)	—	—	—	845.3	—	—	—	—
Share-based compensation	14	—	—	—	—	—	—	176.2	—	176.2	—	176.2
Adjustments due to changes in subsidiaries' equity and other, net		—	11.9	—	—	—	—	(93.2)	0.2	(81.1)	(81.1)	(162.2)
Balance at December 31, 2017		$ 8.1	$ 1,115.4	$ 4,749.3	$ 2.3	$ (61.1)	$ 0.2	$ 1,024.3	$ (0.1)	$ 6,838.4	$ (425.7)	$ 6,412.7

(a) During 2017, in connection with the completion of the VodafoneZiggo JV Transaction, our company received an equalization payment from Vodafone of €806.8 million ($845.3 million at the applicable rates). This payment realized an element of the merger reserve related to the 2014 acquisition of the shares of Ziggo Holding B.V. that we did not already own. During 2017, we released all realized values in merger reserves, including both the $845.3 million and the $4,488.9 million related to the VodafoneZiggo JV Transaction and Split-off Transaction, respectively.

The accompanying notes are an integral part of these consolidated financial statements.

LIBERTY GLOBAL PLC

CONSOLIDATED STATEMENTS OF EQUITY — (Continued)

	Notes References	Liberty Global shareholders									Non-controlling interests	Total equity
		Share capital	Share premium reserve	Merger reserve	Capital redemption reserve	Foreign currency translation reserve	Other reserves	Retained earnings (loss)	Treasury shares, at cost	Total Liberty Global shareholders		
		in millions										
Balance at January 1, 2018, before effect of accounting change		$ 8.1	$ 1,115.4	$ 4,749.3	$ 2.3	$ (61.1)	$ 0.2	$ 1,024.3	$ (0.1)	$ 6,838.4	$ (425.7)	$ 6,412.7
Accounting change	2	—	—	—	—	—	—	320.1	—	320.1	4.4	324.5
Balance at January 1, 2018, as adjusted for accounting change		8.1	1,115.4	4,749.3	2.3	(61.1)	0.2	1,344.4	(0.1)	7,158.5	(421.3)	6,737.2
Net earnings		—	—	—	—	—	—	510.9	—	510.9	146.5	657.4
Other comprehensive loss, net of taxes	6 and 24	—	—	—	—	(883.5)	(0.3)	20.7	—	(863.1)	(1.0)	(864.1)
Repurchase and cancellation of Liberty Global ordinary shares	13	(0.7)	—	—	0.7	—	—	(2,010.0)	—	(2,010.0)	—	(2,010.0)
Distributions by subsidiaries to noncontrolling interest owners		—	—	—	—	—	—	—	—	—	(298.4)	(298.4)
Repurchases by Telenet of its outstanding shares		—	—	—	—	—	—	(294.0)	—	(294.0)	35.4	(258.6)
Share-based compensation	14	—	—	—	—	—	—	162.6	—	162.6	—	162.6
Adjustments due to changes in subsidiaries' equity and other, net		—	6.1	—	—	—	—	(1.3)	—	4.8	12.5	17.3
Balance at December 31, 2018		$ 7.4	$ 1,121.5	$ 4,749.3	$ 3.0	$ (944.6)	$ (0.1)	$ (266.7)	$ (0.1)	$ 4,669.7	$ (526.3)	$ 4,143.4

The accompanying notes are an integral part of these consolidated financial statements.

LIBERTY GLOBAL PLC

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Note References	Year ended December 31, 2018	2017
		in millions	
Cash flows from operating activities:			
Net profit (loss)		$ 657.4	$ (2,508.5)
Profit (loss) from discontinued operations	6	2,133.9	(137.4)
Loss from continuing operations		(1,476.5)	(2,371.1)
Adjustments to reconcile loss from continuing operations to net cash provided by operating activities of continuing operations:			
Share-based compensation expense	14	205.9	178.4
Depreciation and amortization	7 and 21	3,896.2	3,823.3
Impairment, restructuring and other operating items, net	5, 16 and 17	270.5	113.8
Net finance costs	23	753.1	2,835.2
Gain on VodafoneZiggo JV Transaction	6	—	(4.5)
Share of results of affiliates, net	8	(19.6)	94.1
Deferred income tax expense (benefit)	11	447.6	(10.8)
Changes in operating assets and liabilities, net of the effects of acquisitions and dispositions:			
Payables and accruals		708.1	(321.6)
Receivables and other operating assets		580.8	401.2
Dividends from affiliates and others	8	252.8	299.5
Interest paid		(1,405.7)	(1,380.6)
Interest received		66.3	77.2
Income taxes paid		(309.0)	(269.7)
Net cash provided by operating activities of continuing operations		3,970.5	3,464.4
Net cash provided by operating activities of discontinued operations		1,978.1	2,235.3
Net cash provided by operating activities		5,948.6	5,699.7
Cash flows from investing activities:			
Proceeds received upon disposition of discontinued operations, net	6	2,058.2	—
Capital expenditures	7	(1,470.7)	(1,272.3)
Investments in and loans to affiliates and others	8	(88.8)	(118.3)
Cash paid in connection with acquisitions, net of cash acquired	5	(82.5)	(413.9)
Sale of investments	8	36.2	25.5
Distributions received from affiliates	6	—	1,569.4
Equalization payment related to the VodafoneZiggo JV Transaction	6	—	845.3
Other investing activities, net		131.4	123.0
Net cash provided by investing activities of continuing operations		583.8	758.7
Net cash used by investing activities of discontinued operations, including deconsolidated cash		(514.2)	(1,910.1)
Net cash provided (used) by investing activities		$ 69.6	$ (1,151.4)

The accompanying notes are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENTS OF CASH FLOWS — (Continued)

	Note References	Year ended December 31, 2018	2017
		in millions	
Cash flows from financing activities:			
Repayments and repurchases of debt and finance lease obligations	15	$ (8,170.6)	$ (8,177.5)
Borrowings of debt	15	4,396.5	7,215.4
Repurchase of Liberty Global ordinary shares	13	(2,009.9)	(2,976.2)
Distributions by subsidiaries to noncontrolling interest owners		(290.3)	(13.0)
Repurchase by Telenet of its outstanding shares		(244.7)	(36.5)
Net cash received (paid) related to derivative instruments	9	112.8	(138.1)
Payment of financing costs and debt premiums	15	(73.1)	(249.6)
Value-added taxes (**VAT**) paid on behalf of the VodafoneZiggo JV	6	—	(162.6)
Other financing activities, net		(7.3)	33.9
Net cash used by financing activities of continuing operations		(6,286.6)	(4,504.2)
Net cash provided (used) by financing activities of discontinued operations		129.0	(145.1)
Net cash used by financing activities		(6,157.6)	(4,649.3)
Effect of exchange rate changes on cash and cash equivalents and restricted cash:			
Continuing operations		(43.2)	114.1
Discontinued operations		(1.9)	1.1
Total		(45.1)	115.2
Net increase (decrease) in cash and cash equivalents and restricted cash:			
Continuing operations		(1,775.5)	(167.0)
Discontinued operations		1,591.0	181.2
Net increase (decrease) in cash and cash equivalents and restricted cash		(184.5)	14.2
Cash and cash equivalents and restricted cash:			
Beginning of year		1,682.8	1,668.6
End of year		$ 1,498.3	$ 1,682.8

The accompanying notes are an integral part of these consolidated financial statements.

(1) Basis of Presentation

Liberty Global plc (**Liberty Global**) is a public limited company organized under the laws of England and Wales. In these notes, the terms "we," "our," "our company" and "us" may refer, as the context requires, to Liberty Global or collectively to Liberty Global and its subsidiaries. We are an international provider of video, broadband internet, fixed-line telephony and mobile communications services to residential customers and businesses in Europe.

Our continuing operations comprise businesses that provide residential and business-to-business (**B2B**) communications services in (i) the United Kingdom (**U.K.**) and Ireland through Virgin Media Inc. (**Virgin Media**), a wholly-owned subsidiary of Liberty Global, (ii) Belgium through Telenet Group Holding N.V. (**Telenet**), a 59.7%-owned subsidiary of Liberty Global, (iii) Switzerland and Poland through UPC Holding B.V. and (iv) Slovakia through UPC Broadband Slovakia s.r.o. UPC Holding B.V. and UPC Broadband Slovakia s.r.o., which are each wholly-owned subsidiaries of Liberty Global, are collectively referred to herein as "**UPC Holding**." In addition, following the December 31, 2016 completion of the VodafoneZiggo JV Transaction (as defined in note 18), we own a 50% noncontrolling interest in the VodafoneZiggo JV, which provides residential and B2B communication services in the Netherlands. During 2016, we provided residential and B2B communications services in the Netherlands through our wholly-owned subsidiary, VodafoneZiggo Holding B.V. (**VodafoneZiggo Holding**).

In addition, we currently provide (i) residential and B2B communication services in (a) Germany through Unitymedia GmbH (**Unitymedia)** and (b) Hungary, the Czech Republic and Romania through UPC Holding B.V. and (ii) direct-to-home satellite (DTH) services to residential customers in Hungary, the Czech Republic, Romania and Slovakia through a Luxembourg-based subsidiary of UPC Holding B.V. that we refer to as "UPC DTH." We also provided residential and B2B communication services in Austria through July 31, 2018, the date we completed the sale of such operations. On May 9, 2018, we reached an agreement to sell our operations in Germany, Romania, Hungary and the Czech Republic (exclusive of our DTH operations) and on December 21, 2018, we reached an agreement to sell the operations of UPC DTH. In these consolidated financial statements, our operations in Austria, Germany, Romania, Hungary and the Czech Republic and the operations of UPC DTH are presented as discontinued operations for all periods. For additional information regarding these pending and completed dispositions, see note 6. Subsequent to December 31, 2018, we entered into an agreement to sell our operations in Switzerland. For additional information, see note 28.

Prior to the December 29, 2017 completion of the Split-off Transaction (as defined and described in note 6), we also provided residential and B2B communications services in (i) various countries in Latin America and the Caribbean, through Cable & Wireless Communications Limited (**C&W**), (ii) Chile through VTR.com SpA (**VTR**) and (iii) Puerto Rico through Liberty Cablevision of Puerto Rico LLC (**Liberty Puerto Rico**). C&W and VTR were each wholly-owned subsidiaries of Liberty Global, and Liberty Puerto Rico was an entity in which we held a 60.0% ownership interest. C&W also provided (a) B2B services in certain other countries in Latin America and the Caribbean and (b) wholesale services over its sub-sea and terrestrial networks. The operations of C&W, VTR, Liberty Puerto Rico and certain other entities that were associated with our businesses in Latin America and the Caribbean are collectively referred to herein as the "**LiLAC Group**." As a result of the Split-off Transaction, the entities attributed to the LiLAC Group are presented as discontinued operations in our consolidated statements of profit or loss and cash flows for 2017 and 2016.

These consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (**IFRS**) as issued by the International Accounting Standards Board (**IASB**) and adopted by the European Union (**E.U.-IFRS**) and applied in accordance with the Companies Act 2006 (the **Companies Act**). Our significant accounting principles are summarized in note 3, which have been applied consistently throughout the periods presented in these consolidated financial statements.

These consolidated financial statements have been prepared on a historical cost basis and are presented in United States (**U.S.**) dollars, which is our functional currency. Unless otherwise indicated, the amounts presented in these notes relate only to our continuing operations, and ownership percentages and convenience translations into U.S. dollars are calculated as of December 31, 2018.

These consolidated financial statements were authorized for issue by our board of directors on April 25, 2019.

(2) Accounting Changes and Recent Pronouncements

First-time Application of Accounting Standards

The following new accounting standards and amendments to accounting standards have been initially applied:

Standard	Title	Applicable for fiscal years beginning on or after	Date of endorsement by the E.U.
IFRS 2 (amendments)	Classification and Measurement of Share-based Payment Transactions	January 1, 2018 (a)	February 26, 2018
IFRS 9	Financial Instruments	January 1, 2018 (b)	November 22, 2016
IFRS 15	Revenue from Contracts with Customers	January 1, 2018 (c)	September 22, 2016
IFRS 15 (amendments)	Clarifications to IFRS 15 Revenue from Contracts with Customers	January 1, 2018 (c)	October 31, 2017

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(a) In June 2016, the IASB issued amendments to IFRS 2, *Share-based Payment*s (**IFRS 2**), which includes new requirements for the accounting of share-based payment transactions with a net settlement feature for withholding tax obligations. The amendments to IFRS 2 require that certain transactions be classified as equity-settled share-based payment transactions. We adopted the amendments to IFRS 2 on January 1, 2018. The amendments to IFRS 2 did not have a material impact on the consolidated financial statements and related disclosures.

(b) In July 2014, the IASB issued IFRS 9, *Financial Instruments* (**IFRS 9**), which introduces a single approach for the classification and measurement of financial assets according to their cash flow characteristics and the business model they are managed in, and provides a new impairment model based on expected credit losses. IFRS 9 includes new regulations regarding the application of hedge accounting to better reflect an entity's risk management activities, especially with regard to managing non-financial risks. We adopted IFRS 9 effective January 1, 2018 on a retrospective basis. The application of IFRS 9 did not have a material impact on the consolidated financial statements and related disclosures.

(c) In May 2014, the IASB issued IFRS 15, *Revenue from Contracts with Customers* (**IFRS 15**), which requires an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of goods or services to customers. We adopted IFRS 15 effective January 1, 2018 by recording the cumulative effect of the adoption to our retained earnings. We applied the new standard to contracts that were not complete at January 1, 2018. The comparative information for the year ended December 31, 2017 contained within these consolidated financial statements and notes has not been restated and continues to be reported under the accounting standards in effect for such periods.

The most significant impacts of IFRS 15 on our revenue recognition policies relates to our accounting for (i) time-limited discounts and free service periods provided to our customers and (ii) certain upfront fees charged to our customers, as follows:

- When we enter into contracts to provide services to our customers, we often provide time-limited discounts or free service periods. Under current accounting standards, we recognize revenue net of discounts during the promotional periods and do not recognize any revenue during free service periods. Under IFRS 15, revenue recognition for those contracts that contain substantive termination penalties will be accelerated, as the impact of the discounts or free service periods will be recognized uniformly over the contractual period. For contracts that do not have substantive termination penalties, we will continue to record the impacts of partial or full discounts during the applicable promotional periods.

- When we enter into contracts to provide services to our customers, we often charge installation or other upfront fees. Under previous accounting rules, installation fees related to services provided over our cable networks were recognized as revenue during the period in which the installation occurred to the extent these fees were equal to or less than direct selling costs. Under IFRS 15, these fees are generally deferred and recognized as revenue over the contractual period, or longer if the upfront fee results in a material renewal right.

IFRS 15 also impacted our accounting for certain upfront costs directly associated with obtaining and fulfilling customer contracts. Under our previous policy, these costs were expensed as incurred unless the costs were in the scope of another accounting topic that allowed for capitalization. Under IFRS 15, certain upfront costs associated with contracts that have substantive termination penalties and a term of one year or more are recognized as assets and amortized to operating costs and expenses over the applicable period benefited.

For additional information regarding the impact of our adoption of IFRS 15, see note 4.

The cumulative effect of the adoption of IFRS 15 on the summary statement of financial position information as of January 1, 2018 is as follows:

	Balance at December 31, 2017	IFRS 15 Adjustments	Balance at January 1, 2018
		in millions	
Assets:			
Equity-method investments (a)	$ 4,347.4	191.2	$ 4,538.6
Other assets, net	$ 5,393.7	34.5	$ 5,428.2
Other current assets	$ 483.6	177.3	$ 660.9
Trade receivables and unbilled revenue, net	$ 1,540.4	(3.2)	$ 1,537.2
Equity:			
Retained earnings	$ 1,024.3	320.1	$ 1,344.4
Noncontrolling interests	$ (425.7)	4.4	$ (421.3)
Liabilities:			
Other non-current liabilities	$ 2,697.2	41.8	$ 2,739.0
Accrued income taxes	$ 472.3	1.2	$ 473.5
Deferred revenue	$ 1,101.1	32.3	$ 1,133.4

(a) The IFRS 15 adjustment amounts include the impact of our share of the VodafoneZiggo JV's adjustment to its owners' equity.

The impact of our adoption of IFRS 15 on the consolidated statement of financial position as of December 31, 2018 was not materially different from the impacts set forth in the above January 1, 2018 summary statement of financial position information. Similarly, the adoption of IFRS 15 did not have a material impact on the consolidated statement of profit or loss for the year ended December 31, 2018.

New Accounting Standards, Not Yet Effective

Except for the following accounting standards that are relevant for the company, there were no additional standards and interpretations issued by the IASB that are not yet effective for the current reporting period that we see as relevant for the company. We have not early adopted the accounting standards that are relevant for us.

Standard/ Interpretation	Title	Applicable for fiscal years beginning on or after	Date of endorsement by the E.U.
IFRS 16	Leases	January 1, 2019 (a)	October 31, 2017
IFRIC 23	Uncertainty over Income Tax Treatments	January 1, 2019 (b)	October 23, 2018

(a) In January 2016, the IASB issued IFRS 16, *Leases* (**IFRS 16**), which supersedes IAS 17 *Leases* (**IAS 17**). IFRS 16 will result in lessees recognizing right-of-use assets and lease liabilities on the statement of financial position with additional disclosures about leasing arrangements. IFRS 16 also eliminates the classification of leases as either operating leases or finance leases by a lessee. IFRS 16 requires lessees and lessors to recognize and measure leases retrospectively to each prior reporting period presented (full retrospective approach) or retrospectively through a cumulative effect adjustment to equity on the effective date (modified retrospective approach). The modified retrospective approach also includes a number of optional practical expedients that may be applied. IFRS 16 also replaces the straight-line operating lease expense for those leases accounted for under IAS 17 with a depreciation charge for the lease asset and an interest expense on the lease liability. This change aligns the lease expense treatment for all leases. The new standard is effective for annual reporting periods beginning on or after January 1, 2019, while early adoption is permitted if IFRS 15 is applied.

We will adopt IFRS 16 on January 1, 2019 by using the modified retrospective approach. We intend to apply the following practical expedients and options:

- In transition, we will not reassess which existing contracts are or contain leases. In addition, we will not use hindsight during transition;
- We will not apply the practical expedient that permits a lessee to account for lease and non-lease components in a contract as a single lease component and, accordingly, we will continue to account for these components separately;
- We will not recognize right-of-use assets and lease liabilities for leases with terms of 12 months or less; and
- We will apply a single discount rate to a portfolio of leases with reasonably similar characteristics.

The main impacts of the adoption of this standard will be (i) the recognition of right-of-use assets and lease liabilities in the consolidated statements of financial position for leases previously accounted for as operating leases and (ii) the replacement of operating lease expense with a depreciation charge for right-of-use assets and interest expense on lease liabilities. This change will result in a front-loaded total lease expense versus the previous straight-line operating lease expense.

We have implemented a new lease accounting system and related internal controls to meet the requirements of IFRS 16. We expect to record significant right-of-use assets and corresponding lease liabilities upon adoption. We expect that the adoption of IFRS 16 will increase Adjusted EBITDA as a result of operating lease expense being replaced with a depreciation charge for right-of-use assets and interest expense on lease liabilities. We also expect that the adoption of IFRS 16 will increase cash flows from operating activities and decrease cash flows from financing activities on the consolidated statement of cash flows, as all principal payments on lease liabilities will be presented within the cash flows from financing activities.

For a summary of our undiscounted future minimum lease payments under operating leases as of December 31, 2018, see note 20.

(b) We evaluated the impact of applying this accounting standard on the consolidated financial statements and do not believe the impact of the adoption of this standard to be material.

(3) Summary of Significant Accounting Policies

Estimates and Judgments

In connection with the preparation of the consolidated financial statements, we make estimates and assumptions that affect the reported amounts of assets and liabilities, revenue and expenses and related disclosure of contingent assets and liabilities. Critical accounting policies are defined as those policies that are reflective of significant judgments, estimates and uncertainties, which would potentially result in materially different results under different assumptions and conditions. We believe the following accounting policies are critical in the preparation of the consolidated financial statements because of the judgment necessary to account for these matters and the significant estimates involved, which are susceptible to change:

- Impairment of property and equipment and intangible assets (including goodwill);

- Costs associated with construction and installation activities;
- Fair value measurements; and
- Income tax accounting.

We have discussed the selection of the aforementioned critical accounting policies with the audit committee of our board of directors.

Impairment of Property and Equipment and Intangible Assets

Carrying Value. The aggregate carrying value of our property and equipment and intangible assets (including goodwill) that was held for use comprised 67.3% of our total assets at December 31, 2018.

When circumstances warrant, we review the carrying amounts of our property and equipment and our intangible assets (other than goodwill and other indefinite-lived intangible assets) to determine whether such carrying amounts continue to be recoverable. Such changes in circumstance may include (i) an expectation of a sale or disposal of a non-current asset or asset group, (ii) adverse changes in market or competitive conditions, (iii) an adverse change in legal factors or business climate in the markets in which we operate and (iv) operating or cash flow losses. For purposes of impairment testing, non-current assets are grouped at the lowest level for which cash flows are largely independent of other assets and liabilities, generally at or below the reporting unit level (see below). If the carrying amount of the asset or asset group is greater than the expected undiscounted cash flows to be generated by such asset or asset group, an impairment adjustment is recognized. Such adjustment is measured by the amount that the carrying value of such asset or asset group exceeds its fair value. We generally measure fair value by considering (a) sale prices for similar assets, (b) discounted estimated future cash flows using an appropriate discount rate and/or (c) estimated replacement cost. Assets to be disposed of are recorded at the lower of their carrying amount or fair value less costs to sell.

We evaluate goodwill and other indefinite-lived intangible assets for impairment at least annually on October 1 and whenever facts and circumstances indicate that their carrying amounts may not be recoverable. For impairment evaluations with respect to both goodwill and other indefinite-lived intangibles, we first make a qualitative assessment to determine if the goodwill or other indefinite-lived intangible may be impaired. In the case of goodwill, if a the fair value of one of our cash-generating units, or "**CGUs**," is less than its carrying value, we then compare the fair value of the reporting unit to its respective carrying amount. Any excess of the carrying amount over the fair value would be charged to operations as an impairment loss. A cash-generating unit is an operating segment or one level below an operating segment (referred to as a "component"). With respect to other indefinite-lived intangible assets, if the fair value of an indefinite-lived intangible asset is less than its carrying value, we then estimate its fair value and any excess of the carrying value over the fair value is also charged to operations as an impairment loss.

When required, considerable management judgment is necessary to estimate the fair value of cash-generating units and underlying non-current and indefinite-lived assets, the most significant of which relate to the determination of EBITDA (earnings before interest, taxes, depreciation and amortization) multiples for recent transactions and publicly-traded peer companies. For additional information regarding our 2018 quantitative goodwill impairment assessment, see note 7.

During the three years ended December 31, 2018, we did not record any significant impairment charges with respect to our property and equipment and intangible assets. For additional information regarding our non-current assets, see note 9.

If, among other factors, (i) our equity values were to decline significantly or (ii) the adverse impacts of economic, competitive, regulatory or other factors were to cause our results of operations or cash flows to be worse than anticipated, we could conclude in future periods that impairment charges are required in order to reduce the carrying values of our goodwill and, to a lesser extent, other non-current assets. Any such impairment charges could be significant. Impairment of goodwill is not reversed. For other assets, an impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized.

Costs Associated with Construction and Installation Activities

We capitalize costs associated with the construction of new cable and mobile transmission and distribution facilities and the installation of new cable services. Installation activities that are capitalized include (i) the initial connection (or drop) from our cable system to a customer location, (ii) the replacement of a drop and (iii) the installation of equipment for additional services, such as digital cable, telephone or broadband internet service. The costs of other customer-facing activities, such as reconnecting and disconnecting customer locations and repairing or maintaining drops, are expensed as incurred.

The nature and amount of labor and other costs to be capitalized with respect to construction and installation activities involves significant judgment and estimates. In addition to direct external and internal labor and materials, we also capitalize other costs directly attributable to our construction and installation activities, including dispatch costs, quality-control costs, vehicle-related costs and certain warehouse-related costs. The capitalization of these costs is based on time sheets, time studies, standard costs, call tracking systems and other verifiable means that directly link the costs incurred with the applicable capitalizable activity. We continuously monitor the appropriateness of our capitalization policies and update the policies when necessary to respond to changes in facts and circumstances, such as the development of new products and services and changes in the manner that installations or construction activities are performed.

Fair Value Measurements

E.U.-IFRS provides guidance with respect to the recurring and nonrecurring fair value measurements and for a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three broad levels. Level 1 inputs are quoted market prices in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date. Level 2 inputs are inputs other than quoted market prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs for the asset or liability.

Recurring Valuations. We perform recurring fair value measurements with respect to our derivative instruments, our fair value method investments and certain instruments that we classify as debt, each of which are carried at fair value. We use (i) cash flow valuation models to determine the fair values of our interest rate and foreign currency derivative instruments and (ii) a binomial option pricing model to determine the fair values of our equity-related derivative instruments. We use quoted market prices when available and, when not available, we use a combination of an income approach (discounted cash flows) and a market approach (market multiples of similar businesses) to determine the fair value of our fair value method investments. For a detailed discussion of the inputs we use to determine the fair value of our derivative instruments and fair value method investments, see note 8. See notes 6 and 7 for information concerning our fair value method investments and derivative instruments, respectively.

Changes in the fair values of our derivative instruments, fair value method investments and certain instruments that we classify as debt have had, and we believe will continue to have, a significant and volatile impact on our results of operations. During 2018 and 2017, we recognized a net gain (loss) of $744.5 million and ($1,013.0 million), respectively, attributable to changes in the fair values of these items.

As further described in note 8, actual amounts received or paid upon the settlement or disposition of these investments and instruments may differ materially from the recorded fair values at December 31, 2018.

Nonrecurring Valuations. Our nonrecurring valuations are primarily associated with (i) the application of acquisition accounting and (ii) impairment assessments, both of which require that we make fair value determinations as of the applicable valuation date. In making these determinations, we are required to make estimates and assumptions that affect the recorded amounts, including, but not limited to, expected future cash flows, market comparables and discount rates, remaining useful lives of non-current assets, replacement or reproduction costs of property and equipment and the amounts to be recovered in future periods from acquired net operating losses and other deferred tax assets. To assist us in making these fair value determinations, we may engage third-party valuation specialists. Our estimates in this area impact, among other items, the amount of depreciation and amortization, impairment charges and income tax expense or benefit that we report. Our estimates of fair value are based upon assumptions we believe to be reasonable, but which are inherently uncertain. A significant portion of our non-current assets were initially recorded through the application of acquisition accounting and all of our non-current assets are subject to impairment assessments. For additional information, including the specific weighted average discount rates that we used to complete certain nonrecurring valuations, see note 8. For information regarding our acquisitions and non-current assets, see notes 3 and 9, respectively.

Income Tax Accounting

We are required to estimate the amount of tax payable or refundable for the current year and the deferred tax assets and liabilities for the future tax consequences attributable to differences between the financial statement carrying amounts and income tax basis of assets and liabilities and the expected benefits of utilizing net operating loss and tax credit carryforwards, using enacted or substantially enacted tax rates in effect for each taxing jurisdiction in which we operate for the year in which those temporary differences are expected to be recovered or settled. This process requires our management to make assessments regarding the timing and probability of the ultimate tax impact of such items.

Net deferred tax assets are recognized to the extent that the realization of them is considered probable. Recognizing deferred tax assets requires us to make assessments about the timing of future events, including the probability of expected future taxable income and available tax planning strategies. At December 31, 2018, the aggregate of unrecognized deferred tax assets was $4,055.9 million. The actual amount of deferred income tax benefits realized in future periods will likely differ from the net deferred tax assets reflected in our December 31, 2018 consolidated balance sheet due to, among other factors, possible future changes in income tax law or interpretations thereof in the jurisdictions in which we operate and differences between estimated and actual future taxable income. Any such factors could have a material effect on our current and deferred tax positions as reported in the consolidated financial statements. A high degree of judgment is required to assess the impact of possible future outcomes on our current and deferred tax positions.

Tax laws in jurisdictions in which we have a presence are subject to varied interpretation, and many tax positions we take are subject to significant uncertainty regarding whether the position will be ultimately sustained after review by the relevant tax authority. We recognize the financial statement effects of a tax position when it is considered probable that the position will be sustained upon examination. The determination of whether the tax position meets the probable threshold requires a facts-based judgment using all information available. In a number of cases, we have concluded that the probable threshold is not met and, accordingly, the amount of tax benefit recognized in the consolidated financial statements is different than the amount taken or expected to be taken in our tax returns.

Principles of Consolidation

The accompanying consolidated financial statements include our accounts and the accounts of all entities controlled by the company. Liberty Global controls an entity if we are exposed to variable returns from our involvement with the entity and we have the ability to affect those returns through our power over the respective entity. Such entities are included in the consolidated financial statements from the date that control commences until the date that control ceases. All significant intra-group balances and transactions have been eliminated in preparing the consolidated financial statements.

When control over an entity is lost, we derecognize the assets and liabilities of the entity, and any related non-controlling interests and other components of equity. Any resulting gain or loss is recognised in profit or loss. Any interest retained in the entity is measured at fair value when control is lost.

Cash and Cash Equivalents and Restricted Cash

Cash equivalents consist of money market funds and other investments that are readily convertible into cash and have maturities of three months or less at the time of acquisition. We record money market funds at the net asset value reported by the investment manager as there are no restrictions on our ability, contractual or otherwise, to redeem our investments at the stated net asset value reported by the investment manager.

Restricted cash consists of cash held in restricted accounts, including cash held as collateral for debt and other compensating balances. Restricted cash amounts that are required to be used to purchase non-current assets or repay non-current debt are classified as non-current assets. All other cash that is restricted to a specific use is classified as current or non-current based on the expected timing of the disbursement.

Our significant non-cash investing and financing activities are disclosed in our consolidated statements of equity and in notes 5, 7, 9 and 15.

Trade Receivables

Our trade receivables are initially measured at fair value and subsequently reported at amortized cost, net of an allowance for impairment of trade receivables. The allowance for impairment of trade receivables is estimated based upon our assessment of anticipated loss related to uncollectible accounts receivable. We use a number of factors in determining the allowance, including, among other things, collection trends, prevailing and anticipated economic conditions, and specific customer credit risk. The allowance is maintained until either payment is received or the likelihood of collection is considered to be remote. For additional information regarding our trade receivable and allowance for impairment of trade receivables, see note 12.

Concentration of credit risk with respect to trade receivables is limited due to the large number of residential and business customers. We also manage this risk by disconnecting services to customers whose accounts are delinquent.

Associates and Joint Ventures

Associates are entities where the company has significant influence, but not control or joint control, over the relevant activities of the entity. Joint ventures are joint arrangements whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement.

Interests in associates and joint ventures are accounted for under the equity method, and are initially recognized at cost, which includes transaction costs. These consolidated financial statements include the company’s share of the total recognized gains and losses of associates and joint ventures using the equity method, from the date that significant influence or joint control commences to the date that it ceases, based on present ownership interests and excluding the possible exercise of potential voting rights, less any impairment losses. Intercompany profits on transactions with associates or joint ventures for which assets remain on our or our investee's statement of financial position are eliminated to the extent of our ownership in the investee. When the company’s investment in an associate or joint venture has been reduced to zero because the company’s share of losses exceeds its investment in the associate or joint venture, the company only provides for additional losses to the extent that it has incurred legal or constructive obligations to fund such losses, or where the company has made payments on behalf of the associate or joint venture. Where the disposal of an investment in an associate or joint venture is considered to be highly probable, the investment ceases to be equity accounted and, instead, is classified as held for sale and stated at the lower of carrying amount and fair value less costs to sell.

Other Investments

We account for our other investments at fair value through profit or loss as these investments are managed and evaluated on a fair value basis. Under the fair value method, other investments are recorded at fair value and any changes in fair value are reported in realized and unrealized gains or losses due to changes in fair values of certain investments, net, in our consolidated statements of profit or loss.

Other investments are recognized and derecognized on a trade date where a purchase or sale of an investment is under a contract whose terms require delivery of the investment within the timeframe established by the market concerned, and are initially measured at fair value. All costs directly associated with the acquisition of an investment to be accounted for under the fair value method are expensed as incurred.

Dividends from publicly-traded investees that are not accounted for under the equity method are recognized when declared as dividend income in our consolidated statements of profit or loss. Dividends from our equity method investees and all of our privately-held investees are reflected as reductions of the carrying values of the applicable investments. Dividends that are deemed to be (i) returns on our investments are included in cash flows from operating activities in our consolidated statements of cash flows and (ii) returns of our investments are included in cash flows from investing activities in our consolidated statements of cash flows.

Realized gains and losses are determined on an average cost basis.

Non-Derivative Financial Instruments

Cash and cash equivalents, current trade and other receivables, related-party receivables and payables, certain other current assets, accounts payable, certain accrued liabilities and value-added taxes (**VAT**) payable represent financial instruments that are initially recognized at fair value and subsequently carried at amortized cost. Due to their relatively short maturities, the carrying values of these financial instruments approximate their respective fair values.

Loans and other receivables are financial assets with fixed or determinable payments that are not quoted in an active market. Such loans and other receivables are recognized initially at fair value plus any directly attributable transaction costs. Subsequent to initial recognition, loans and receivables are measured at amortized cost using the effective interest method, less any impairment losses.

The company initially recognizes loans and receivables on the date they are originated. All other financial assets (including assets designated as fair value through the statement of profit or loss) are recognized initially on the trade date, which is the date that the company becomes a party to the contractual provisions of the instrument.

The company derecognizes a financial asset when the contractual rights to the cash flows from the asset expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all the risks and rewards of ownership of the financial asset are transferred. Any interest in such transferred financial assets that is created or retained by the company is recognized as a separate asset or liability.

The company initially recognizes debt securities issued and subordinated liabilities on the date that they are originated. All other financial liabilities are recognized initially on the trade date, which is the date that the company becomes a party to the contractual provisions of the instrument.

The company derecognizes a financial liability when its contractual obligations are discharged, cancelled or expire.

For information concerning the fair values of certain of our investments, derivatives and debt, see notes 8, 9 and 15, respectively. For information concerning how we arrive at certain of our fair value measurements, see note 10.

All loans and borrowings are initially recognized at fair value less directly attributable transaction costs. After initial recognition, interest bearing loans and borrowings are subsequently measured at amortized cost using the effective interest method. Gains and losses arising on the repurchase, settlement or otherwise cancellation of liabilities are recognized respectively in interest income or expense. Finance costs which are incurred in connection with the issuance of debt are deferred and set off against the borrowings to which they relate. Deferred finance costs are amortized over the term of the related debt using the effective interest method.

Derivative Instruments

All derivative instruments, whether designated as hedging relationships or not, are recorded on the statement of financial position at fair value. If the derivative instrument is not designated as a hedge, changes in the fair value of the derivative instrument are recognized in earnings. If the derivative instrument is designated as a fair value hedge, the changes in the fair value of the derivative instrument and of the hedged item attributable to the hedged risk are recognized in earnings. If the derivative instrument is designated as a cash flow hedge, the effective portion of changes in the fair value of the derivative instrument are recorded in other comprehensive earnings or loss and accumulated in other reserves, and subsequently reclassified into our consolidated statements of profit or loss when the hedged forecasted transaction affects earnings. Ineffective portions of changes in the fair value of cash flow hedges are recognized in earnings. Hedge accounting is discontinued when the company revokes the hedging relationship, when the hedging instruments expires or is sold, terminated, or exercised, or when it no longer qualifies for hedge accounting. The fair value adjustment to the carrying amount of the hedged item arising from the hedged risk is amortized to profit or loss from that date. With the exception of a limited number of our foreign currency forward contracts, we do not apply hedge accounting to our derivative instruments.

The net cash received or paid related to our derivative instruments is classified as an operating, investing or financing activity in our consolidated statements of cash flows based on the objective of the derivative instrument and the classification of the applicable underlying cash flows. For derivative contracts that are terminated prior to maturity, the cash paid or received upon termination that relates to future periods is classified as a financing activity in our consolidated statement of cash flows.

For information regarding our derivative instruments, see note 9.

Property and Equipment

Property and equipment are measured at initial cost less accumulated depreciation and any accumulated impairment losses. When parts of an item of property and equipment have different useful lives, they are accounted for as separate items (major components) of property and equipment. We capitalize costs associated with the construction of new cable and mobile transmission and distribution facilities and the installation of new cable services. Capitalized construction and installation costs include materials, labor and other directly attributable costs. Installation activities that are capitalized include (i) the initial connection (or drop) from our cable system to a customer location, (ii) the replacement of a drop and (iii) the installation of equipment for additional services, such as digital cable, telephone or broadband internet service. The costs of other customer-facing activities, such as reconnecting and disconnecting customer locations and repairing or maintaining drops, are expensed as incurred. Financing costs capitalized with respect to construction activities was not material during any of the periods presented.

Depreciation is computed using the straight-line method over the estimated useful life of each major component of an item of property and equipment. Assets held under finance leases are amortized on a straight-line basis over the shorter of the lease term or estimated useful life of the asset. Useful lives used to depreciate our property and equipment are reviewed at each reporting date and are adjusted if appropriate. The useful lives of cable and mobile distribution systems that are undergoing a rebuild are adjusted such that property and equipment to be retired will be fully depreciated by the time the rebuild is completed. For information regarding the useful lives of our property and equipment, see note 7.

Subsequent costs are included in the assets' carrying amount or recognized as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the expenditure will be achieved and when the cost can be measured reliably. All other expenditures for repairs and maintenance are expensed as incurred.

Gains and losses due to disposals are included in impairment, restructuring and other operating items, net.

Intangible Assets

Our primary intangible assets relate to goodwill, customer relationships, cable television franchise rights and software costs. Goodwill represents the excess purchase price over the fair value of the identifiable net assets acquired in a business combination. Customer relationships and cable television franchise rights are initially recorded at their fair values in connection with business combinations.

Goodwill and other intangible assets with indefinite useful lives are not amortized, but instead are tested for impairment at least annually. Intangible assets with finite lives are amortized on a straight-line basis over their respective estimated useful lives, and reviewed for indications of impairment at each reporting date. Amortization methods and useful lives are reviewed at each reporting date and are adjusted if appropriate.

Costs that are directly associated with the production of identifiable and unique software products controlled by the company, and that are expected to generate economic benefits beyond one year, are recognized as intangible assets. Capitalized internal-use software costs include only external direct costs of materials and services consumed in developing or obtaining the software and payroll and payroll-related costs for employees who are directly associated with the project. Capitalization of these costs ceases no later than the point at which the project is substantially complete and ready for its intended purpose. Internally-generated intangible assets are amortized on a straight-line basis over their useful lives. Costs associated with maintaining computer software are recognized as an expense as incurred.

We do not amortize our cable television franchise rights and certain other intangible assets as these assets have indefinite lives. For information regarding the useful lives of our intangible assets, see note 7.

Subsequent expenditures related to intangible assets are capitalized only when the expenditures increase the future economic benefits embodied in the specific asset to which it relates. All other expenditures, including expenditures on internally generated brands, are expensed as incurred.

Provisions

A provision is recognized when a present legal or constructive obligation as a result of a past event exists, it is probable (more likely than not) that an outflow of resources will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation.

If the effect of the time value of money is material, provisions are discounted using a pre-tax rate reflecting, where appropriate, the risks specific to the liability. When discounting is used, the increase in the provision due to the passage of time is recognized as finance cost.

A provision for restructuring is recognized when management has approved a detailed and formal restructuring plan and the restructuring has either commenced or has been announced to the parties concerned. For additional information on our restructuring provisions, see note 16.

A provision for asset retirement obligations is recognized related to dismantling and removing items at leased property and restoring the site on which these items are located after termination of the lease agreement.

A provision for onerous contracts is recognized when the expected benefits to be derived from a contract are lower than the unavoidable costs of meeting its obligations under the contract. The provision is measured at the present value of the lower of the expected cost of terminating the contract and the expected net cost of continuing with the contract. Before a provision is established, we recognize an impairment loss on the assets associated with the respective contract. For additional information on onerous contract provisions, see note 16.

A provision for payroll taxes incurred in connection with the vesting or exercise of our share-based incentive awards is recognized as the awards vest in relation to the services as they are received during the vesting period. For additional information on share-based incentive awards, see “Share-based Compensation” discussion below and note 14.

Income Taxes

Income taxes are accounted for under the asset and liability method. We recognize deferred tax assets and liabilities for the future tax consequences attributable to differences between the financial statement carrying amounts and income tax basis of assets and liabilities and the expected benefits of utilizing net operating loss and tax credit carryforwards, using enacted or substantively enacted tax rates in effect for each taxing jurisdiction in which we operate for the year in which those temporary differences are expected to be recovered or settled. We recognize the financial statement effects of a tax position when it is probable, based on technical merits, that the position will be sustained upon examination. Net deferred tax assets are then recognized to the extent that realization is considered probable. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in the period that includes the enactment or substantive enactment date. Deferred tax liabilities related to investments in foreign subsidiaries and foreign corporate joint ventures that are essentially permanent in duration are not recognized until it becomes apparent that such amounts will reverse in the foreseeable future. In order to be considered essentially permanent in duration, sufficient evidence must indicate that the foreign subsidiary has invested or will invest its undistributed earnings indefinitely, or that earnings will be remitted in a tax-free manner.

Foreign Currency Translation and Transactions

The reporting currency of our company is the U.S. dollar. The functional currency of our foreign operations generally is the applicable local currency for each foreign subsidiary and equity method investee. Assets and liabilities of foreign subsidiaries (including intercompany balances for which settlement is not anticipated in the foreseeable future) are translated at the spot rate in effect at the applicable reporting date. With the exception of certain material transactions, the amounts reported in our consolidated statements of profit or loss are translated at the average exchange rates in effect during the applicable period. The resulting unrealized cumulative translation adjustment, net of applicable income taxes, is recorded as a component of accumulated other comprehensive earnings or loss in our consolidated statements of equity. With the exception of certain material transactions, the cash flows from our operations in foreign countries are translated at the average rate for the applicable period in our consolidated statements of cash flows. The impacts of material transactions generally are recorded at the applicable spot rates in our consolidated statements of profit or loss and cash flows. The effect of exchange rates on cash balances held in foreign currencies are separately reported in our consolidated statements of cash flows.

Transactions denominated in currencies other than our or our subsidiaries' functional currencies are recorded based on exchange rates at the time such transactions arise. Changes in exchange rates with respect to amounts recorded in our consolidated statements of financial position related to these non-functional currency transactions result in transaction gains and losses that are reflected in our consolidated statements of profit or loss as unrealized (based on the applicable period end exchange rates) or realized upon settlement of the transactions.

Revenue Recognition

Service Revenue — Cable Networks. We recognize revenue from the provision of video, broadband internet and fixed-line telephony services over our cable network to customers in the period the related services are provided, with the exception of revenue recognized pursuant to certain contracts that contain promotional discounts, as described below. Installation fees related to services provided over our cable network are generally deferred and recognized as revenue over the contractual period, or longer if the upfront fee results in a material renewal right.

Sale of Multiple Products and Services. We sell video, broadband internet, fixed-line telephony and, in most of our markets, mobile services to our customers in bundled packages at a rate lower than if the customer purchased each product on a standalone basis. Revenue from bundled packages generally is allocated proportionally to the individual products or services based on the relative standalone selling price for each respective product or service.

Mobile Revenue — General. Consideration from mobile contracts is allocated to the airtime service component and the handset component based on the relative standalone selling prices of each component. In markets where we offer handsets and airtime services in separate contracts entered into at the same time, we account for these contracts as a single contract.

Mobile Revenue — Airtime Services. We recognize revenue from mobile services in the period in which the related services are provided. Revenue from pre-pay customers is deferred prior to the commencement of services and recognized as the services are rendered or usage rights expire.

Mobile Revenue — Handset Revenue. Revenue from the sale of handsets is recognized at the point in which the goods have been transferred to the customer. Some of our mobile handset contracts that permit the customer to take control of the handset upfront and pay for the handset in installments over a contractual period may contain a significant financing component. For contracts with terms of one year or more, we recognize any significant financing component as revenue over the contractual period using the effective interest method. We do not record the effect of a significant financing component if the contractual period is less than one year.

B2B Revenue. We defer upfront installation and certain nonrecurring fees received on B2B contracts where we maintain ownership of the installed equipment. The deferred fees are amortized into revenue on a straight-line basis, generally over the longer of the term of the arrangement or the expected period of performance.

Contract Costs. Incremental costs to obtain a contract with a customer, such as incremental sales commissions, are generally recognized as assets and amortized to SG&A expenses over the applicable period benefited, which generally is the contract life. If, however, the amortization period is less than one year, we expense such costs in the period incurred. Contract fulfillment costs, such as costs for installation activities for B2B customers, are recognized as assets and amortized to other operating costs over the applicable period benefited, which is generally the substantive contract term for the related service contract.

Promotional Discounts. For subscriber promotions, such as discounted or free services during an introductory period, revenue is recognized uniformly over the contractual period if the contract has substantive termination penalties. If a contract does not have substantive termination penalties, revenue is recognized only to the extent of the discounted monthly fees charged to the subscriber, if any.

Subscriber Advance Payments. Payments received in advance for the services we provide are deferred and recognized as revenue when the associated services are provided.

Sales, Use and Other VAT. Revenue is recorded net of applicable sales, use and other value-added taxes.

For additional information regarding our revenue recognition and related costs, see note 4. For a disaggregation of our revenue by major category and by reportable and geographic segment, see note 18.

Share-based Compensation

We recognize all share-based payments to employees, including grants of employee share-based incentive awards, based on their grant-date fair values and our estimates of forfeitures. We recognize the grant-date fair value of outstanding awards as a charge to operations over the vesting period. The cash benefits of tax deductions in excess of deferred taxes on recognized share-based compensation expense are reported as cash flows from operating activities. Payroll taxes incurred in connection with the vesting or exercise of our share-based incentive awards are recorded as a component of share-based compensation expense in our consolidated statements of profit or loss.

The grant date fair values for options and share appreciation rights (**SARs**) are estimated using the Black-Scholes option pricing model, and the grant date fair values for restricted share units (**RSUs**) and performance-based restricted share units (**PSUs)** are based upon the closing share price of Liberty Global ordinary shares on the date of grant. We consider historical exercise trends in our calculation of the expected life of options and SARs granted by Liberty Global to employees. The expected volatility for options and SARs related to our ordinary shares is generally based on a combination of (i) historical volatilities for a period equal to the expected average life of the awards and (ii) volatilities implied from publicly-traded options for our shares.

We generally issue new Liberty Global ordinary shares when Liberty Global options or SARs are exercised and when RSUs and PSUs vest. Although we repurchase Liberty Global ordinary shares from time to time, the parameters of our share purchase and redemption activities are not established with reference to the dilutive impact of our share-based compensation plans.

For additional information regarding our share-based compensation, see note 14.

Litigation Costs

Legal fees and related litigation costs are expensed as incurred.

Earnings or Loss per Share

Basic earnings or loss per share (**EPS**) is computed by dividing net earnings or loss by the weighted average number of shares outstanding for the period. Diluted EPS presents the dilutive effect, if any, on a per share basis of potential shares (e.g., options, SARs, RSUs and PSUs) as if they had been exercised, vested or converted at the beginning of the periods presented.

The details of our net profit (loss) from continuing operations attributable to Liberty Global shareholders are set forth below:

	Year ended December 31,	
	2018	2017
	in millions	
Loss from continuing operations	$ (1,476.5)	$ (2,371.1)
Net profit from continuing operations attributable to noncontrolling interests	(131.9)	(57.8)
Net loss from continuing operations attributable to Liberty Global shareholders	$ (1,608.4)	$ (2,428.9)
Weighted average shares outstanding:		
Basic	778,675,957	847,894,601
Diluted	778,675,957	847,894,601

We reported losses from continuing operations attributable to Liberty Global shareholders during 2018 and 2017. Therefore, the potentially dilutive effect at December 31, 2018 and 2017 of the following items was not included in the computation of diluted loss from continuing operations attributable to Liberty Global shareholders per share because their inclusion would have been anti-dilutive to the computation or, in the case of certain PSUs, because such awards had not yet met the applicable performance criteria, including (i) the aggregate number of shares issuable pursuant to outstanding options, SARs and RSUs of 58.7 million and 53.7 million, respectively, and (ii) the aggregate number of shares issuable pursuant to PSUs of 9.2 million and 6.2 million, respectively.

(4) Revenue Recognition and Related Costs

Contract Balances

If we transfer goods or services to a customer but do not have an unconditional right to payment, we record a contract asset. Contract assets typically arise from the uniform recognition of introductory promotional discounts over the contract period and accrued revenue for handset sales. Our contract assets were $44.3 million and $42.0 million as of December 31, 2018 and January 1, 2018, respectively. The non-current and current portions of our contract asset balance at December 31, 2018 are included within other assets, net, and other current assets, respectively, in our consolidated statement of financial position.

We record deferred revenue when we receive payment prior to transferring goods or services to a customer. We primarily defer revenue for (i) installation and other upfront services and (ii) other services that are invoiced prior to when services are provided. Our deferred revenue balances were $877.9 million and $1,160.6 million as of December 31, 2018 and January 1, 2018, respectively. The decrease in deferred revenue during 2018 is primarily due to $901.4 million of revenue recognized that was included in our deferred revenue balance at January 1, 2018, partially offset by advanced billings in certain markets. The non-current and current portions of our deferred revenue balance at December 31, 2018 are included within other non-current liabilities and deferred revenue, respectively, in our consolidated statement of financial position.

Contract Costs

Our aggregate assets associated with incremental costs to obtain and fulfill our contracts were $73.0 million and $182.1 million at December 31, 2018 and January 1, 2018, respectively. The current and non-current portions of our assets related to contract costs at December 31, 2018 are included within other current assets and other assets, net, respectively, in our consolidated statement of financial position. We amortized $99.8 million to operating costs and expenses during 2018 related to these assets.

Unsatisfied Performance Obligations

A large portion of our revenue is derived from customers who are not subject to contracts. Revenue from customers who are subject to contracts is generally recognized over the term of such contracts, which is typically 12 months for our residential service contracts, one to three years for our mobile service contracts and one to five years for our B2B service contracts.

(5) Acquisitions

2017 Acquisition

SFR BeLux. On June 19, 2017, Telenet acquired Coditel Brabant sprl, operating under the SFR brand (**SFR BeLux**), for a cash and debt free purchase price of €369.0 million ($410.3 million at the applicable rates) (the **SFR BeLux Acquisition**) after post-closing adjustments. SFR BeLux provides cable and mobile services to households and businesses in Belgium and Luxembourg and offers mobile services in Belgium through a mobile virtual network operator (**MVNO**) agreement with BASE, as defined and described below. The SFR BeLux Acquisition was funded through a combination of €210.0 million ($234.3 million at the transaction date) of borrowings under the Telenet Credit Facility (as defined and described in note 15) and existing liquidity of Telenet.

(6) Dispositions

Pending and Completed Dispositions

Vodafone Disposal Group

On May 9, 2018, we reached an agreement (the **Vodafone Agreement**) to sell our operations in Germany, Hungary, the Czech Republic and Romania to Vodafone Group plc (**Vodafone**). The cash proceeds that we receive from the transaction will be calculated on the basis of the agreed enterprise value adjusted for the net debt and working capital of such businesses as of the closing date of the transaction, as well as other post-closing adjustments. Based on the net debt and working capital of such businesses as of

December 31, 2017, the cash proceeds would be approximately €10.6 billion ($12.1 billion). The operations of Germany, Romania, Hungary and the Czech Republic are collectively referred to herein as the "**Vodafone Disposal Group**."

Closing of the transaction is subject to various conditions, including regulatory approval, which we expect will be obtained in mid-2019. The Vodafone Agreement contains certain termination rights for both our company and Vodafone, including if closing has not occurred by November 9, 2019, or May 9, 2020 in certain limited circumstances. If the Vodafone Agreement terminates because the condition to obtain antitrust approval is not met, Vodafone has agreed to pay us a compensatory payment of €250.0 million ($286.3 million). Pursuant to the Vodafone Agreement, our company will retain all cash generated from the Vodafone Disposal Group through the closing of the transaction.

In connection with the sale of the Vodafone Disposal Group, we have agreed to provide certain transitional services for a period of up to four years. These services principally comprise network and information technology-related functions. The annual charges will depend on the actual level of services required by Vodafone.

UPC Austria

On July 31, 2018, we completed the sale of our Austrian operations, "**UPC Austria**," to Deutsche Telekom AG (**Deutsche Telekom**). After considering debt, working capital and noncontrolling interest adjustments and $35.5 million (equivalent at the transaction date) of cash paid by our company to settle centrally-held vendor financing obligations associated with UPC Austria, we received net cash proceeds of $2,058.2 million (equivalent at the applicable rates). A portion of the net proceeds were used to repay or redeem an aggregate $1.5 billion (equivalent at the applicable dates) principal amount of our outstanding debt, including (i) the repayment of $913.4 million (equivalent at the repayment date) principal amount under the UPC Holding Bank Facility, (ii) the redemption of $69.6 million (equivalent at the redemption date) principal amount of the UPCB SPE Notes and (iii) the redemption of $515.5 million (equivalent at the redemption date) principal amount of the VM Notes. The remaining net proceeds from the sale of UPC Austria were made available for general corporate purposes, including an additional $500.0 million of share repurchases, as further described in note 13.

In connection with the sale of UPC Austria, we recognized a gain of $975.3 million that includes cumulative foreign currency translation losses of $43.2 million. No income taxes were required to be provided on this gain, which is included in gain on disposal of discontinued operations, net of taxes, in our consolidated statement of operations.

In connection with the sale of UPC Austria, we have agreed to provide certain transitional services to Deutsche Telekom for a period of up to four years. These services principally comprise network and information technology-related functions. The annual charges will depend on the actual level of services required by Deutsche Telekom. During 2018, we recorded revenue of $17.9 million associated with these transitional services.

A summary of the carrying amounts of the major classes of assets and liabilities of UPC Austria that were transferred to Deutsche Telekom in connection with the completion of the sale on July 31, 2018 is as follows (in millions):

Property and equipment, net	$ 463.0
Goodwill	707.7
Other assets, net	29.8
Current assets other than cash	33.4
Other non-current liabilities	(86.6)
Current portion of debt and finance lease obligations	(0.7)
Other accrued and current liabilities	(76.2)
Net assets	$ 1,070.4

UPC DTH

On December 21, 2018, we reached an agreement to sell the operations of UPC DTH to M7 Group (**M7**) for an enterprise value of approximately €180.0 million ($206.1 million), subject to customary debt and working capital adjustments at completion. Closing of the transaction is subject to regulatory approval, which is expected in the first half of 2019. The proceeds from the sale of UPC DTH are expected to be used for general corporate purposes, which may include leverage reduction for the remaining UPC Holding borrowing group, re-investment into our business and support for our share repurchase program.

In connection with the sale of UPC DTH, we have agreed to provide certain transitional services to M7 for a period of up to two years. These services principally comprise network and information technology-related functions. The annual charges will depend on the actual level of services required by the purchaser.

Subsequent event

Subsequent to December 31, 2018, we entered into an agreement to sell our operations in Switzerland. For additional information, see note 28.

Discontinued Operations

On December 29, 2017, in order to effect the split-off of the LiLAC Group (the **Split-off Transaction**), we distributed 100% of the common shares (the **Distribution**) of Liberty Latin America Ltd. (**Liberty Latin America**) to the holders of the then outstanding LiLAC Shares. Just prior to the completion of the Split-off Transaction, all of the businesses, assets and liabilities of the LiLAC Group were transferred to Liberty Latin America, which was then a wholly-owned subsidiary of Liberty Global. Following the Distribution, the LiLAC Shares were redesignated as deferred shares (which had virtually no economic rights) and Liberty Latin America became an independent publicly-traded company that is no longer consolidated by Liberty Global.

In connection with the Split-off Transaction, we recognized a gain of $242.9 million, representing the difference between the fair value and the carrying value of the net assets distributed. This gain is included in loss from discontinued operations, net of taxes, in our 2017 consolidated statement of profit and loss.

In connection with the Split-off Transaction, we entered into several agreements that govern certain transactions and other matters between our company and Liberty Latin America (the **Split-off Agreements**). The following summarizes the material agreements:

- a reorganization agreement (the **Reorganization Agreement**), which provides for, among other things, the principal corporate transactions (including the internal restructuring) required to effect the Split-off Transaction, certain conditions to the Split-off Transaction and provisions governing the relationship between Liberty Global and Liberty Latin America with respect to and resulting from the Split-off Transaction;

- a tax sharing agreement (the **Tax Sharing Agreement**), which governs the parties' respective rights, responsibilities and obligations with respect to taxes and tax benefits, the filing of tax returns, the control of audits and other tax matters;

- a services agreement (the **Services Agreement**), pursuant to which, for up to two years following the Split-off Transaction, with the option to renew for a one-year period, Liberty Global will provide Liberty Latin America with specified services, including access to Liberty Global's procurement team and tools to leverage scale and take advantage of joint purchasing opportunities, certain management services, other services to support Liberty Latin America's legal, tax, accounting and finance departments, and certain technical and information technology services (including software development services associated with Horizon TV, our next generation multimedia home gateway, management information systems, computer, data storage, and network and telecommunications services);

- a sublease agreement (the **Sublease Agreement**), pursuant to which Liberty Latin America will sublease office space from Liberty Global in Denver, Colorado until May 31, 2031, subject to customary termination and notice provisions; and

- a facilities sharing agreement (the **Facilities Sharing Agreement**), pursuant to which, for as long as the Sublease Agreement remains in effect, Liberty Latin America will pay a fee for the usage of certain facilities at the office space in Denver, Colorado.

Presentation of Discontinued Operations

The operations of the Vodafone Disposal Group, UPC Austria and UPC DTH are presented as discontinued operations in our consolidated financial statements for all periods. In connection with the signing of each respective sale agreement, we ceased to depreciate or amortize the non-current assets of (i) UPC Austria on December 22, 2017, (ii) the Vodafone Disposal Group on May 9, 2018 and (iii) UPC DTH on December 21, 2018. Our operations in Romania, Hungary and the Czech Republic and the operations of UPC DTH are held through UPC Holding, as was UPC Austria prior to its sale on July 31, 2018. No debt, interest expense or derivative instruments of the UPC Holding borrowing group, other than with respect to certain borrowings that are direct obligations of the entities to be disposed, has been allocated to discontinued operations. Conversely, all of Unitymedia's debt, interest expense and derivative instruments are included in discontinued operations as its debt and derivative instruments are direct obligations of entities within the Vodafone Disposal Group. As discussed above, a portion of the proceeds from the disposition of UPC Austria was used to reduce the outstanding debt of the UPC Holding borrowing group, and we expect that a portion of the proceeds from the pending disposition of the Vodafone Disposal Group will be used to further reduce the outstanding debt of the UPC Holding borrowing group.

In addition, the entities comprising the LiLAC Group are reflected as discontinued operations in our consolidated statements of profit and loss and cash flows for the year ended December 31, 2017.

The carrying amounts of the major classes of assets and liabilities of the Vodafone Disposal Group and UPC DTH as of December 31, 2018 are summarized below. These amounts exclude intercompany assets and liabilities that are eliminated within our consolidated statement of financial position.

	Vodafone Disposal Group	UPC DTH	Total
		in millions	
Property and equipment, net	$ 4,833.3	$ 79.3	$ 4,912.6
Goodwill	3,986.7	—	3,986.7
Intangible assets subject to amortization, net	516.1	0.4	516.5
Other assets, net	221.4	7.4	228.8
Current assets other than cash	348.0	8.4	356.4
Debt and finance lease obligations	(8,425.5)	(37.5)	(8,463.0)
Other non-current liabilities	(1,035.4)	(0.3)	(1,035.7)
Current portion of debt and finance lease obligations	(774.5)	(11.2)	(785.7)
Other accrued and current liabilities	(1,114.2)	(32.5)	(1,146.7)
Net assets	$ (1,444.1)	$ 14.0	$ (1,430.1)

The carrying amounts of the major classes of assets and liabilities of UPC Austria that were classified as held for sale as of December 31, 2017 are summarized below (in millions). These amounts exclude intercompany assets and liabilities that are eliminated within our consolidated statement of financial position.

Property and equipment, net	$ 428.7
Goodwill	732.2
Other assets, net	26.4
Current assets other than cash	29.2
Other non-current liabilities	(77.8)
Current portion of debt and finance lease obligations	(0.8)
Other accrued and current liabilities	(77.7)
Net assets	$ 1,060.2

The operating results of UPC Austria, the Vodafone Disposal Group, UPC DTH and the LiLAC Group for the periods indicated are summarized in the following tables. These amounts exclude intercompany revenue and expenses that are eliminated within our consolidated statements of profit and loss.

	UPC Austria (a)	Vodafone Disposal Group	UPC DTH	Total
		in millions		
Year ended December 31, 2018				
Revenue	$ 252.4	$ 3,584.2	$ 117.0	$ 3,953.6
Operating income	$ 139.0	$ 1,727.8	$ 11.6	$ 1,878.4
Earnings before income taxes	$ 138.7	$ 1,389.3	$ 9.4	$ 1,537.4
Income tax benefit (expense)	(23.3)	(362.8)	7.3	(378.8)
Net earnings	115.4	1,026.5	16.7	1,158.6
Net earnings attributable to noncontrolling interests	(4.2)	—	—	(4.2)
Net earnings attributable to Liberty Global shareholders	$ 111.2	$ 1,026.5	$ 16.7	$ 1,154.4

(a) Includes the operating results of UPC Austria from January 1, 2018 through July 31, 2018, the date UPC Austria was sold.

	UPC Austria	Vodafone Disposal Group	UPC DTH	LiLAC Group	Total
			in millions		
Year ended December 31, 2017					
Revenue	$ 394.9	$ 3,263.0	$ 114.6	$ 3,590.0	$ 7,362.5
Operating income (loss)	$ 150.0	$ 952.5	$ 11.7	$ (156.4)	$ 957.8
Earnings (loss) before income taxes	$ 150.0	$ 427.4	$ 9.7	$ (671.1)	$ (84.0)
Income tax expense	(4.5)	(75.9)	—	(215.9)	(296.3)
Net earnings (loss)	145.5	351.5	9.7	(887.0)	(380.3)
Net loss (earnings) attributable to noncontrolling interests	(6.8)	—	—	21.5	14.7
Net earnings (loss) attributable to Liberty Global shareholders	$ 138.7	$ 351.5	$ 9.7	$ (865.5)	$ (365.6)

Our basic and diluted earnings from discontinued operations attributable to Liberty Global shareholders per Liberty Global Share (as defined in note 13) for 2018 and 2017 is presented below. These amounts relate to the operations of UPC Austria, the Vodafone Disposal Group and UPC DTH. For information regarding the calculation of our weighted average shares outstanding with respect to Liberty Global Shares, see note 3.

	Year ended December 31,	
	2018	2017
Basic and diluted earnings from discontinued operations attributable to Liberty Global shareholders per Liberty Global share	$ 1.48	$ 0.59

Our basic and diluted earnings from discontinued operations attributable to Liberty Global shareholders per LiLAC Share (as defined in note 13) for 2017 is presented below. These amounts relate to the operations of the LiLAC Group.

	Year ended December 31, 2017
Basic and diluted loss attributable to Liberty Global shareholders per share - LiLAC Shares	(5.04)
Weighted average ordinary shares outstanding (LiLAC Shares) - basic and diluted	171,846,133

(7) Non-Current Assets

A summary of our property and equipment, goodwill and intangible assets, net, at December 31, 2018 and 2017, is as follows:

	December 31, 2018	December 31, 2017
	in millions	
Property and equipment, net	$ 12,294.6	$ 17,403.4
Goodwill	13,727.1	18,561.9
Intangible assets subject to amortization, net	2,679.4	3,594.1
Intangible assets not subject to amortization (a)	3.0	3.0
Total	$ 28,704.1	$ 39,562.4

(a) Intangible assets not subject to amortization are included in other assets, net, in our consolidated statements of financial position.

Property and Equipment, Net

At December 31, 2018, the estimated useful life for assets categorized as distribution systems, customer premises equipment and support equipment, buildings and land was 3 to 30 years, 3 to 7 years and 2 to 50 years, respectively. Changes during 2018 in the carrying amounts of our property and equipment, net, are as follows:

	Distribution systems	Customer premises equipment	Support equipment, buildings and land	Total
		in millions		
Cost:				
January 1, 2018	$ 24,106.4	$ 5,617.7	$ 2,840.7	$ 32,564.8
Reclassification to assets held for sale	(6,843.9)	(1,276.8)	(391.0)	(8,511.7)
Additions	1,682.1	915.2	243.4	2,840.7
Acquisitions	57.1	(29.1)	(0.7)	27.3
Retirements and disposals	(532.4)	(641.0)	(338.0)	(1,511.4)
Foreign currency translation adjustments and other	(784.5)	(378.2)	(113.4)	(1,276.1)
December 31, 2018	$ 17,684.8	$ 4,207.8	$ 2,241.0	$ 24,133.6
Accumulated depreciation:				
January 1, 2018	$ (11,269.7)	$ (2,761.7)	$ (1,130.0)	$ (15,161.4)
Reclassification to assets held for sale	3,061.9	624.4	163.5	3,849.8
Depreciation	(1,506.1)	(788.2)	(321.7)	(2,616.0)
Retirements and disposals	531.2	640.8	327.1	1,499.1
Foreign currency translation adjustments and other	407.7	148.1	33.7	589.5
December 31, 2018	$ (8,775.0)	$ (2,136.6)	$ (927.4)	$ (11,839.0)
Property and equipment, net:				
December 31, 2018	$ 8,909.8	$ 2,071.2	$ 1,313.6	$ 12,294.6

Changes during 2017 in the carrying amounts of our property and equipment, net, are as follows:

	Distribution systems	Customer premises equipment	Support equipment, buildings and land	Total
		in millions		
Cost:				
January 1, 2017	$ 20,280.3	$ 4,829.9	$ 2,512.1	$ 27,622.3
Additions	2,322.2	1,186.1	326.6	3,834.9
Acquisitions	46.9	38.2	18.8	103.9
VodafoneZiggo JV transaction	(558.3)	(188.9)	(71.7)	(818.9)
Retirements and disposals	(404.3)	(848.3)	(222.4)	(1,475.0)
Foreign currency translation adjustments and other	2,419.6	600.7	277.3	3,297.6
December 31, 2017	$ 24,106.4	$ 5,617.7	$ 2,840.7	$ 32,564.8
Accumulated depreciation:				
January 1, 2017	$ (8,736.5)	$ (2,365.3)	$ (925.4)	$ (12,027.2)
Depreciation	(2,132.3)	(1,036.0)	(338.9)	(3,507.2)
VodafoneZiggo JV transaction	266.9	92.8	37.1	396.8
Retirements and disposals	403.8	846.1	221.8	1,471.7
Foreign currency translation adjustments and other	(1,071.6)	(299.3)	(124.6)	(1,495.5)
December 31, 2017	$ (11,269.7)	$ (2,761.7)	$ (1,130.0)	$ (15,161.4)
Property and equipment, net:				
December 31, 2017	$ 12,836.7	$ 2,856.0	$ 1,710.7	$ 17,403.4

At December 31, 2018 and 2017, the amount of property and equipment, net, recorded under finance leases was $545.5 million and $729.2 million, respectively. Most of these amounts relate to assets included in our distribution systems category. Depreciation of assets under finance leases is included in cost of services and general and administrative in our consolidated statements of profit or loss.

During 2018 and 2017 , we recorded non-cash increases to our property and equipment related to vendor financing arrangements of $2,175.5 million and $2,635.8 million, respectively, which exclude related VAT of $347.3 million and $419.5 million, respectively, that was also financed by our vendors under these arrangements. In addition, during 2018 and 2017, we recorded non-cash increases to our property and equipment related to assets acquired under finance leases of $102.4 million and $169.8 million, respectively.

Intangible Assets and Goodwill

At December 31, 2018, the estimated useful life for customer relationships, software and other intangibles subject to amortization was 2 to 10 years, 2 to 10 years and 2 to 20 years, respectively. Changes during 2018 in the carrying amounts of our intangible assets and goodwill are as follows:

	Goodwill	Customer relationships	Software	Other	Intangible assets not subject to amortization	Total
			in millions			
Cost:						
January 1, 2018	$ 18,561.9	$ 4,862.4	$ 2,914.1	$ 584.2	$ 3.0	$ 26,925.6
Reclassification to assets held for sale	(4,193.3)	(821.4)	(242.6)	(10.8)	—	(5,268.1)
Additions	—	—	808.8	56.4	—	865.2
Acquisitions and related adjustments	24.3	84.5	0.5	—	—	109.3
Impairments	—	—	(5.0)	—	—	(5.0)
Retirements and disposals	—	(224.0)	(377.2)	(41.7)	—	(642.9)
Foreign currency translation adjustments and other	(665.8)	(228.4)	(138.1)	(30.5)	—	(1,062.8)
December 31, 2018	$ 13,727.1	$ 3,673.1	$ 2,960.5	$ 557.6	$ 3.0	$ 20,921.3
Accumulated amortization:						
January 1, 2018	$ —	$ (3,240.3)	$ (1,277.8)	$ (248.5)	$ —	$ (4,766.6)
Reclassification to assets held for sale	—	494.5	88.4	10.8	—	593.7
Amortization	—	(575.1)	(619.1)	(86.0)	—	(1,280.2)
Retirements and disposals	—	224.0	377.2	41.7	—	642.9
Foreign currency translation adjustments and other		182.7	102.8	12.9	—	298.4
December 31, 2018	$ —	$ (2,914.2)	$ (1,328.5)	$ (269.1)	$ —	$ (4,511.8)
Intangible assets, net:						
December 31, 2018	$ 13,727.1	$ 758.9	$ 1,632.0	$ 288.5	$ 3.0	$ 16,409.5

Changes during 2017 in the carrying amounts of our intangible assets and goodwill are as follows:

	Goodwill	Customer relationships	Software	Other	Intangible assets not subject to amortization	Total
			in millions			
Cost:						
January 1, 2017	$ 17,069.9	$ 5,499.4	$ 2,166.1	$ 500.6	$ 3.0	$ 25,239.0
Additions	—	—	929.9	22.3	—	952.2
Acquisitions and related adjustments	348.8	5.5	—	—	—	354.3
Reclassification to assets held for sale	(721.0)	(30.3)	(65.3)	—	—	(816.6)
Impairments	—	—	(0.2)	—		(0.2)
Retirements and disposals	—	(1,132.6)	(404.6)	(9.5)	—	(1,546.7)
Foreign currency translation adjustments and other	1,864.2	520.4	288.2	70.8	—	2,743.6
December 31, 2017	$ 18,561.9	$ 4,862.4	$ 2,914.1	$ 584.2	$ 3.0	$ 26,925.6
Accumulated amortization:						
January 1, 2017	$ —	$ (3,404.5)	$ (988.9)	$ (159.8)	$ —	$ (4,553.2)
Amortization	—	(665.0)	(602.9)	(71.1)	—	(1,339.0)
Reclassification to assets held for sale	—	28.3	42.5	—	—	70.8
Retirements and disposals	—	1,132.6	404.6	8.7	—	1,545.9
Foreign currency translation adjustments and other	—	(331.7)	(133.1)	(26.3)	—	(491.1)
December 31, 2017	$ —	$ (3,240.3)	$ (1,277.8)	$ (248.5)	$ —	$ (4,766.6)
Intangible assets, net:						
December 31, 2017	$ 18,561.9	$ 1,622.1	$ 1,636.3	$ 335.7	$ 3.0	$ 22,159.0

Amortization of intangible assets is included in general and administrative expenses in our consolidated statements of profit or loss.

The details of the carrying amount of our goodwill as of December 31, 2018 are as follows (in millions):

U.K.	$ 7,393.5
Switzerland	2,903.9
Belgium	2,587.7
Other	842.0
Total	$ 13,727.1

Goodwill and other intangible assets with indefinite useful lives are not amortized, but instead are tested for impairment at least annually. We evaluate the recoverable amount of each of our CGUs, using a fair value less costs to sell method. For each of our CGUs other than Belgium, our estimate of the recoverable amount is based primarily on observable EBITDA multiples for recent transactions and publicly-traded peer companies, which are Level 2 inputs in the fair value hierarchy. With respect to our evaluation of our CGU in Belgium, we compare the carrying value of our investment in Telenet to its fair value based on the quoted market price of Telenet's publicly-traded stock as of the measurement date, which is a Level 1 input in the fair value hierarchy. Based on the results of our 2018 quantitative goodwill impairment assessment, we determined that fair value exceeded carrying value for all of our CGUs.

If, among other factors, (i) our equity values were to decline significantly or (ii) the adverse impacts of economic, competitive, regulatory or other factors were to cause our results of operations or cash flows to be worse than anticipated, we could conclude in future periods that impairment charges are required in order to reduce the carrying values of our goodwill and, to a lesser extent, other non-current assets. Any such impairment charges could be significant.

Land and buildings

The details of our land and buildings are set forth below:

	December 31, 2018	December 31, 2017
	in millions	
Freehold	$ 123.2	$ 224.1
Long leasehold (a)	103.4	79.4
Total	$ 226.6	$ 303.5

(a) Represents property and equipment subject to leases with an initial term of 50 years or more.

(8) Investments

The details of our investments are set forth below:

Accounting Method	December 31, 2018	December 31, 2017
	in millions	
Equity (a):		
VodafoneZiggo JV (b)	$ 3,761.5	$ 4,162.8
Other	234.2	184.6
Total — equity	3,995.7	4,347.4
Fair value:		
ITV plc (**ITV**) — subject to re-use rights	634.2	892.0
ITI Neovision S.A. (**ITI Neovision**)	125.4	161.9
Lions Gate Entertainment Corp (**Lionsgate**)	77.5	163.9
Casa Systems, Inc. (**Casa**)	39.5	76.3
Sumitomo Corporation (**Sumitomo**) (c)	—	776.5
Other	268.6	209.6
Total — fair value	1,145.2	2,280.2
Cost (d)	—	31.2
Total	$ 5,140.9	$ 6,658.8

(a) At December 31, 2018, the carrying amount of our equity method investment in the VodafoneZiggo JV exceeded our proportionate share of that entity's net assets by the amount of the VodafoneZiggo JV Receivable, as defined and described below. The carrying amounts of our other equity method investments did not materially exceed our proportionate share of the respective investee's net assets at December 31, 2018 and 2017.

(b) Amounts include a related-party euro-denominated note receivable (the **VodafoneZiggo JV Receivable**) with a principal amount of $916.1 million and $1,081.9 million, respectively, due from a subsidiary of the VodafoneZiggo JV to a subsidiary of Liberty Global. The VodafoneZiggo JV Receivable bears interest at 5.55% and required €100.0 million ($114.5 million) of principal to be paid annually through December 31, 2019. In this regard, in December 2018, we received a €100.0 million ($114.5 million at the transaction date) principal payment on the VodafoneZiggo JV Receivable. In 2018, the agreement was amended to (i) eliminate the requirement to pay an annual principal payment of €100.0 million in 2019 and (ii) extend the final maturity date from January 16, 2027 to January 16, 2028. The accrued interest on the VodafoneZiggo JV Receivable will be payable in a manner mutually agreed upon by Liberty Global and the VodafoneZiggo JV. During 2018, interest accrued on the VodafoneZiggo JV Receivable was $59.6 million, all of which was cash settled. For information regarding the impact of the adoption of IFRS 15 on our retained earnings and our investment in the VodafoneZiggo JV, see note 2.

(c) At December 31, 2017, we owned 45,652,175 shares of Sumitomo common stock, representing less than 5% of the then outstanding common stock. During 2018, we used all of these shares to settle the outstanding amounts under certain related borrowings.

(d) As a result of the January 1, 2018 adoption of IFRS 9, all of our cost investments have been reclassified to fair value investments.

Equity Method Investments

Details of our equity method investments at December 31, 2018 are set forth below:

	Country of incorporation	Parent ownership %	Group ownership %	Holdings
VodafoneZiggo JV	Netherlands	—%	50.0%	Shares
Other	Various	—%	Various	Various

The following table sets forth the details of our share of results of affiliates, net:

	Year ended December 31, 2018	Year ended December 31, 2017
	in millions	
VodafoneZiggo JV (a)	$ 11.4	$ (70.1)
Other	8.2	(24.0)
Total	$ 19.6	$ (94.1)

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(a) Amounts include the net effect of (i) 100% of the interest income earned on the VodafoneZiggo JV Receivable, (ii) 100% of the share-based compensation expense associated with Liberty Global awards held by VodafoneZiggo JV employees who were formerly employees of Liberty Global, as these awards remain our responsibility, and (iii) our 50% share of the remaining results of operations of the VodafoneZiggo JV.

VodafoneZiggo JV. Each of Liberty Global and Vodafone (each a "**Shareholder**") holds 50% of the issued share capital of the VodafoneZiggo JV. The Shareholders intend for the VodafoneZiggo JV to be funded solely from its net cash flow from operations and third-party financing. We account for our 50% interest in the VodafoneZiggo JV as an equity method investment. We consider the VodafoneZiggo JV to be a related party. For additional information regarding the formation of the VodafoneZiggo JV, see note 6.

In connection with the formation of the VodafoneZiggo JV, the Shareholders entered into a shareholders agreement (the **Shareholders Agreement**). The Shareholders Agreement contains customary provisions for the governance of a 50:50 joint venture that result in Liberty Global and Vodafone having joint control over decision making with respect to the VodafoneZiggo JV.

The Shareholders Agreement also provides (i) for a dividend policy that requires the VodafoneZiggo JV to distribute all unrestricted cash to the Shareholders every two months (subject to the VodafoneZiggo JV maintaining a minimum amount of cash and complying with the terms of its financing arrangements) and (ii) that the VodafoneZiggo JV will be managed with a leverage ratio of between 4.5 and 5.0 times EBITDA (as calculated pursuant to its existing financing arrangements) with the VodafoneZiggo JV undertaking periodic recapitalizations and/or refinancings accordingly.

Each Shareholder has the right to initiate an initial public offering (**IPO**) of the VodafoneZiggo JV after December 31, 2019, with the opportunity for the other Shareholder to sell shares in the IPO on a pro rata basis. Subject to certain exceptions, the Shareholders Agreement prohibits transfers of interests in the VodafoneZiggo JV to third parties until December 31, 2020. After December 31, 2020, each Shareholder will be able to initiate a sale of all of its interest in the VodafoneZiggo JV to a third party and, under certain circumstances, initiate a sale of the entire VodafoneZiggo JV, subject, in each case, to a right of first offer in favor of the other Shareholder.

During the first quarter of 2017, we paid $162.6 million of VAT on behalf of the VodafoneZiggo JV associated with the termination of a services agreement that was in effect prior to the closing of the VodafoneZiggo JV Transaction. This advance was repaid during the first quarter of 2017. In addition, during 2018 and 2017, we received dividend distributions from the VodafoneZiggo JV of $232.5 million and $252.8 million, respectively, which were accounted for as returns on capital for purposes of our consolidated statements of cash flows.

Pursuant to an agreement entered into in connection with the formation of the VodafoneZiggo JV (the **Framework Agreement**), Liberty Global provides certain services to the VodafoneZiggo JV on a transitional or ongoing basis (collectively, the **JV Services**). The JV Services provided by Liberty Global consist primarily of (i) technology and other services and (ii) capital-related expenditures for assets that will be used by, or will otherwise benefit, the VodafoneZiggo JV. Liberty Global charges both fixed and usage-based fees to the VodafoneZiggo JV for the JV Services provided during the term of the Framework Agreement. During 2018 and 2017, we recorded revenue from the VodafoneZiggo JV of $189.1 million and $132.4 million, respectively, primarily related to (a) the JV Services and (b) during 2018, sales of customer premises equipment at a mark-up. In addition, during 2018 and 2017, we purchased certain assets on the VodafoneZiggo JV's behalf with an aggregate cost of $13.1 million and $144.7 million, respectively. At December 31, 2018 and 2017, $24.4 million and $33.3 million, respectively, were due from the VodafoneZiggo JV, primarily related to the aforementioned and certain other transactions. These amounts due from the VodafoneZiggo JV, which are periodically cash settled, are included in other current assets in our consolidated statements of financial position.

The VodafoneZiggo JV is experiencing significant competition. In particular, the mobile operations of the VodafoneZiggo JV continue to experience competitive pressure on pricing, characterized by aggressive promotion campaigns, heavy marketing efforts and increasing or unlimited data bundles. In light of this competition, as well as regulatory and economic factors, we could conclude in future periods that our investment in the VodafoneZiggo JV is impaired or management of the VodafoneZiggo JV could conclude that an impairment of the VodafoneZiggo JV goodwill and, to a lesser extent, non-current assets, is required. Any such impairment of the VodafoneZiggo JV's goodwill or our investment in the VodafoneZiggo JV would be reflected as a component of share of results of affiliates, net, in our consolidated statement of profit or loss. Our share of any such impairment charges could be significant.

The summarized results of operations of the VodafoneZiggo JV are set forth below:

	Year ended December 31,	
	2018	**2017**
	in millions	
Revenue	$ 4,602.2	$ 4,512.5
Depreciation and amortization	$ (1,833.6)	$ (1,678.5)
Interest expense	$ (678.3)	$ (650.1)
Income tax benefit	$ 376.2	$ 103.6
Loss before income taxes	$ (467.8)	$ (362.9)
Net loss	$ (91.6)	$ (259.3)

The summarized financial position of the VodafoneZiggo JV is set forth below:

	December 31, 2018	December 31, 2017
	in millions	
Non-current assets	$ 22,155.7	$ 24,076.8
Current assets (a)	1,099.6	823.4
Total assets	$ 23,255.3	$ 24,900.2
Equity	$ 5,691.5	$ 6,158.1
Non-current liabilities (b)	14,751.5	16,110.4
Current liabilities (c)	2,812.3	2,631.7
Total equity and liabilities	$ 23,255.3	$ 24,900.2

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(a) Amounts include cash and cash equivalents of $274.1 million and $330.0 million, respectively.

(b) Amounts include debt obligations of $12,993.3 million and $13,606.8 million, respectively.

(c) Amounts include debt obligations of $1,381.1 million and $1,143.5 million, respectively.

Fair Value Investments

Details of our fair value investments at December 31, 2018 are set forth below:

	Country of incorporation	Parent ownership %	Group ownership %	Holdings
ITV	U.K.	—%	9.9%	Ordinary shares
ITI Neovision	Poland	—%	17.0%	Shares
Lionsgate	Canada	—%	3.4%	Common shares
Casa	U.S.	—%	5.5%	Common shares
Other	Various	—%	Various	Various

ITV. At December 31, 2018 and 2017, we owned 398,515,510 shares of ITV, a commercial broadcaster in the U.K. Our ITV shares represented less than 10.0% of the total outstanding shares of ITV as of June 30, 2018, the most current publicly-available information. The aggregate purchase price paid to acquire our investment in ITV was financed through borrowings under secured borrowing agreements (the **ITV Collar Loan**). All of the ITV shares we hold are subject to a share collar (the **ITV Collar**) and pledged as collateral under the ITV Collar Loan. Under the terms of the ITV Collar, the counterparty has the right to re-use all of the pledged ITV shares. For additional information regarding the ITV Collar, see note 9.

ITI Neovision. At December 31, 2018 and 2017, we owned a 17.0% interest in ITI Neovision, a privately-held DTH operator in Poland.

Lionsgate. At December 31, 2018 and 2017, we owned 2.5 million voting and 2.5 million non-voting shares of Lionsgate common stock, originally purchased at a price of $39.02 per share, for an investment of $195.1 million. The aggregate purchase price of the Lionsgate shares was financed using working capital, including $70.9 million of cash received pursuant to a variable prepaid forward transaction with respect to 1.25 million of our voting and 1.25 million of our non-voting Lionsgate shares (the **Lionsgate Forward**). At December 31, 2018, our Lionsgate shares represented less than 5% of the total outstanding shares of Lionsgate. For additional information regarding the Lionsgate Forward, see note 9.

Casa. At December 31, 2018 and 2017, we owned 3,005,307 and 4,432,870 shares, respectively, of Casa common stock. Casa is a U.S.-based provider of fixed, mobile, optical and Wi-Fi network software solutions for ultra-broadband services. Our Casa shares represented less than 5.5% of the total outstanding shares of Casa as of October 31, 2018, the most current publicly-available information.

(9) Derivative Instruments

In general, we enter into derivative instruments to protect against (i) increases in the interest rates on our variable-rate debt, (ii) foreign currency movements, particularly with respect to borrowings that are denominated in a currency other than the functional currency of the borrowing entity and (iii) decreases in the market prices of certain publicly traded securities that we own. In this regard, through our subsidiaries, we have entered into various derivative instruments to manage interest rate exposure and foreign currency exposure primarily with respect to the U.S. dollar (**$**), the euro (**€**), the British pound sterling (**£**), the Swiss franc (**CHF**), the Czech koruna (**CZK**), the Hungarian forint (**HUF**), the Polish zloty (**PLN**) and the Romanian lei (**RON**). With the exception of a limited number of our foreign currency forward contracts, we do not apply hedge accounting to our derivative instruments. Accordingly, changes in the fair values of most of our derivative instruments are recorded in realized and unrealized gains or losses on derivative instruments, net, in our consolidated statements of profit or loss.

The following table provides details of the fair values of our derivative instrument assets and liabilities:

	December 31, 2018			December 31, 2017		
	Current (a)	Non-current (a)	Total	Current (a)	Non-current (a)	Total
	in millions					
Assets:						
Cross-currency and interest rate derivative contracts (b)	$ 372.7	$ 1,370.1	$ 1,742.8	$ 558.5	$ 1,171.4	$ 1,729.9
Equity-related derivative instruments (c)	13.9	732.4	746.3	—	560.9	560.9
Foreign currency forward and option contracts	7.2	—	7.2	17.0	0.1	17.1
Other	0.4	—	0.4	0.5	0.6	1.1
Total	$ 394.2	$ 2,102.5	$ 2,496.7	$ 576.0	$ 1,733.0	$ 2,309.0
Liabilities:						
Cross-currency and interest rate derivative contracts (b)	$ 326.5	$ 1,042.2	$ 1,368.7	$ 239.1	$ 1,866.4	$ 2,105.5
Equity-related derivative instruments (c)	1.4	—	1.4	5.4	—	5.4
Foreign currency forward and option contracts	0.5	—	0.5	7.7	0.2	7.9
Other	—	0.1	0.1	—	—	—
Total	$ 328.4	$ 1,042.3	$ 1,370.7	$ 252.2	$ 1,866.6	$ 2,118.8

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(a) Our current derivative liabilities, non-current derivative assets and non-current derivative liabilities are included in other current and accrued liabilities, other assets, net, and other non-current liabilities, respectively, in our consolidated statements of financial position.

(b) We consider credit risk relating to our and our counterparties' nonperformance in the fair value assessment of our derivative instruments. In all cases, the adjustments take into account offsetting liability or asset positions within each of our subsidiary borrowing groups (as defined and described in note 15). The changes in the credit risk valuation adjustments associated with our cross-currency and interest rate derivative contracts resulted in a net loss of $71.1 million during 2018 and a net gain of $168.4 million during 2017. These amounts are included in realized and unrealized gains (losses) on derivative instruments, net, in our consolidated statements of profit or loss. For further information regarding our fair value measurements, see note 10.

(c) Our equity-related derivative instruments primarily include the fair value of (i) the ITV Collar, (ii) the Lionsgate Forward and (iii) at December 31, 2017, the share collar (the **Sumitomo Collar**) with respect to a portion of the shares of Sumitomo held by our company. On May 22, 2018, we settled the final tranche of the Sumitomo Collar and related borrowings with a portion of the existing Sumitomo shares held by our company. The aggregate market value of these shares on the transaction date was $159.3 million. The fair values of the ITV Collar, the Sumitomo Collar and the Lionsgate Forward do not include credit risk valuation adjustments as we assume that any losses incurred by our company in the event of nonperformance by the respective counterparty would be, subject to relevant insolvency laws, fully offset against amounts we owe to such counterparty pursuant to the related secured borrowing arrangements.

The details of our realized and unrealized gains (losses) on derivative instruments, net, are as follows:

	Year ended December 31,	
	2018	2017
	in millions	
Cross-currency and interest rate derivative contracts	$ 905.8	$ (1,145.6)
Equity-related derivative instruments:		
ITV Collar	176.7	215.0
Lionsgate Forward	30.1	(11.4)
Sumitomo Collar	(11.8)	(77.4)
Other	2.5	(3.9)
Total equity-related derivative instruments	197.5	122.3
Foreign currency forward and option contracts	22.7	(30.2)
Other	(0.2)	0.7
Total	$ 1,125.8	$ (1,052.8)

The net cash received or paid related to our derivative instruments is classified as an operating, investing or financing activity in our consolidated statements of cash flows based on the objective of the derivative instrument and the classification of the applicable underlying cash flows. For derivative contracts that are terminated prior to maturity, the cash paid or received upon termination that relates to future periods is classified as a financing activity. The following table sets forth the classification of the net cash inflows (outflows) of our derivative instruments:

	Year ended December 31,	
	2018	2017
	in millions	
Operating activities	$ 244.4	$ 6.8
Investing activities	—	(0.5)
Financing activities	112.8	(138.1)
Total	$ 357.2	$ (131.8)

Counterparty Credit Risk

We are exposed to the risk that the counterparties to the derivative instruments of our subsidiary borrowing groups will default on their obligations to us. We manage these credit risks through the evaluation and monitoring of the creditworthiness of, and concentration of risk with, the respective counterparties. In this regard, credit risk associated with our derivative instruments is spread across a relatively broad counterparty base of banks and financial institutions. With the exception of a limited number of instances where we have required a counterparty to post collateral, neither party has posted collateral under the derivative instruments of our subsidiary borrowing groups. At December 31, 2018, our exposure to counterparty credit risk included derivative assets with an aggregate fair value of $617.3 million.

Each of our subsidiary borrowing groups have entered into derivative instruments under master agreements with each counterparty that contain master netting arrangements that are applicable in the event of early termination by either party to such derivative instrument. The master netting arrangements are limited to the derivative instruments and derivative-related debt instruments, governed by the relevant master agreement within each individual borrowing group and are independent of similar arrangements of our other subsidiary borrowing groups.

Under our derivative contracts, it is generally only the non-defaulting party that has a contractual option to exercise early termination rights upon the default of the other counterparty and to set off other liabilities against sums due upon such termination. However, in an insolvency of a derivative counterparty, under the laws of certain jurisdictions, the defaulting counterparty or its insolvency representatives may be able to compel the termination of one or more derivative contracts and trigger early termination payment liabilities payable by us, reflecting any mark-to-market value of the contracts for the counterparty. Alternatively, or in addition, the insolvency laws of certain jurisdictions may require the mandatory set off of amounts due under such derivative contracts against present and future liabilities owed to us under other contracts between us and the relevant counterparty. Accordingly, it is possible that we may be subject to obligations to make payments, or may have present or future liabilities owed to us partially or fully discharged by set off as a result of such obligations, in the event of the insolvency of a derivative counterparty, even though it is the counterparty that is in default and not us. To the extent that we are required to make such payments, our ability to do so will depend on our liquidity and capital resources at the time. In an insolvency of a defaulting counterparty, we will be an unsecured creditor in respect of any amount owed to us by the defaulting counterparty, except to the extent of the value of any collateral we have obtained from that counterparty.

In addition, where a counterparty is in financial difficulty, under the laws of certain jurisdictions, the relevant regulators may be able to (i) compel the termination of one or more derivative instruments, determine the settlement amount and/or compel, without any payment, the partial or full discharge of liabilities arising from such early termination that are payable by the relevant counterparty or (ii) transfer the derivative instruments to an alternative counterparty.

Details of our Derivative Instruments

Cross-currency Derivative Contracts

We generally match the denomination of our subsidiaries' borrowings with the functional currency of the supporting operations or, when it is more cost effective, we provide for an economic hedge against foreign currency exchange rate movements by using derivative instruments to synthetically convert unmatched debt into the applicable underlying currency. At December 31, 2018, substantially all of our debt was either directly or synthetically matched to the applicable functional currencies of the underlying operations. The following table sets forth the total notional amounts and the related weighted average remaining contractual lives of our cross-currency swap contracts at December 31, 2018:

Borrowing group	Notional amount due from counterparty		Notional amount due to counterparty			Weighted average remaining life
	in millions					in years
Virgin Media	$	400.0	€	339.6		4.0
	$	7,182.9	£	4,759.3	(b)	4.9
	£	2,365.8	$	3,400.0	(a)	6.1
UPC Holding	$	2,420.0	€	1,999.4		5.6
	$	1,200.0	CHF	1,107.5	(b)	6.2
	€	2,057.0	CHF	2,347.9	(b)	5.8
	€	299.2	CZK	8,221.8		1.7
	€	375.5	HUF	105,911.9		3.0
	€	822.9	PLN	3,484.5		2.8
	€	217.2	RON	610.0		3.1
Telenet	$	3,670.0	€	3,243.6	(b)	6.5
	€	1,431.2	$	1,600.0	(a)	6.4

(a) Includes certain derivative instruments that do not involve the exchange of notional amounts at the inception and maturity of the instruments. Accordingly, the only cash flows associated with these derivative instruments are coupon-related payments and receipts. At December 31, 2018, the total U.S. dollar equivalents of the notional amount of these derivative instruments were $4.7 billion.

(b) Includes certain derivative instruments that are "forward-starting," such that the initial exchange occurs at a date subsequent to December 31, 2018. These instruments are typically entered into in order to extend existing hedges without the need to amend existing contracts.

Interest Rate Swap Contracts

The following table sets forth the total U.S. dollar equivalents of the notional amounts and the related weighted average remaining contractual lives of our interest rate swap contracts at December 31, 2018:

	Borrowing group pays fixed rate (a)		Borrowing group receives fixed rate	
Borrowing group	**Notional amount**	**Weighted average remaining life**	**Notional amount**	**Weighted average remaining life**
	in millions	**in years**	**in millions**	**in years**
Virgin Media	$ 17,196.5	3.4	$ 11,043.5	5.2
UPC Holding	$ 5,800.3	4.6	$ 3,992.6	6.8
Telenet	$ 3,853.2	5.2	$ 1,634.1	4.7

(a) Includes forward-starting derivative instruments.

Interest Rate Swap Options

We have entered into various interest rate swap options (**swaptions**), which give us the right, but not the obligation, to enter into certain interest rate swap contracts at set dates in the future, with each such contract having a life of no more than three years. At the transaction date, the strike rate of each of these contracts was above the corresponding market rate. The following table sets forth certain information regarding our swaptions at December 31, 2018:

Borrowing group	**Notional amount**	**Underlying swap currency**	**Weighted average option expiration period (a)**	**Weighted average strike rate (b)**
	in millions		**in years**	
Virgin Media	$ 6,062.5	£	0.9	2.47%
	$ 589.5	€	0.9	2.08%
UPC Holding	$ 1,340.6	CHF	0.1	1.22%

(a) Represents the weighted average period until the date on which we have the option to enter into the interest rate swap contracts.

(b) Represents the weighted average interest rate that we would pay if we exercised our option to enter into the interest rate swap contracts.

Basis Swaps

Our basis swaps involve the exchange of attributes used to calculate our floating interest rates, including (i) the benchmark rate, (ii) the underlying currency and/or (iii) the borrowing period. We typically enter into these swaps to optimize our interest rate profile based on our current evaluations of yield curves, our risk management policies and other factors. The following table sets forth the total U.S. dollar equivalents of the notional amounts and related weighted average remaining contractual lives of our basis swap contracts at December 31, 2018:

Borrowing group	Notional amount due from counterparty (a)	Weighted average remaining life
	in millions	in years
Virgin Media	$ 4,547.1	0.5
UPC Holding	$ 2,640.0	0.4
Telenet	$ 3,675.0	0.3

(a) Includes forward-starting derivative instruments.

Interest Rate Caps and Collars

We enter into interest rate cap and collar agreements that lock in a maximum interest rate if variable rates rise, but also allow our company to benefit, to a limited extent in the case of collars, from declines in market rates. At December 31, 2018, the total U.S. dollar equivalents of the notional amounts of our interest rate caps and collars were $254.9 million and $649.9 million, respectively.

Impact of Derivative Instruments on Borrowing Costs

The impact of the derivative instruments that mitigate our foreign currency and interest rate risk, as described above, on our borrowing costs is as follows:

	Decrease to borrowing costs at December 31, 2018 (a)
Virgin Media	(0.59)%
UPC Holding	(0.06)%
Telenet	(0.63)%
Total decrease to borrowing costs	(0.45)%

(a) Represents the effect of derivative instruments in effect at December 31, 2018 and does not include forward-starting derivative instruments or swaptions.

Foreign Currency Forwards and Options

Certain of our subsidiaries enter into foreign currency forward and option contracts with respect to non-functional currency exposure. As of December 31, 2018, the total U.S. dollar equivalents of the notional amount of foreign currency forward and option contracts was $558.3 million.

Equity-related Derivative Instruments

ITV Collar and Secured Borrowing. The ITV Collar comprises (i) purchased put options exercisable by our company, and (ii) written call options exercisable by the counterparty. The ITV Collar effectively hedges the value of our investment in ITV shares from losses due to market price decreases below the put option price while retaining a portion of the gains from market price increases up to the call option price. The fair value of the ITV Collar as of December 31, 2018 was a net asset of $704.0 million. The ITV Collar has settlement dates ranging from 2020 to 2022.

The ITV Collar and related agreements also provide our company with the ability to borrow against the value of its ITV shares. At December 31, 2018, borrowings under the ITV Collar Loan were secured by all 398,515,510 of our ITV shares, which have been placed into a custody account. The ITV Collar Loan, which has maturity dates consistent with the ITV Collar and contains no financial covenants, provides for customary representations and warranties, events of default and certain adjustment and termination events. Under the terms of the ITV Collar, the counterparty has the right to re-use the pledged ITV shares held in the custody account, but we have the right to recall the shares that are re-used by the counterparty subject to certain costs. In addition, the counterparty retains dividends on the ITV shares that the counterparty would need to borrow from the custody account to hedge its exposure under the ITV Collar (an estimated 400 million shares at December 31, 2018).

Lionsgate Forward and Secured Borrowing. The Lionsgate Forward has economic characteristics similar to a collar plus a loan that is collateralized by a pledge of 1.25 million of our voting and 1.25 million of our non-voting Lionsgate shares (the **Lionsgate Loan**). Under the terms of the Lionsgate Forward, the counterparty does not have the right to re-use the pledged Lionsgate shares without permission from Liberty Global. The Lionsgate Forward effectively hedges the value of our pledged Lionsgate shares from losses due to market price decreases below the put option price while retaining a portion of the gains from market price increases up to the call option price. The fair value of the Lionsgate Forward as of December 31, 2018 was a net asset of $42.2 million. The Lionsgate Forward has settlement dates ranging from July 2019 through March 2022.

For additional information regarding our investments in ITV and Lionsgate see note 8.

(10) Fair Value Measurements

We use the fair value method to account for (i) certain of our investments, (ii) our derivative instruments and (iii) certain instruments that we classify as debt. The reported fair values of these investments and instruments as of December 31, 2018 are unlikely to represent the value that will be paid or received upon the ultimate settlement or disposition of these assets and liabilities.

We use a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three broad levels. Level 1 inputs are quoted market prices in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date. Level 2 inputs are inputs other than quoted market prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs for the asset or liability. We record transfers of assets or liabilities into or out of Levels 1, 2 or 3 at the beginning of the quarter during which the transfer occurred. During 2018, no material transfers were made.

All of our Level 2 inputs (interest rate futures, swap rates and certain of the inputs for our weighted average cost of capital calculations) and certain of our Level 3 inputs (forecasted volatilities and credit spreads) are obtained from pricing services. These inputs, or interpolations or extrapolations thereof, are used in our internal models to calculate, among other items, yield curves, forward interest and currency rates and weighted average cost of capital rates. In the normal course of business, we receive market value assessments from the counterparties to our derivative contracts. Although we compare these assessments to our internal valuations and investigate unexpected differences, we do not otherwise rely on counterparty quotes to determine the fair values of our derivative instruments. The midpoints of applicable bid and ask ranges generally are used as inputs for our internal valuations.

For our investments in publicly-traded companies, the recurring fair value measurements are based on the quoted closing price of the respective shares at each reporting date. Accordingly, the valuations of these investments fall under Level 1 of the fair value hierarchy. Our other investments that we account for at fair value are privately-held companies, and therefore, quoted market prices are unavailable. The valuation technique we use for such investments is a combination of an income approach (discounted cash flow model based on forecasts) and a market approach (market multiples of similar businesses). With the exception of certain inputs for our weighted average cost of capital calculations that are derived from pricing services, the inputs used to value these investments are based on unobservable inputs derived from our assumptions. Therefore, the valuation of our privately-held investments falls under Level 3 of the fair value hierarchy. Any reasonably foreseeable changes in assumed levels of unobservable inputs for the valuations of our Level 3 investments would not be expected to have a material impact on our financial position or results of operations.

The recurring fair value measurement of our equity-related derivative instruments are based on standard option pricing models, which require the input of observable and unobservable variables such as exchange-traded equity prices, risk-free interest rates, dividend forecasts and forecasted volatilities of the underlying equity securities. The valuations of our equity-related derivative instruments are based on a combination of Level 1 inputs (exchange-traded equity prices), Level 2 inputs (interest rate futures and swap rates) and Level 3 inputs (forecasted volatilities). As changes in volatilities could have a significant impact on the overall valuations over the terms of the derivative instruments, we have determined that these valuations fall under Level 3 of the fair value hierarchy. At December 31, 2018, our equity-related derivatives were not significantly impacted by forecasted volatilities.

In order to manage our interest rate and foreign currency exchange risk, we have entered into (i) various derivative instruments and (ii) certain instruments that we classify as debt, as further described in notes 9 and 15, respectively. The recurring fair value measurements of these instruments are determined using discounted cash flow models. With the exception of the inputs for certain swaptions, most of the inputs to these discounted cash flow models consist of, or are derived from, observable Level 2 data for substantially the full term of these instruments. This observable data mostly includes currency rates, interest rate futures and swap rates, which are retrieved or derived from available market data. Although we may extrapolate or interpolate this data, we do not otherwise alter this data in performing our valuations. We use a Monte Carlo based approach to incorporate a credit risk valuation adjustment in our fair value measurements to estimate the impact of both our own nonperformance risk and the nonperformance risk of our counterparties. The inputs used for our credit risk valuations, including our and our counterparties' credit spreads, represent our most significant Level 3 inputs, and these inputs are used to derive the credit risk valuation adjustments with respect to these instruments. As we would not expect these parameters to have a significant impact on the valuations of these instruments, we have determined that these valuations (other than the valuations of the aforementioned swaptions) fall under Level 2 of the fair value hierarchy. Due to the lack of Level 2 inputs for the swaption valuations, we believe these valuations fall under Level 3 of the fair value hierarchy. Our credit risk valuation adjustments with respect to our cross-currency and interest rate swaps are quantified and further explained in note 9.

Fair value measurements are also used in connection with nonrecurring valuations performed in connection with acquisition accounting and impairment assessments. The nonrecurring valuations associated with acquisition accounting primarily include the valuation of reporting units, customer relationship and other intangible assets and property and equipment. The valuation of customer relationships is primarily based on an excess earnings methodology, which is a form of a discounted cash flow analysis. The excess earnings methodology requires us to estimate the specific cash flows expected from the customer relationship, considering such factors as estimated customer life, the revenue expected to be generated over the life of the customer relationship, contributory asset charges and other factors. Tangible assets are typically valued using a replacement or reproduction cost approach, considering factors such as current prices of the same or similar equipment, the age of the equipment and economic obsolescence. Most of our nonrecurring valuations use significant unobservable inputs and therefore fall under Level 3 of the fair value hierarchy. We did not perform significant nonrecurring fair value measurements during 2018 or 2017.

The fair values of financial assets and liabilities, together with the carrying amounts shown in our consolidated statements of financial position are as follows:

	Category under IAS 39 (a)	Category under IFRS 9 (a)	December 31, 2018 Carrying amount	December 31, 2018 Fair value	December 31, 2017 Carrying amount	December 31, 2017 Fair value
			in millions			
Assets carried at fair value:						
Derivative financial instruments	I	III	$ 2,496.7	$ 2,496.7	$ 2,309.0	$ 2,309.0
Investments	I	III	1,145.2	1,145.2	2,280.2	2,280.2
Total assets carried at fair value			$ 3,641.9	$ 3,641.9	$ 4,589.2	$ 4,589.2
Assets carried at cost or amortized cost:						
Investments	II	I	$ 3,969.7	(b)	$ 4,378.6	(b)
Restricted cash	II	I	17.8	$ 17.8	10.5	$ 10.5
Trade receivables, net	II	I	1,342.1	$ 1,342.1	1,540.4	$ 1,540.4
Cash and cash equivalents	II	I	1,480.5	$ 1,480.5	1,672.4	$ 1,672.4
Total assets carried at cost or amortized cost			$ 6,810.1		$ 7,601.9	
Liabilities carried at fair value:						
Debt obligations	I	III	$ 248.6	$ 248.6	$ 965.7	$ 965.7
Derivative financial instruments	I	III	1,370.7	1,370.7	2,118.8	2,118.8
Total liabilities carried at fair value			$ 1,619.3	$ 1,619.3	$ 3,084.5	$ 3,084.5
Liabilities carried at cost or amortized cost:						
Debt obligations	III	I	$ 29,341.3	$ 28,225.2	$40,343.9	$ 40,893.6
Accounts payable	III	I	874.3	874.3	1,046.6	1,046.6
Finance lease obligations	V	I	621.3	621.3	708.5	708.5
Total liabilities carried at cost or amortized cost			$ 30,836.9	$ 29,720.8	$42,099.0	$ 42,648.7

(a) Pursuant to IFRS 9, which was adopted effective January 1, 2018, category I refers to financial assets and liabilities measured at amortized cost, category II refers to financial assets and liabilities measured at fair value through other comprehensive income or loss and category III refers to financial assets and liabilities measured at fair value through profit or loss. Previously, pursuant to International Accounting Standard 39, *Financial Instruments: Recognition and Measurement* (**IAS 39**), category I referred to financial assets and liabilities measured at fair value through profit and loss, classified as held for trading, category II referred to loans and receivables, category III referred to financial liabilities measured at amortized cost and category IV referred to derivative instruments designated as hedging instruments. Category V referred to finance leases outside the scope of IAS 39.

(b) We have not estimated the fair value of our equity method investments and, for 2017, certain investments held at cost.

A reconciliation of the beginning and ending balances of our assets and liabilities measured at fair value on a recurring basis using significant unobservable, or Level 3, inputs is as follows:

	Investments	Cross-currency and interest rate derivative contracts	Equity-related derivative instruments	Total
		in millions		
Balance of net assets at January 1, 2018	$ 371.5	$ 4.5	$ 555.5	$ 931.5
Reclassification to assets held for sale	—	(7.7)	—	(7.7)
Gains (losses) included in loss from continuing operations (a):				
Realized and unrealized gains (losses) on derivative instruments, net	—	(11.5)	197.5	186.0
Realized and unrealized loss due to changes in fair values of certain investments and debt, net	(35.9)	—	—	(35.9)
Impact of IFRS 9	31.9	—	—	31.9
Additions	55.0	0.2	—	55.2
Dispositions	(15.5)	—	—	(15.5)
Final settlement of Sumitomo Collar (b)	—	—	(7.4)	(7.4)
Transfers out of Level 3	(2.0)	—	—	(2.0)
Foreign currency translation adjustments, dividends and other, net	(15.7)	0.4	(0.7)	(16.0)
Balance of net assets (liabilities) at December 31, 2018	$ 389.3	$ (14.1)	$ 744.9	$ 1,120.1

(a) Most of these net gains and losses relate to assets and liabilities that we continue to carry on our consolidated statement of financial position as of December 31, 2018.

(b) For additional information regarding the settlement of the final tranche of the Sumitomo Collar, see note 9.

	Investments	Cross-currency and interest rate derivative contracts	Equity-related derivative instruments	Total
		in millions		
Balance of net assets (liabilities) at January 1, 2017	$ 341.5	$ (10.7)	$ 515.4	$ 846.2
Reclassification to assets held for sale	—	10.7	—	10.7
Gains included in loss from continuing operations (a):				
Realized and unrealized gains on derivative instruments, net	—	4.5	122.3	126.8
Realized and unrealized gains due to changes in fair values of certain investments, net	32.1	—	—	32.1
Partial settlement of Sumitomo Collar (b)	—	—	(85.3)	(85.3)
Transfers out of Level 3	(32.6)	—	—	(32.6)
Dispositions	(17.6)	—	—	(17.6)
Additions	59.8	—	—	59.8
Foreign currency translation adjustments, dividends and other, net	(11.7)	—	3.1	(8.6)
Balance of net assets at December 31, 2017	$ 371.5	$ 4.5	$ 555.5	$ 931.5

(a) Most of these net gains and losses relate to assets and liabilities that we continue to carry on our consolidated statement of financial position as of December 31, 2017.

(b) For additional information regarding the Sumitomo Collar, see note 9.

(11) Income Taxes

Liberty Global files its primary income tax return in the U.K. Its subsidiaries file income tax returns in the U.K., the U.S. and a number of other jurisdictions. The income taxes of Liberty Global and its subsidiaries are presented on a separate return basis for each tax-paying entity or group.

Components of income tax expense consist of:

	Year ended December 31, 2018	Year ended December 31, 2017
	in millions	
Current tax expense:		
Current year	$ (271.6)	$ (192.2)
Adjustments for previous years (a)	(808.3)	—
	(1,079.9)	(192.2)
Deferred tax expense:		
Origination and reversal of temporary differences and tax losses	(397.3)	349.8
Derecognition of deferred tax assets	(34.9)	(342.3)
Changes in tax rates	(15.4)	3.3
	(447.6)	10.8
Income tax expense on continuing operations	$ (1,527.5)	$ (181.4)
Current tax expense	$ (164.5)	$ (409.3)
Deferred tax benefit (expense)	(214.3)	113.0
Income tax expense on discontinuing operations	$ (378.8)	$ (296.3)

(a) Largely due to the Mandatory Repatriation Tax recognized as a result of 2017 U.S. Tax Act.

Income tax amounts recognized in other comprehensive income are set forth in note 24.

Income tax expense attributable to our profit (loss) from continuing operations before income taxes differs from the amounts computed by applying the U.K. corporation tax rate as a result of the following factors:

	Year ended December 31, 2018	Year ended December 31, 2017
	in millions	
Profit (loss) before tax from continuing operations before income taxes	$ 51.0	$ (2,189.7)
Computed "expected" tax benefit (expense) (a)	$ (9.7)	$ 421.5
Mandatory Repatriation Tax (b)	(1,137.2)	—
Basis and other differences in the treatment of items associated with investments in subsidiaries and affiliates	(351.4)	(193.1)
Non-deductible or non-taxable interest and other expenses	(134.0)	(3.4)
Non-deductible or non-taxable foreign currency exchange results	132.5	(233.8)
Recognition of previously unrecognized tax benefits	49.6	4.5
Derecognition of deductible temporary differences	(34.9)	(342.3)
Enacted tax law and rate changes (c)	(15.4)	3.3
International rate differences (d)	(8.7)	135.4
Tax benefit associated with technology innovation	—	12.1
Other, net	(18.3)	14.4
Total income tax expense — continuing operations	$ (1,527.5)	$ (181.4)

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(a) The statutory or "expected" tax rates are the U.K. rates of 19.0% for 2018 and 19.25% for 2017. The 2017 statutory rate represents the blended rate that was in effect for the year ended December 31, 2017 based on the 20.0% statutory rate that was in effect for the first quarter of 2017 and the 19.0% statutory rate that was in effect for the remainder of 2017. During the third quarter of 2016, the U.K. enacted legislation that will reduce the corporate income tax rate in April 2020 to 17.0%.

(b) As further discussed below, the liability we have recorded for the Mandatory Repatriation Tax (as defined and described below) is significantly lower than the amount included in our income tax expense due in part to the expected use of carryforward attributes in the U.S., all of which were not expected to be realized prior to the initial recognition of the Mandatory Repatriation Tax during the first quarter of 2018.

(c) On December 18, 2018, reductions in the corporate income tax rate in the Netherlands were enacted. The rate will be reduced from the current rate of 25.0% to 22.5% in 2020 and 20.5% in 2021. Substantially all of the impact of these rate changes in the Netherlands on our deferred tax balances were recorded during the fourth quarter of 2018. In 2017, a Belgian corporate income tax rate reduction was signed into law. The statutory tax rate will decrease from 33.9% to 29.6% beginning in 2018, and in 2020, this rate will further decrease to 25.0%. Also in 2017, the U.S. corporate income tax rate was reduced from 35.0% to 21.0% effective beginning in 2018. Substantially all of the impacts of both the Belgian and U.S. tax rate changes in Belgium and the U.S. on our deferred tax balances were recorded during the fourth quarter of 2017.

(d) Amounts reflect adjustments (either a benefit or expense) to the "expected" tax benefit (expense) for statutory rates in jurisdictions in which we operate outside of the U.K.

The tax effects of temporary differences that give rise to significant portions of the deferred tax assets and deferred tax liabilities are presented below:

	Net balance at January 1,	Recognized in statement of profit or loss	Acquisitions	Disposition	Exchange difference	Other	Net balance at December 31,	Deferred tax assets	Deferred tax liabilities
					in millions				
2018									
Net operating loss and other carryforwards	$ 1,621.0	$ (561.3)	$ 0.7	$ (204.8)	$ (74.7)	$ 26.0	$ 806.9	$ 806.9	$ —
Investments (including consolidated partnerships)	46.8	14.1	—	—	1.3	(0.4)	61.8	62.8	(1.0)
Debt	18.6	26.8	—	(98.3)	(1.2)	(12.0)	(66.1)	25.2	(91.3)
Property, equipment and intangibles	768.9	173.1	(29.4)	722.8	(94.7)	(13.0)	1,527.7	1,896.2	(368.5)
Derivative instruments	154.3	(99.1)	0.2	(0.6)	(5.7)	10.8	59.9	68.5	(8.6)
Other future deductible (taxable) amounts	(118.1)	(1.2)	(4.0)	17.4	10.8	(33.1)	(128.2)	125.1	(253.3)
Net deferred tax asset	$ 2,491.5	$ (447.6)	$ (32.5)	$ 436.5	$ (164.2)	$ (21.7)	$ 2,262.0	$ 2,984.7	$ (722.7)
2017									
Net operating loss and other carryforwards	$ 1,698.9	$ (314.5)	$ (0.7)	$ (86.2)	$ 216.6	$ 106.9	$ 1,621.0	$ 1,621.0	$ —
Investments (including consolidated partnerships)	(392.5)	158.7	—	315.0	—	(34.4)	46.8	46.7	0.1
Debt	324.8	(257.2)	—	(64.1)	16.7	(1.6)	18.6	103.1	(84.5)
Property, equipment and intangibles	223.4	193.1	51.2	307.5	(2.1)	(4.2)	768.9	2,759.5	(1,990.6)
Derivative instruments	(109.7)	238.9	—	(12.6)	3.1	34.6	154.3	155.4	(1.1)
Other future deductible (taxable) amounts	(68.0)	(3.2)	3.2	(34.5)	(3.7)	(11.9)	(118.1)	417.8	(535.9)
Net deferred tax asset	$ 1,676.9	$ 15.8	$ 53.7	$ 425.1	$ 230.6	$ 89.4	$ 2,491.5	$ 5,103.5	$ (2,612.0)

The tables above include activities from our discontinued operations.

Where there is a right and ability of offset of deferred tax balances within the same jurisdiction, this position is presented net on the face of the group statement of financial position.

Our unrecognized deferred tax assets and tax loss carryforwards at December 31, 2018 are as follows (in millions):

	Amount	Expiration Date
Unrestricted tax losses	$ 3,006.4	Indefinite
Restricted tax losses	476.5	2019-2036
Deductible temporary differences	573.0	
Net deferred tax asset	$ 4,055.9	

We have taxable outside basis differences on certain investments in non-U.S. subsidiaries. For this purpose, the outside basis difference is any difference between the aggregate tax basis in the equity of a consolidated subsidiary and the corresponding amount of the subsidiary's net equity, including cumulative translation adjustments, as determined for financial reporting purposes. This outside basis difference does not include unremitted earnings. At December 31, 2018, we have not provided deferred tax liabilities on an estimated $5.9 billion of cumulative temporary differences on the outside bases of our non-U.S. subsidiaries.

Through our subsidiaries, we maintain a presence in many countries. Many of these countries maintain highly complex tax regimes that differ significantly from the system of income taxation used in the U.K. and the U.S. We have accounted for the effect of these taxes based on what we believe is reasonably expected to apply to us and our subsidiaries based on tax laws currently in effect and reasonable interpretations of these laws.

The Tax Cuts and Jobs Act (the 2017 U.S. Tax Act) was signed into U.S. law on December 22, 2017. Significant changes to the U.S. income tax regime include the imposition of taxes on a one-time deemed mandatory repatriation of earnings and profits of foreign corporations (the **Mandatory Repatriation Tax**) and a new tax on global intangible low-taxed income (the GILTI Tax).

The Mandatory Repatriation Tax requires that the aggregate post -1986 earnings and profits of our foreign corporations be included in our U.S. taxable income. The one-time repatriation of undistributed foreign earnings and profits is then taxed at a rate of 15.5% for cash earnings and 8% for non-cash earnings, both as defined in the 2017 U.S. Tax Act, and is payable, interest free, over an eight period according to a prescribed payment schedule with 45% of the tax due in the last two years. At December 31, 2018, we have recorded a liability for the Mandatory Repatriation Tax of $293.3 million after considering the expected use of carryforward tax attributes and other filing positions.

The GILTI Tax will require our U.S. subsidiaries that are shareholders in foreign corporations to include in their taxable income for each year beginning after December 31, 2017, their pro rata share of global intangible low-taxed income. The GILTI Tax is calculated as the excess of the net foreign corporation income over a deemed return. The GILTI Tax is reported as a period cost when it is incurred.

We and our subsidiaries file consolidated and standalone income tax returns in various jurisdictions. In the normal course of business, our income tax filings are subject to review by various taxing authorities. In connection with such reviews, disputes could arise with the taxing authorities over the interpretation or application of certain income tax rules related to our business in that tax jurisdiction. Such disputes may result in future tax and interest and penalty assessments by these taxing authorities. We have recorded unrecognized tax benefits of $857.8 million and $528.5 million at December 31, 2018 and 2017, respectively. The ultimate resolution of tax contingencies will take place upon the earlier of (i) the settlement date with the applicable taxing authorities in either cash or agreement of income tax positions or (ii) the date when the tax authorities are statutorily prohibited from adjusting the company's tax computations.

(12) Trade Receivables and Unbilled Revenue

The details of our trade receivables and unbilled revenue, net, are set forth below:

	December 31,	
	2018	2017
	in millions	
Trade receivables, gross	$ 1,404.8	$ 1,536.6
Allowance for impairment of trade receivables	(47.2)	(96.7)
Trade receivables, net	1,357.6	1,439.9
Unbilled revenue	139.0	203.8
Trade receivables and unbilled revenue, net	1,496.6	1,643.7
Current trade receivables and unbilled revenue, net	(1,342.1)	(1,540.4)
Non-current trade receivables and unbilled revenue, net	$ 154.5	$ 103.3

The allowance for doubtful accounts is based upon our assessment of probable loss related to uncollectible trade receivable. We use a number of factors in determining the allowance, including, among other things, collection trends, prevailing and anticipated economic conditions and specific customer credit risk. The allowance is maintained until either receipt of payment or the likelihood of collection is considered to be remote.

The detailed aging of trade receivables and the related allowance for impairment as of December 31, 2018 and 2017 are set forth below:

	December 31, 2018		December 31, 2017	
	Trade receivables, gross	Allowance for impairment	Trade receivables, gross	Allowance for impairment
	in millions			
Current portion:				
Days past due:				
Current	$ 705.6	$ (9.7)	$ 799.9	$ (6.7)
1 - 30 days	184.9	0.4	371.3	(8.7)
31 - 90 days	156.9	(8.9)	100.5	(9.6)
Over 90 days	201.5	(27.6)	160.8	(71.1)
Total	1,248.9	(45.8)	1,432.5	(96.1)
Non-current portion	155.9	(1.4)	104.1	(0.6)
Total trade receivables	$ 1,404.8	$ (47.2)	$ 1,536.6	$ (96.7)

The following table shows the development of the current portion of the allowance for impairment of trade receivables:

	2018	2017
	in millions	
Allowance at January 1	$ 96.1	$ 193.4
Reclassification to assets held for sale	(21.9)	(2.0)
Provisions for impairment of trade receivables	53.0	67.2
Write-off of receivable	(97.0)	(66.8)
Acquisitions	(1.4)	1.5
Impact of the Split-off Transaction	—	(116.1)
Foreign currency translation and other	17.0	18.9
Allowance at December 31	$ 45.8	$ 96.1

When a trade receivable is determined to be uncollectible, it is written off against the allowance account. The provision for impairment of trade receivables is included in facilities and other operational costs in our consolidated statements of profit or loss.

(13) Equity

Capitalization

At December 31, 2018, our authorized share capital consisted of an aggregate nominal amount of $20.0 million, consisting of any of the following: (i) ordinary shares (Class A, B or C), each with a nominal value of $0.01 per share, (ii) preference shares, with a nominal value to be determined by the board of directors, the issuance of one or more classes or series of which as may be authorized by the board of directors, and (iii) any other shares of one or more classes as may be determined by the board of directors or by the shareholders of Liberty Global. For the period beginning July 1, 2015 through the December 29, 2017 completion of the Split-off Transaction, our share capital included (a) our Class A, Class B and Class C Liberty Global ordinary shares (collectively referred to herein as "**Liberty Global Shares**") and (b) our LiLAC Class A, Class B and Class C ordinary shares (collectively referred to herein as "**LiLAC Shares**"). The LiLAC Shares were tracking shares intended to track the economic performance of the LiLAC Group. Pursuant to the Split-off Transaction, the LiLAC Shares were redesignated as deferred shares (which had virtually no economic rights), transferred to a third party and cancelled.

Under Liberty Global's Articles of Association, effective July 1, 2015, holders of Liberty Global Class A ordinary shares are entitled to one vote for each such share held, and holders of Liberty Global Class B ordinary shares are entitled to 10 votes for each such share held, on all matters submitted to a vote of Liberty Global shareholders at any general meeting (annual or special). Holders of Liberty Global Class C ordinary shares are not entitled to any voting powers except as required by law.

At the option of the holder, each Liberty Global Class B ordinary share is convertible into one Liberty Global Class A ordinary share. One Liberty Global Class A ordinary share is reserved for issuance for each Liberty Global Class B ordinary share that is issued (11,099,593 shares issued as of December 31, 2018). Additionally, at December 31, 2018, we have reserved the following ordinary shares for the issuance of outstanding share-based compensation awards.

	Liberty Global Shares (a)	
	Class A	Class C
Options	580,254	2,667,506
SARs	15,308,562	34,401,980
PSUs, PGUs and RSUs	3,487,018	6,976,788

(a) Includes share-based compensation awards held by former employees of Liberty Global that became employees of Liberty Latin America as a result of the Split-off Transaction. For additional information, see note 14.

Subject to any preferential rights of any outstanding class of our preference shares, the holders of our ordinary shares are entitled to dividends as may be declared from time to time by our board of directors from funds available therefore. Except with respect to share distributions, whenever a dividend is paid in cash to the holder of one class of our ordinary shares, we shall also pay to the holders of the other classes of our ordinary shares an equal per share dividend. There are currently no contractual restrictions on our ability to pay dividends in cash or shares.

In the event of our liquidation, dissolution and winding up, after payment or provision for payment of our debts and liabilities and subject to the prior payment in full of any preferential amounts to which our preference shareholders, if any, may be entitled, the holders of our ordinary shares will be entitled to receive their proportionate interests, expressed in liquidation units, in any assets available for distribution to our ordinary shares.

A summary of the changes in our share capital during 2017 is set forth in the table below:

	Liberty Global Shares				LiLAC Shares (a)			
	Class A	Class B	Class C	Total	Class A	Class B	Class C	Total
				in millions				
Balance at January 1, 2017	2.5	0.1	6.3	8.9	0.5	—	1.2	1.7
Impact of the Split-off Transaction	—	—	—	—	(0.5)	—	(1.2)	(1.7)
Repurchase and cancellation of Liberty Global Shares	(0.3)	—	(0.5)	(0.8)	—	—	—	—
Balance at December 31, 2017	$ 2.2	$ 0.1	$ 5.8	$ 8.1	$ —	$ —	$ —	$ —

(a) In connection with the Split-off Transaction, the LiLAC Shares were redesignated as deferred shares (with virtually no economic rights), transferred to a third party and cancelled. For additional information regarding the Split-off Transaction, see note 6.

Share Repurchase Programs

As a U.K. incorporated company, we may only elect to repurchase shares or pay dividends to the extent of our "Distributable Reserves." Distributable Reserves, may be created through the earnings of the U.K. parent company and, among other methods, through a reduction in share premium approved by the English Companies Court. Based on the amounts set forth in our parent company statement of equity, our Distributable Reserves were $20.7 billion as of December 31, 2018. For additional information, see note 6 to our parent company financial statements.

Our board of directors has approved share repurchase programs for our Liberty Global Shares. In addition, from November 2016 through the completion of the Split-off Transaction, we were authorized to repurchase our LiLAC Shares. Under these plans, we receive authorization to acquire up to the specified amount (before direct acquisition costs) of Class A and Class C Liberty Global Shares or LiLAC Shares, or other authorized securities, from time to time through open market or privately negotiated transactions, which may include derivative transactions. The timing of the repurchase of shares or other securities pursuant to our equity repurchase programs, which may be suspended or discontinued at any time, is dependent on a variety of factors, including market conditions. In July 2018, our board of directors authorized an additional $500.0 million of share repurchases through July 2019. As of December 31, 2018, the remaining amount authorized for share repurchases was $566.2 million.

The following table provides details of our share repurchases during 2018 and 2017:

	Class A ordinary shares		Class C ordinary shares		
	Shares repurchased	Average price paid per share (a)	Shares repurchased	Average price paid per share (a)	Total cost (a)
					in millions
Liberty Global Shares:					
2018	15,649,900	$ 29.67	54,211,059	$ 28.51	$ 2,010.0
2017	34,881,510	$ 33.73	52,523,651	$ 32.71	$ 2,894.7
LiLAC Shares:					
2017	2,062,233	$ 22.84	285,572	$ 22.25	$ 53.5

(a) Includes direct acquisition costs, where applicable.

Subsidiary Distributions

From time to time, Telenet and certain other of our subsidiaries make cash distributions to their respective shareholders. Our share of these distributions is eliminated in consolidation and the noncontrolling interest owners' share of these distributions is reflected as a charge against noncontrolling interests in our consolidated statements of equity. In this regard, in August 2018, Telenet declared a €600.0 million dividend to its shareholders. Our share of this dividend, which was financed with additional borrowings under the Telenet Credit Facility and paid on October 4, 2018, was €351.6 million ($404.8 million at the payment date).

Restricted Net Assets

The ability of certain of our subsidiaries to distribute or loan all or a portion of their net assets to our company is limited by the terms of applicable debt facilities. At December 31, 2018, substantially all of our net assets represented net assets of our subsidiaries that were subject to such limitations.

Nature and Purpose of Reserves

Merger Reserve

The merger reserve includes the premium on shares issued in connection with certain acquisitions and the premium on shares distributed in connection with the Split-off Transaction. See notes 5 and 6 for further information acquisitions and the Split-off Transaction, respectively.

Capital Redemption Reserve

The capital redemption reserve comprises the nominal value of our cumulative purchased and cancelled shares.

Foreign Currency Translation Reserve

The foreign currency translation reserve comprises all foreign currency differences arising from the translation of the financial statements of foreign operations.

Other Reserves

Other reserves are primarily used to record the effective portion of changes in the fair value of our cash flow hedges and the subsequent reclassification into our consolidated statement of profit or loss when the hedged transaction affects earnings.

(14) Share-based Compensation

Our share-based compensation expense primarily relates to the share-based incentive awards issued by Liberty Global to its employees and employees of its subsidiaries. A summary of our aggregate share-based compensation expense that is included in our cost of services and G&A expenses is set forth below:

	Year ended December 31, 2018	Year ended December 31, 2017
	in millions	
Liberty Global:		
Performance-based incentive awards (a)	$ 50.8	$ 23.9
Non-performance based share-based incentive awards	90.0	110.0
Other (b)	43.4	13.7
Total Liberty Global	184.2	147.6
Telenet share-based incentive awards (c)	19.6	20.7
Other	2.1	10.1
Total	$ 205.9	$ 178.4
Included in:		
Cost of services	$ 4.4	$ 5.2
G&A expenses	201.5	173.2
Total	$ 205.9	$ 178.4

(a) Includes share-based compensation expense related to (i) PSUs and (ii) through March 2017, the PGUs held by our Chief Executive Officer.

(b) Represents annual incentive compensation and defined contribution plan liabilities that have been or are expected to be settled with Liberty Global ordinary shares. In the case of the annual incentive compensation, shares will be issued to senior management and key employees pursuant to a shareholding incentive program that was implemented in the fourth quarter of 2017. The shareholding incentive program allows these employees to elect to receive up to 100% of their annual incentive compensation in ordinary shares of Liberty Global in lieu of cash.

(c) Represents the share-based compensation expense associated with Telenet's share-based incentive awards, which, at December 31, 2018, included performance- and non-performance-based stock option awards with respect to 4,494,002 Telenet shares. These stock option awards had a weighted average exercise price of €42.50 ($48.67).

As of December 31, 2018, $246.7 million of total unrecognized compensation cost related to our Liberty Global share-based compensation awards is expected to be recognized by our company over a weighted-average period of approximately 2.1 years.

The following table summarizes certain information related to the share-based incentive awards granted and exercised with respect to Liberty Global ordinary shares (includes amounts related to awards held by employees of our discontinued operations, unless otherwise noted):

	Year ended December 31,	
	2018	2017
Assumptions used to estimate fair value of options and SARs granted:		
Risk-free interest rate	2.68 - 2.92%	1.66 - 2.16%
Expected life	3.0 - 4.2 years	3.0 - 6.4 years
Expected volatility	30.2 - 33.6%	25.9 - 37.9%
Expected dividend yield	none	none
Weighted average grant-date fair value per share of awards granted:		
Options	$ 8.99	$ 9.40
SARs	$ 7.92	$ 8.60
RSUs	$ 28.72	$ 31.24
PSUs	$ 23.60	$ 26.59
Total intrinsic value of awards exercised (in millions):		
Options	$ 3.8	$ 13.4
SARs	$ 22.5	$ 74.8
Cash received from exercise of options (in millions)	$ 5.7	$ 11.7
Income tax benefit related to share-based compensation of our continuing operations (in millions)	$ 18.6	$ 9.8

Share Incentive Plans — Liberty Global Ordinary Shares

Incentive Plans

As of December 31, 2018, we are authorized to grant incentive awards under the Liberty Global 2014 Incentive Plan and the Liberty Global 2014 Nonemployee Director Incentive Plan. Generally, we may grant non-qualified share options, SARs, restricted shares, RSUs, cash awards, performance awards or any combination of the foregoing under either of these incentive plans (collectively, awards). Ordinary shares issuable pursuant to awards made under these incentive plans will be made available from either authorized but unissued shares or shares that have been issued but reacquired by our company. Awards may be granted at or above fair value in any class of ordinary shares. The maximum number of Liberty Global ordinary shares with respect to which awards may be issued under the Liberty Global 2014 Incentive Plan and the Liberty Global 2014 Nonemployee Director Incentive Plan is 105 million (of which no more than 50.25 million shares may consist of Class B ordinary shares) and 10.5 million, respectively, in each case, subject to anti-dilution and other adjustment provisions in the respective plan. As of December 31, 2018, the Liberty Global 2014 Incentive Plan and the Liberty Global 2014 Nonemployee Director Incentive Plan had 46,220,904 and 9,108,222 ordinary shares available for grant, respectively.

Awards (other than performance-based awards) under the Liberty Global 2014 Incentive Plan generally (i) vest 12.5% on the six month anniversary of the grant date and then vest at a rate of 6.25% each quarter thereafter and (ii) expire seven years after the grant date. Awards (other than RSUs) issued under the Liberty Global 2014 Nonemployee Director Incentive Plan generally vest in three equal annual installments, provided the director continues to serve as director immediately prior to the vesting date, and expire seven years after the grant date. RSUs vest on the date of the first annual general meeting of shareholders following the grant date. These awards may be granted at or above fair value in any class of ordinary shares.

Performance Awards

The following is a summary of the material terms and conditions with respect to our performance-based awards for certain executive officers and key employees.

Liberty Global PSUs

In March 2015, our compensation committee approved the grant of PSUs to executive officers and key employees (the **2015 PSUs**). The performance plan for the 2015 PSUs covered a two-year period that ended on December 31, 2016 and included a performance target based on the achievement of a specified compound annual growth rate (**CAGR**) in a consolidated Adjusted EBITDA metric (as defined in note 18). The performance target was adjusted for events such as acquisitions, dispositions and changes in foreign currency exchange rates that affect comparability (**Adjusted EBITDA CAGR**), and the participant's annual performance ratings during the two-year performance period. Participants earned 99.5% of their targeted awards under the 2015 PSUs, which vested 50% on each of April 1 and October 1 of 2017.

In February 2016, our compensation committee approved the grant of PSUs to executive officers and key employees (the **2016 PSUs**) pursuant to a performance plan that is based on the achievement of a specified Adjusted EBITDA CAGR during the three-year period ending December 31, 2018. The 2016 PSUs, as adjusted through the 2017 Award Modification, require delivery of compound annual growth rates of consolidated Adjusted EBITDA CAGR of 6.0% during the three-year performance period for Liberty Global or Liberty Latin America depending on the respective class of shares underlying the award, with over- and under-performance payout opportunities should the Adjusted EBITDA CAGR exceed or fail to meet the target, as applicable. The performance payout may be adjusted at the compensation committee's discretion for events that may affect comparability, such as changes in foreign currency exchange rates and accounting principles or policies. The 2016 PSUs will vest 50% on each of April 1, 2019 and October 1, 2019.

During 2018, the compensation committee of our board of directors approved the grant of PSUs to executive officers and key employees (the **2018 PSUs**) pursuant to a performance plan that is based on the achievement of a specified Adjusted EBITDA CAGR during the two-year period ending December 31, 2019. The 2018 PSUs include over- and under-performance payout opportunities should the Adjusted EBITDA CAGR exceed or fail to meet the target, as applicable. A performance range of 50% to 125% of the target Adjusted EBITDA CAGR will generally result in award recipients earning 50% to 150% of their target 2018 PSUs, subject to reduction or forfeiture based on individual performance. The earned 2018 PSUs will vest 50% on April 1, 2020 and 50% on October 1, 2020. The target Adjusted EBITDA CAGR for the 2018 PSUs was determined on October 26, 2018 and, accordingly, associated compensation expense has been recognized prospectively from that date.

Liberty Global Performance Grant Award

Effective April 30, 2014, our compensation committee authorized the grant of PGUs to our Chief Executive Officer, comprising a total of one million PGUs with respect to our then outstanding Liberty Global Class A ordinary shares and one million PGUs with respect to our then outstanding Liberty Global Class B ordinary shares. The PGUs, which were subject to a performance condition that was achieved in 2014, vested in three equal annual installments beginning on March 15, 2015. Our Chief Executive Officer also received 41,589 PGUs with respect to each Class A and Class B LiLAC Shares as a result of the LiLAC Distribution in 2016 and 33,333 PGUs with respect to each Class A and Class B LiLAC Shares as a result of the impact of the July 1, 2015 distribution of LiLAC Shares in 2015. As of March 31, 2017, all PGUs were fully vested.

Share-based Award Activity — Liberty Global Ordinary Shares

The following tables summarize the share-based award activity during 2018 with respect to awards issued by Liberty Global:

Options — Class A ordinary shares	Number of awards	Weighted average exercise price	Weighted average remaining contractual term	Aggregate intrinsic value
			in years	in millions
Outstanding at January 1, 2018	580,481	$ 25.54		
Granted	71,469	$ 30.14		
Forfeited	(1,713)	$ 22.43		
Exercised	(69,983)	$ 13.97		
Outstanding at December 31, 2018	580,254	$ 27.51	3.7	$ 1.4
Exercisable at December 31, 2018	417,608	$ 26.26	2.9	$ 1.4

Options — Class C ordinary shares	Number of awards	Weighted average exercise price	Weighted average remaining contractual term	Aggregate intrinsic value
			in years	in millions
Outstanding at January 1, 2018	2,725,566	$ 25.58		
Granted	770,691	$ 24.82		
Forfeited	(591,662)	$ 30.07		
Exercised	(237,089)	$ 17.49		
Outstanding at December 31, 2018	2,667,506	$ 25.09	2.9	$ 3.9
Exercisable at December 31, 2018	2,161,408	$ 24.16	2.3	$ 3.9

SARs — Class A ordinary shares	Number of awards	Weighted average base price	Weighted average remaining contractual term	Aggregate intrinsic value
			in years	in millions
Outstanding at January 1, 2018	13,524,075	$ 32.72		
Granted	3,286,731	$ 29.81		
Forfeited	(898,390)	$ 34.77		
Exercised	(603,854)	$ 21.75		
Outstanding at December 31, 2018	15,308,562	$ 32.41	3.7	$ 0.7
Exercisable at December 31, 2018	9,837,206	$ 32.38	2.7	$ 0.7

SARs — Class C ordinary shares	Number of awards	Weighted average base price	Weighted average remaining contractual term	Aggregate intrinsic value
			in years	in millions
Outstanding at January 1, 2018	31,305,136	$ 30.60		
Granted	6,573,462	$ 28.86		
Forfeited	(1,797,629)	$ 33.54		
Exercised	(1,678,989)	$ 20.35		
Outstanding at December 31, 2018	34,401,980	$ 30.61	3.5	$ 2.2
Exercisable at December 31, 2018	23,452,476	$ 30.21	2.4	$ 2.2

RSUs — Class A ordinary shares	Number of awards	Weighted average grant-date fair value per share	Weighted average remaining contractual term
			in years
Outstanding at January 1, 2018	511,061	$ 35.81	
Granted	370,355	$ 29.36	
Forfeited	(59,319)	$ 35.04	
Released from restrictions	(239,723)	$ 35.66	
Outstanding at December 31, 2018	582,374	$ 31.85	2.4

RSUs — Class C ordinary shares	Number of awards	Weighted average grant-date fair value per share	Weighted average remaining contractual term
			in years
Outstanding at January 1, 2018	1,007,313	$ 34.60	
Granted	740,710	$ 28.40	
Forfeited	(118,764)	$ 28.17	
Released from restrictions	(466,908)	$ 35.33	
Outstanding at December 31, 2018	1,162,351	$ 31.02	2.4

PSUs and PGUs — Class A ordinary shares	Number of awards	Weighted average grant-date fair value per share	Weighted average remaining contractual term
			in years
Outstanding at January 1, 2018	1,934,795	$ 31.00	
Granted	1,177,392	$ 24.01	
Forfeited	(206,110)	$ 30.20	
Released from restrictions	(1,433)	$ 37.45	
Outstanding at December 31, 2018	2,904,644	$ 28.22	1.2

PSUs — Class C ordinary shares	Number of awards	Weighted average grant-date fair value per share	Weighted average remaining contractual term
			in years
Outstanding at January 1, 2018	3,875,732	$ 30.01	
Granted	2,354,784	$ 23.39	
Forfeited	(413,213)	$ 29.21	
Released from restrictions	(2,866)	$ 36.32	
Outstanding at December 31, 2018	5,814,437	$ 27.39	1.2

Share-based Award Activity — Liberty Global Ordinary Shares Held by Former Liberty Global Employees

The following tables summarize the share-based awards issued by Liberty Global held by former employees of the company that became employees of Liberty Latin America as a result of the Split-off Transaction. We do not recognize share-based compensation expense with respect to these awards.

	Number of awards	Weighted Average exercise or base price	Weighted Average remaining contractual term	Aggregate intrinsic value
Options and SARs:				
Class A				
Outstanding	1,198,985	$ 32.74	2.9	$ 0.1
Exercisable	1,017,362	$ 32.26	2.6	$ 0.1
Class C				
Outstanding	2,819,203	$ 30.54	2.7	$ 0.3
Exercisable	2,455,257	$ 29.98	2.4	$ 0.3

	Number of awards	Weighted Average grant date fair value per share	Weighted Average remaining contractual term
Outstanding RSUs and PSUs:			
Class A			
RSUs	9,426	$ 36.73	1.4
PSUs	172,429	$ 30.29	0.8
Class C			
RSUs	18,882	$ 36.44	1.4
PSUs	345,210	$ 29.32	0.8

(15) Debt and Finance Lease Obligations

Debt

The U.S. dollar equivalents of the components of our debt are as follows:

	December 31, 2018				
		Unused borrowing capacity (b)		Principal amount	
				December 31,	
	Weighted average interest rate (a)	Borrowing currency	U.S. $ equivalent	2018	2017
			in millions		
Continuing operations:					
VM Senior Secured Notes	5.40%	—	$ —	$ 6,268.3	$ 6,565.6
VM Credit Facilities (c)	4.72%	(d)	860.3	4,600.5	4,676.2
VM Senior Notes	5.54%	—	—	1,999.9	3,000.1
Telenet Credit Facility	3.76%	(e)	509.6	3,145.7	2,177.6
Telenet Senior Secured Notes	4.69%	—	—	1,687.1	1,721.3
Telenet SPE Notes	4.88%	—	—	546.2	937.7
UPCB SPE Notes (f)	4.54%	—	—	2,445.5	2,582.6
UPC Holding Bank Facility (f)	4.96%	€ 990.1	1,133.9	1,645.0	2,576.1
UPC Holding Senior Notes (f)	4.59%	—	—	1,215.5	1,313.4
Vendor financing (g)	4.18%	—	—	3,620.3	3,593.1
ITV Collar Loan	0.90%	—	—	1,379.6	1,463.8
Derivative-related debt instruments (h)	3.37%	—	—	301.9	361.5
Sumitomo Share Loan (i)	—	—	—	—	621.7
Sumitomo Collar Loan	—	—	—	—	169.1
Other (j)	5.27%	—	—	459.8	418.2
Total — continuing operations	4.56%		2,503.8	29,315.3	32,178.0
Discontinued operations:					
Unitymedia Notes	—	—	—	—	5,465.2
Unitymedia Credit Facilities	—	—	—	—	2,696.8
Vendor financing	—	—	—	—	446.6
Derivative-related debt instruments (h)	—	—	—	—	231.0
Total — discontinued operations	—		—	—	8,839.6
Total debt before deferred financing costs, discounts, premiums and accrued interest (k)	4.56%		$ 2,503.8	$ 29,315.3	$ 41,017.6

The following table provides a reconciliation of total debt before deferred financing costs, discounts, premiums and accrued interest to total debt and finance lease obligations:

	December 31,	
	2018	2017
	in millions	
Total debt before deferred financing costs, discounts, premiums and accrued interest	$ 29,315.3	$ 41,017.6
Deferred financing costs, discounts, premiums and accrued interest, net	274.6	292.0
Total carrying amount of debt	29,589.9	41,309.6
Finance lease obligations (l)	621.3	708.5
Total debt and finance lease obligations	30,211.2	42,018.1
Current maturities of debt and finance lease obligations	(4,021.2)	(4,647.0)
Non-current debt and finance lease obligations	$ 26,190.0	$ 37,371.1

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(a) Represents the weighted average interest rate in effect at December 31, 2018 for all borrowings outstanding pursuant to each debt instrument, including any applicable margin. The interest rates presented represent stated rates and do not include the impact of derivative instruments, deferred financing costs, original issue premiums or discounts and commitment fees, all of which affect our overall cost of borrowing. Including the effects of derivative instruments, original issue premiums or discounts and commitment fees, but excluding the impact of deferred financing costs, our weighted average interest rate on our aggregate variable- and fixed-rate indebtedness was 4.31% at December 31, 2018. For information regarding our derivative instruments, see note 9.

(b) Unused borrowing capacity represents the maximum availability under the applicable facility at December 31, 2018 without regard to covenant compliance calculations or other conditions precedent to borrowing. At December 31, 2018, based on the most restrictive applicable leverage covenants, the full amount of unused borrowing capacity was available to be borrowed under each of the respective subsidiary facilities, and based on the most restrictive applicable leverage-based restricted payment tests, there were no restrictions on the respective subsidiary's ability to make loans or distributions from this availability to Liberty Global or its subsidiaries or other equity holders. Upon completion of the relevant December 31, 2018 compliance reporting requirements, we expect that the full amount of unused borrowing capacity will continue to be available and that there will be no restrictions with respect to loans or distributions. Our above expectations do not consider any actual or potential changes to our borrowing levels or any amounts loaned or distributed subsequent to December 31, 2018.

(c) Amounts include £41.9 million ($53.4 million) and £43.6 million ($55.6 million) at December 31, 2018 and 2017, respectively, of borrowings pursuant to excess cash facilities under the VM Credit Facilities. These borrowings are owed to certain non-consolidated special purpose financing entities that have issued notes to finance the purchase of receivables due from Virgin Media to certain other third parties for amounts that Virgin Media and its subsidiaries have vendor financed. To the extent that the proceeds from these notes exceed the amount of vendor financed receivables available to be purchased, the excess proceeds are used to fund these excess cash facilities.

(d) Unused borrowing capacity under the VM Credit Facilities relates to multi-currency revolving facilities with an aggregate maximum borrowing capacity equivalent to £675.0 million ($860.3 million). During 2018, the VM Revolving Facility was amended and split into two revolving facilities. As of December 31, 2018, VM Revolving Facility A was a multi-currency revolving facility maturing on December 31, 2021 with a maximum borrowing capacity equivalent to £50.0 million ($63.7 million), and VM Revolving Facility B was a multi-currency revolving facility maturing on January 15, 2024 with a maximum borrowing capacity equivalent to £625.0 million ($796.6 million). All other terms from the previously existing VM Revolving Facility continue to apply to the new revolving facilities.

(e) Unused borrowing capacity under the Telenet Credit Facility comprises (i) €400.0 million ($458.1 million) under Telenet Facility AG, (ii) €25.0 million ($28.6 million) under the Telenet Overdraft Facility and (iii) €20.0 million ($22.9 million) under the Telenet Revolving Facility, each of which were undrawn at December 31, 2018.

(f) Subsequent to December 31, 2018, we entered into an agreement to sell our operations in Switzerland. For information regarding the potential impact on the outstanding debt of the UPC Holding borrowing group, see note 28.

(g) Represents amounts owed pursuant to interest-bearing vendor financing arrangements that are used to finance certain of our property and equipment additions and, to a lesser extent, certain of our operating expenses. These obligations are generally due within one year and include VAT that was paid on our behalf by the vendor. Our operating expenses for 2018 and 2017 include $1,653.1 million and $1,192.5 million, respectively, that were financed by an intermediary and are reflected as a hypothetical cash outflow within net cash provided by operating activities and a hypothetical cash inflow within net cash used by financing activities in our consolidated statements of cash flows. During 2018 and 2017, aggregate payments of $1,372.3 million and $668.8 million, respectively, were made under operating-related vendor financing arrangements. In addition, during 2018 and 2017, aggregate payments of $2,319.7 million and $1,726.3 million, respectively, were made under capital-related vendor financing arrangements. Repayments of vendor financing obligations are included in repayments and repurchases of debt and finance lease obligations in our consolidated statements of cash flows.

(h) Represents amounts associated with certain derivative-related borrowing instruments, including $248.6 million and $344.0 million at December 31, 2018 and 2017, respectively, carried at fair value. These instruments mature at various dates through January 2025. For information regarding fair value hierarchies, see note 10.

(i) In August 2018, we settled the outstanding amount under the Sumitomo Share Loan with the remaining shares of Sumitomo that were held by our company.

(j) Amounts include $225.9 million and $160.9 million at December 31, 2018 and 2017, respectively, of debt collateralized by certain trade receivables of Virgin Media.

(k) As of December 31, 2018 and 2017, our debt had an estimated fair value of $28.5 billion and $41.9 billion, respectively. The estimated fair values of our debt instruments are generally determined using the average of applicable bid and ask prices (mostly Level 1 of the fair value hierarchy) or, when quoted market prices are unavailable or not considered indicative of fair value, discounted cash flow models (mostly Level 2 of the fair value hierarchy). The discount rates used in the cash flow models are based on the market interest rates and estimated credit spreads of the applicable entity, to the extent available, and other relevant factors. For additional information regarding fair value hierarchies, see note 10.

(l) The U.S. dollar equivalents of our consolidated finance lease obligations are as follows:

	December 31,	
	2018	2017
	in millions	
Continuing operations:		
Telenet (1)	$ 475.2	$ 456.1
Virgin Media	69.1	79.1
UPC Holding	29.9	35.9
Other subsidiaries	47.1	67.2
Total — continuing operations	621.3	638.3
Discontinued operations	—	70.2
Total	$ 621.3	$ 708.5

(1) At December 31, 2018 and 2017, Telenet's finance lease obligations included €390.6 million ($447.3 million) and €361.8 million ($414.3 million), respectively, associated with Telenet's lease of the broadband communications network of the four associations of municipalities in Belgium, which we refer to as the pure intercommunalues or the "**PICs**." All capital expenditures associated with the PICs network are initiated by Telenet, but are executed and financed by the PICs through additions to this lease that are repaid over a 15-year term. These amounts do not include Telenet's commitment related to certain operating costs associated with the PICs network. For additional information regarding this commitment, see note 20.

General Information

At December 31, 2018, most of our outstanding debt had been incurred by one of our three subsidiary "borrowing groups." References to these borrowing groups, which comprise Virgin Media, UPC Holding and Telenet, include their respective restricted parent and subsidiary entities.

Credit Facilities. Each of our borrowing groups has entered into one or more credit facility agreements with certain financial institutions. Each of these credit facilities contain certain covenants, the more notable of which are as follows:

- Our credit facilities contain certain consolidated net leverage ratios, as specified in the relevant credit facility, which are required to be complied with (i) on an incurrence basis and/or (ii) when the associated revolving credit facilities have been drawn beyond a specified percentage of the total available revolving credit commitments, on a maintenance basis;

- Subject to certain customary and agreed exceptions, our credit facilities contain certain restrictions which, among other things, restrict the ability of the members of the relevant borrowing group to (i) incur or guarantee certain financial indebtedness, (ii) make certain disposals and acquisitions, (iii) create certain security interests over their assets and (iv) make certain restricted payments to their direct and/or indirect parent companies (and indirectly to Liberty Global) through dividends, loans or other distributions;

- Our credit facilities require that certain members of the relevant borrowing group guarantee the payment of all sums payable under the relevant credit facility and such group members are required to grant first-ranking security over their shares or, in certain borrowing groups, over substantially all of their assets to secure the payment of all sums payable thereunder;

- In addition to certain mandatory prepayment events, our credit facilities provide that the instructing group of lenders under the relevant credit facility, under certain circumstances, may cancel the group's commitments thereunder and declare the loan(s) thereunder due and payable after the applicable notice period following the occurrence of a change of control (as specified in the relevant credit facility);

- Our credit facilities contain certain customary events of default, the occurrence of which, subject to certain exceptions, materiality qualifications and cure rights, would allow the instructing group of lenders to (i) cancel the total commitments, (ii) declare that all or part of the loans be payable on demand and/or (iii) accelerate all outstanding loans and terminate their commitments thereunder;

- Our credit facilities require members of the relevant borrowing group to observe certain affirmative and negative undertakings and covenants, which are subject to certain materiality qualifications and other customary and agreed exceptions; and

- In addition to customary default provisions, our credit facilities generally include certain cross-default and cross-acceleration provisions with respect to other indebtedness of members of the relevant borrowing group, subject to agreed minimum thresholds and other customary and agreed exceptions.

Senior and Senior Secured Notes. Certain of our borrowing groups have issued senior and/or senior secured notes. In general, our senior and senior secured notes (i) are senior obligations of each respective issuer within the relevant borrowing group that rank equally with all of the existing and future senior debt of such issuer and are senior to all existing and future subordinated debt of such issuer within the relevant borrowing group, (ii) contain, in most instances, certain guarantees from other members of the relevant borrowing group (as specified in the applicable indenture) and (iii) with respect to our senior secured notes, are secured by certain pledges or liens over the assets and/or shares of certain members of the relevant borrowing group. In addition, the indentures governing our senior and senior secured notes contain certain covenants, the more notable of which are as follows:

- Our notes contain certain customary incurrence-based covenants. In addition, our notes provide that any failure to pay principal prior to the expiration of any applicable grace period, or any acceleration with respect to other indebtedness of the issuer or certain subsidiaries, over agreed minimum thresholds (as specified under the applicable indenture), is an event of default under the respective notes;

- Subject to certain customary and agreed exceptions, our notes contain certain restrictions that, among other things, restrict the ability of the members of the relevant borrowing group to (i) incur or guarantee certain financial indebtedness, (ii) make certain disposals and acquisitions, (iii) create certain security interests over their assets and (iv) make certain restricted payments to its direct and/or indirect parent companies (and indirectly to Liberty Global) through dividends, loans or other distributions;

- If the relevant issuer or certain of its subsidiaries (as specified in the applicable indenture) sell certain assets, such issuer must, subject to certain customary and agreed exceptions, offer to repurchase the applicable notes at par, or if a change of control (as specified in the applicable indenture) occurs, such issuer must offer to repurchase all of the relevant notes at a redemption price of 101%;

- Our senior secured notes contain certain early redemption provisions including, for certain senior secured notes, the ability to, during each 12-month period commencing on the issue date for such notes until the applicable call date, redeem up to 10% of the principal amount of the notes at a redemption price equal to 103% of the principal amount of the notes to be redeemed plus accrued and unpaid interest; and

- Certain of our notes are non-callable. The remainder of our notes are non-callable prior to their respective call date (as specified under the applicable indenture). At any time prior to the applicable call date, we may redeem some or all of the applicable notes by paying a "make-whole" premium, which is the present value of all remaining scheduled interest payments to the applicable call date using the discount rate as of the redemption date plus a premium (as specified in the applicable indenture). After the applicable call date, we may redeem some or all of these notes at various redemption prices plus accrued interest and additional amounts (as specified in the applicable indenture), if any, to the applicable redemption date.

SPE Notes. From time to time, we create special purpose financing entities (**SPEs**), most of which are 100% owned by third parties, for the primary purpose of facilitating the offering of senior and senior secured notes, which we collectively refer to as the "**SPE Notes**."

The SPEs used the proceeds from the issuance of SPE Notes to fund term loan facilities under the credit facilities made available to their respective borrowing group (as further described below), each a "**Funded Facility**" and collectively the "**Funded Facilities**." Each SPE is dependent on payments from the relevant borrowing entity under the applicable Funded Facility in order to service its payment obligations under each respective SPE Note. Each of the Funded Facility term loans creates a variable interest in the respective SPE for which the relevant borrowing entity is the primary beneficiary and are consolidated by the relevant parent entities, including Liberty Global. As a result, the amounts outstanding under the Funded Facilities are eliminated in the respective borrowing group's and Liberty Global's consolidated financial statements. There are no significant judgments or assumptions associated with the SPEs. At December 31, 2018, we had outstanding SPE Notes issued by entities consolidated by (i) UPC Holding, collectively the "UPCB SPEs" and (ii) Telenet, collectively the "Telenet SPEs".

Pursuant to the respective indentures for the SPE Notes (the **SPE Indentures**) and the respective accession agreements for the Funded Facilities, the call provisions, maturity and applicable interest rate for each Funded Facility are the same as those of the related SPE Notes. The SPEs, as lenders under the relevant Funded Facility for the relevant borrowing group, are treated the same as the other lenders under the respective credit facility, with benefits, rights and protections similar to those afforded to the other lenders. Through the covenants in the applicable SPE Indentures and the applicable security interests over (i) all of the issued shares of the relevant SPE and (ii) the relevant SPE's rights under the applicable Funded Facility granted to secure the relevant SPE's obligations under the relevant SPE Notes, the holders of the SPE Notes are provided indirectly with the benefits, rights, protections and covenants granted to the SPEs as lenders under the applicable Funded Facility. The SPEs are prohibited from incurring any additional indebtedness, subject to certain exceptions under the SPE Indentures.

The SPE Notes are non-callable prior to their respective call date (as specified under the applicable SPE Indenture). If, however, at any time prior to the applicable SPE Notes call date, all or a portion of the loans under the related Funded Facility are voluntarily prepaid (a **SPE Early Redemption Event**), then the SPE will be required to redeem an aggregate principal amount of its respective SPE Notes equal to the aggregate principal amount of the loans prepaid under the relevant Funded Facility. In general, the redemption price payable will equal 100% of the principal amount of the applicable SPE Notes to be redeemed and a "make-whole" premium, which is the present value of all remaining scheduled interest payments to the applicable SPE Notes call date using the discount rate (as specified in the applicable SPE Indenture) as of the redemption date plus a premium (as specified in the applicable SPE Indenture).

Upon the occurrence of a SPE Early Redemption Event on or after the applicable SPE Notes call date, the SPE will redeem an aggregate principal amount of its respective SPE Notes equal to the principal amount of the related Funded Facility prepaid at a redemption price (expressed as a percentage of the principal amount), plus accrued and unpaid interest and additional amounts (as specified in the applicable SPE Indenture), if any, to the applicable redemption date.

Virgin Media - 2018 Financing Transactions

In August 2018, Virgin Media redeemed (i) $190.0 million of the $530.0 million outstanding principal amount of the 6.375% 2023 VM Dollar Senior Notes and (ii) in full the £250.0 million ($318.6 million) outstanding principal amount of the 7.0% 2023 VM Sterling Senior Notes. These transactions were funded with a portion of the proceeds received by another Liberty Global subsidiary in connection with the sale of UPC Austria, as described in note 6. In October 2018, we used existing cash to redeem in full the $340.0 million outstanding principal amount of the 6.375% 2023 VM Dollar Senior Notes. In connection with these transactions, Virgin Media recognized a loss on debt modification and extinguishment of $36.4 million related to (a) the payment of $28.2 million of redemption premiums and (b) the write-off of $8.2 million of unamortized deferred financing costs and discounts.

Virgin Media - 2017 Financing Transactions

During 2017, Virgin Media completed a number of financing transactions that generally resulted in lower interest rates and extended maturities. In connection with these transactions, Virgin Media recognized a loss on debt modification and extinguishment of $67.5 million. This loss includes (i) the write-off of unamortized deferred financing costs and discounts of $40.6 million, (ii) the payment of redemption premiums of $32.6 million, (iii) the write-off of $7.0 million of unamortized premiums and (iv) the payment of third-party costs of $1.3 million.

UPC Holding - 2018 Financing Transactions

In August 2018, UPC Holding (i) repaid $330.0 million of the $1,975.0 million outstanding principal amount under UPC Facility AR, which matures on January 15, 2026, bears interest at a rate of LIBOR + 2.50% and is subject to a LIBOR floor of 0.0%, (ii) repaid in full the €500.0 million ($572.6 million) outstanding principal amount under UPC Facility AS, which bore interest at a rate of EURIBOR + 2.75%, and (iii) redeemed €60.0 million ($68.7 million) of the €600.0 million ($687.1 million) outstanding principal amount under UPC Facility AK, which matures on January 15, 2027 and bears interest at a rate of 4.0%, together with accrued and unpaid interest and the related prepayment premiums, which was owed to UPCB Finance IV and, in turn, UPCB Finance IV used such proceeds to redeem €60.0 million of the €600.0 million outstanding principal amount of the UPCB Finance IV Euro Notes, whose terms are consistent with UPC Facility AK. These transactions were funded with a portion of the proceeds received by another Liberty Global subsidiary in connection with the sale of UPC Austria, as described in note 6. In connection with these transactions, UPC Holding recognized a loss on debt modification and extinguishment of $8.9 million related to (a) the write-off of $6.9 million of unamortized deferred financing costs and discounts and (b) the payment of $2.0 million of redemption premiums.

UPC Holding - 2017 Financing Transactions

During 2017, UPC Holding completed a number of financing transactions that generally resulted in lower interest rates and extended maturities. In connection with these transactions, UPC Holding recognized a loss on debt modification and extinguishment of $112.1 million. This loss includes (i) the payment of redemption premiums of $84.3 million and (ii) the write-off of unamortized deferred financing costs and discounts of $27.8 million.

Telenet - 2018 Financing Transactions

In March 2018, Telenet used existing cash to prepay 10% of the €530.0 million ($607.0 million) outstanding principal amount under Telenet Facility AB, which matures on July 15, 2027 and bears interest at a rate of 4.875%, together with accrued and unpaid interest and the related prepayment premiums, which was owed to Telenet Finance VI and, in turn, Telenet Finance VI used such proceeds to redeem 10% of the €530.0 million outstanding principal amount of the Telenet Finance VI Notes, whose terms are consistent with Telenet Facility AB. In connection with this transaction, Telenet recognized a loss on debt modification and extinguishment of $2.6 million related to (i) the payment of $2.0 million of redemption premiums and (ii) the write-off of $0.6 million of unamortized deferred financing costs and discounts.

In March 2018, commitments under Telenet Facility AL, which matures on March 1, 2026, bears interest at a rate of LIBOR + 2.50% and is subject to a LIBOR floor of 0.0%, were increased by $300.0 million (the **Telenet Facility AL Add-on**) with terms consistent to those of Telenet Facility AL. In April 2018, Telenet drew the full $300.0 million of the Telenet Facility AL Add-on and used the net proceeds, together with existing cash, to prepay in full the €250.0 million ($286.3 million) outstanding principal amount under Telenet Facility V, which bore interest at a rate of 6.750%, together with accrued and unpaid interest and the related prepayment premiums, which was owed to Telenet Finance V and, in turn, Telenet Finance V used such proceeds to redeem in full the €250.0 million outstanding principal amount of the 6.750% Telenet Finance V Notes. In connection with this transaction, Telenet recognized a loss on debt modification and extinguishment of $21.3 million related to (i) the payment of $17.3 million of redemption premiums and (ii) the write-off of $4.0 million of unamortized deferred financing costs and discounts.

In May 2018, Telenet entered into (i) a $1,600.0 million term loan facility (Telenet Facility AN), which was issued at 99.875% of par, matures on August 15, 2026, bears interest at a rate of LIBOR + 2.25% and is subject to a LIBOR floor of 0.0%, and (ii) a €730.0 million ($836.0 million) term loan facility (Telenet Facility AO), which was issued at 99.875% of par, matures on December 15, 2027, bears interest at a rate of EURIBOR + 2.50% and is subject to a EURIBOR floor of 0.0%. The net proceeds from Telenet Facility AN and Telenet Facility AO, together with existing cash, were used to prepay in full (a) the $1,300.0 million outstanding principal amount under Telenet Facility AL, (b) the $300.0 million outstanding principal amount under the Telenet Facility AL Add-on and (c) the €730.0 million outstanding principal amount under Telenet Facility AM, which bore interest at a rate of EURIBOR + 2.75%. In connection with these transactions, Telenet recognized a loss on debt modification and extinguishment of $7.6 million related to the write-off of unamortized deferred financing costs and discounts.

In August 2018, commitments under Telenet Facility AN and Telenet Facility AO were increased by $475.0 million (the **Telenet Facility AN Add-on**) and €205.0 million ($234.8 million) (the **Telenet Facility AO Add-on**), respectively. The Telenet Facility AN Add-on and the Telenet Facility AO Add-on were issued at 98.5% and 98.0% of par, respectively. All other terms of the Telenet Facility AN Add-on and the Telenet Facility AO Add-on are consistent with those of Telenet Facility AN and Telenet Facility AO, respectively. The Telenet Facility AN Add-on and the Telenet Facility AO Add-on were drawn in October 2018, and the net proceeds were used to make an aggregate dividend payment to Telenet shareholders (including Liberty Global) of €600.0 million ($687.1 million).

Telenet - 2017 Financing Transactions

During 2017, Telenet completed a number of financing transactions that generally resulted in lower interest rates and extended maturities. In connection with these transactions, Telenet recognized a loss on debt modification and extinguishment of $75.7 million. This loss includes (i) the write-off of unamortized deferred financing costs and discounts of $54.2 million and (ii) the payment of redemption premiums of $21.5 million.

Maturities of Debt and Finance Lease Obligations

Maturities of our debt and finance lease obligations as of December 31, 2018 are presented below for the named entity and its subsidiaries, unless otherwise noted. Amounts presented below represent U.S. dollar equivalents based on December 31, 2018 exchange rates:

Debt:

	Virgin Media	UPC Holding (a)	Telenet (b)	Other	Total
			in millions		
Year ending December 31:					
2019	$ 2,454.2	$ 587.4	$ 440.9	$ 55.0	$ 3,537.5
2020	15.7	24.3	16.9	212.9	269.8
2021	1,320.7	25.4	12.0	962.1	2,320.2
2022	314.1	24.1	11.9	323.2	673.3
2023	75.3	21.3	12.1	—	108.7
Thereafter	11,629.4	5,306.0	5,470.4	—	22,405.8
Total debt maturities	15,809.4	5,988.5	5,964.2	1,553.2	29,315.3
Deferred financing costs, discounts, premiums and accrued interest, net	214.0	49.4	28.1	(16.9)	274.6
Total debt	$ 16,023.4	$ 6,037.9	$ 5,992.3	$ 1,536.3	$ 29,589.9
Current portion	$ 2,706.3	$ 676.1	$ 503.2	$ 57.4	$ 3,943.0
Non-current portion	$ 13,317.1	$ 5,361.8	$ 5,489.1	$ 1,478.9	$ 25,646.9

(a) Amounts include the UPCB SPE Notes issued by the UPCB SPEs. As described above, the UPCB SPEs are consolidated by UPC Holding and Liberty Global.

(b) Amounts include the Telenet SPE Notes issued by the Telenet SPEs. As described above, the Telenet SPEs are consolidated by Telenet and Liberty Global.

Finance lease obligations:

	Telenet	Virgin Media	UPC Holding	Other	Total
			in millions		
Year ending December 31:					
2019	$ 66.9	$ 12.3	$ 4.9	$ 17.3	$ 101.4
2020	82.3	9.3	6.1	9.6	107.3
2021	76.4	8.9	6.3	5.1	96.7
2022	76.1	11.2	4.1	3.1	94.5
2023	64.4	6.9	3.9	18.3	93.5
Thereafter	277.6	172.8	13.6	—	464.0
Total principal and interest payments	643.7	221.4	38.9	53.4	957.4
Amounts representing interest	(168.5)	(152.3)	(9.0)	(6.3)	(336.1)
Present value of net minimum lease payments	$ 475.2	$ 69.1	$ 29.9	$ 47.1	$ 621.3
Current portion	$ 52.6	$ 7.3	$ 3.0	$ 15.3	$ 78.2
Non-current portion	$ 422.6	$ 61.8	$ 26.9	$ 31.8	$ 543.1

Non-cash Financing Transactions

A significant portion of our financing transactions include non-cash borrowings and repayments. During 2018 and 2017, non-cash borrowings and repayments aggregated $2,583.3 million and $17,104.0 million, respectively.

(16) Provisions

A summary of changes of our provisions during 2018 is set forth in the table below:

	Restructuring	Asset retirement obligations	Legal and regulatory	Tax liabilities	Onerous contracts	Other	Total
				in millions			
January 1, 2018	$ 107.1	$ 197.3	$ 90.0	$ 185.0	$ 17.9	$ 42.8	$ 640.1
Acquisitions	—	—	0.2	—	—	0.1	0.3
Charges (credits) to consolidated statement of profit or loss	64.7	(0.9)	27.0	476.3	0.8	3.1	571.0
Cash payments	(86.2)	(0.3)	—	—	—	—	(86.5)
Reclassification to assets held for sale	(34.6)	(8.0)	(28.3)	(75.8)	—	(3.4)	(150.1)
Foreign currency translation adjustments and other	(7.9)	(18.0)	(4.9)	(32.0)	(0.9)	(3.6)	(67.3)
December 31, 2018	$ 43.1	$ 170.1	$ 84.0	$ 553.5	$ 17.8	$ 39.0	$ 907.5

Our restructuring charges during 2018 included (i) $40.5 million in Belgium as a result of Telenet migrating its mobile subscribers from an MVNO arrangement to the BASE mobile network and (ii) employee severance and termination costs related to certain reorganization and integration activities of $23.7 million in U.K./Ireland and $14.2 million in Central and Corporate.

In connection with the BASE Acquisition, Telenet acquired BASE's mobile network in Belgium. As a result, Telenet migrated its mobile subscribers from an MVNO arrangement to the BASE mobile network. In March 2018, Telenet completed this migration and recorded the costs associated with meeting its minimum guarantee commitment under the MVNO agreement as a restructuring charge. Telenet’s MVNO agreement expired at the end of 2018.

See note 11 for information regarding our provisional tax liabilities.

(17) Employee Benefit Plans

Certain of our subsidiaries maintain various funded and unfunded defined benefit plans for their employees. A significant portion of these defined benefit plans are closed to new entrants and existing participants do not accrue any additional benefits.

The table below provides summary information on the defined benefit plans:

	Year ended December 31,	
	2018	2017
	in millions	
Fair value of plan assets (a)	$ 1,305.0	$ 1,414.0
Projected benefit obligation	$ 1,217.6	$ 1,379.4
Impact of minimum funding requirements/asset ceiling	$ 7.3	$ 7.5
Net asset	$ 80.1	$ 27.1

(a) The fair value of plan assets at December 31, 2018 includes $918.3 million, $137.6 million and $249.0 million of assets that are valued based on Level 1, Level 2 and Level 3 inputs, respectively, of the fair value hierarchy (as further described in note 10). Our plan assets comprise investments in debt securities, equity securities, hedge funds, insurance contracts and certain other assets.

Our net periodic pension cost was $27.2 million and $22.5 million during 2018 and 2017, respectively. These amounts exclude aggregate curtailment gains of $1.0 million and nil, respectively, which are included in impairment, restructuring and other operating items, net, in our consolidated statements of profit or loss.

(18) Segment Reporting

We generally identify our reportable segments as (i) those consolidated subsidiaries that represent 10% or more of our revenue, Adjusted EBITDA (as defined below) or total assets or (ii) those equity method affiliates where our investment or share of revenue or Adjusted EBITDA represents 10% or more of our total assets, revenue or Adjusted EBITDA, respectively. In certain cases, we may elect to include an operating segment in our segment disclosure that does not meet the above-described criteria for a reportable segment. We evaluate performance and make decisions about allocating resources to our operating segments based on financial measures such as revenue and Adjusted EBITDA. In addition, we review non-financial measures such as subscriber growth, as appropriate.

Adjusted EBITDA is the primary measure used by our chief operating decision maker to evaluate segment operating performance and is also a key factor that is used by our internal decision makers to (i) determine how to allocate resources to segments and (ii) evaluate the effectiveness of our management for purposes of annual and other incentive compensation plans. As we use the term, **Adjusted EBITDA** is defined as operating income before depreciation and amortization, share-based compensation, provisions and provision releases related to significant litigation and impairment, restructuring and other operating items. Other operating items include (a) gains and losses on the disposition of non-current assets, (b) third-party costs directly associated with successful and unsuccessful acquisitions and dispositions, including legal, advisory and due diligence fees, as applicable, and (c) other acquisition-related items, such as gains and losses on the settlement of contingent consideration. Our internal decision makers believe Adjusted EBITDA is a meaningful measure because it represents a transparent view of our recurring operating performance that is unaffected by our capital structure and allows management to (1) readily view operating trends, (2) perform analytical comparisons and benchmarking between segments and (3) identify strategies to improve operating performance in the different countries in which we operate. A reconciliation of Adjusted EBITDA from continuing operations to our profit (loss) from continuing operations before income taxes is presented below.

As of December 31, 2018, our reportable segments are as follows:

Consolidated:

- U.K./Ireland
- Belgium
- Switzerland
- Central and Eastern Europe

Nonconsolidated:

- VodafoneZiggo JV

All of our reportable segments derive their revenue primarily from residential and B2B communications services, including video, broadband internet, fixed-line telephony and mobile services.

Segment information for all periods has been retrospectively revised to present (i) our operating segments in Austria, Germany, Hungary, the Czech Republic and Romania and (ii) UPC DTH, which was previously included in our Central and Eastern Europe reportable segment, as discontinued operations. As a result, (a) our former Switzerland/Austria reportable segment now only includes our operations in Switzerland and (b) our Central and Eastern Europe reportable segment now only includes our operations in Poland and Slovakia. Our central and corporate functions (**Central and Corporate**) primarily include (1) revenue earned from services provided to VodafoneZiggo Group Holding B.V., a 50:50 joint venture (referred to herein as the "**VodafoneZiggo JV**"), (2) revenue from sales of customer premises equipment to the VodafoneZiggo JV, (3) costs associated with certain centralized functions, including billing systems, network operations, technology, marketing, facilities, finance and other administrative functions and (4) less significant consolidated operating segments that provide programming and other services. On January 1, 2018, our wholesale handset program was transferred from Germany to an entity included in Central and Corporate. In connection with our presentation of our operating segment in Germany as a discontinued operation, we have retrospectively revised 2017 to reflect this change.

On December 31, 2016, we contributed VodafoneZiggo Holding (including Liberty Global Netherlands Content B.V.) to the VodafoneZiggo JV (the **VodafoneZiggo JV Transaction**). The VodafoneZiggo JV combined VodafoneZiggo Holding with Vodafone's mobile businesses in the Netherlands to create a national unified communications provider in the Netherlands with complementary strengths across video, broadband internet, fixed-line telephony, mobile and B2B services. Effective January 1, 2017, following the closing of the VodafoneZiggo JV Transaction, we have identified the VodafoneZiggo JV as a nonconsolidated reportable segment. Accordingly, our results of operations for 2017 and 2018 and our consolidated statement of financial position as of December 31, 2018 exclude such entities.

Performance Measures of Our Reportable Segments

The amounts presented below represent 100% of each of our reportable segment's revenue and Adjusted EBITDA. As we have the ability to control Telenet, we consolidate 100% of Telenet's revenue and expenses in our consolidated statements of profit or loss despite the fact that third parties own a significant interest. The noncontrolling owners' interests in the operating results of Telenet and other less significant majority-owned subsidiaries are reflected in net profit or loss attributable to noncontrolling interests in our consolidated statements of profit or loss. Similarly, despite only holding a 50% noncontrolling interest in the VodafoneZiggo JV, we present 100% of its revenue and Adjusted EBITDA in the tables below. Our share of the VodafoneZiggo JV's operating results is included in share of results of affiliates, net, in our consolidated statements of profit or loss. For additional information, see notes 1 and 5.

	Year ended December 31,			
	2018		2017	
	Revenue	Adjusted EBITDA	Revenue	Adjusted EBITDA
	in millions			
U.K./Ireland	$ 6,875.1	$ 3,054.2	$ 6,398.7	$ 2,885.1
Belgium	2,991.6	1,498.1	2,857.0	1,307.8
Switzerland	1,326.0	725.2	1,370.1	842.3
Central and Eastern Europe	492.2	249.1	467.5	233.5
Central and Corporate	274.2	(371.7)	189.4	(415.8)
Intersegment eliminations (a)	(3.2)	(11.8)	(14.6)	(9.1)
Total	$ 11,955.9	$ 5,143.1	$ 11,268.1	$ 4,843.8
VodafoneZiggo JV	$ 4,602.2	$ 2,009.7	$ 4,512.5	$ 1,910.6

(a) Amounts are related to transactions between our continuing and discontinued operations prior to the disposal dates of such discontinued operations.

The following table provides a reconciliation of total segment Adjusted EBITDA from continuing operations to profit (loss) from continuing operations before income taxes:

	Year ended December 31,	
	2018	2017
	in millions	
Total segment Adjusted EBITDA from continuing operations	$ 5,143.1	$ 4,843.8
Share-based compensation expense	(205.9)	(178.4)
Depreciation and amortization	(3,896.2)	(3,823.3)
Impairment, restructuring and other operating items, net	(270.5)	(113.8)
Operating income	770.5	728.3
Finance costs	(1,982.7)	(2,906.0)
Finance income	1,229.6	70.8
Net finance costs	(753.1)	(2,835.2)
Share of results of affiliates, net	19.6	(94.1)
Other income, net	14.0	11.3
Profit (loss) from continuing operations before income taxes	$ 51.0	$ (2,189.7)

Property, Equipment and Intangible Asset Additions of our Reportable Segments

The property, equipment and intangible asset additions of the reportable segments of our continuing operations are presented below and reconciled to the capital expenditure amounts included in our consolidated statements of cash flows. The amounts presented below include capital additions financed under vendor financing or finance lease arrangements. For additional information concerning capital additions financed under vendor financing and finance lease arrangements, see note 7.

	Year ended December 31,			
	2018		2017	
	Intangible Assets	Property and equipment	Intangible Assets	Property and equipment
	in millions			
U.K./Ireland	$ 212.9	$ 1,776.0	$ 267.9	$ 1,893.9
Belgium	200.1	608.4	168.9	544.4
Switzerland	31.9	217.7	18.8	225.6
Central and Eastern Europe	14.6	138.2	3.3	154.9
Central and Corporate (a)	405.7	117.8	394.8	53.3
Total additions	$ 865.2	$ 2,858.1	$ 853.7	$ 2,872.1

(a) Includes amounts that represent the net impact of changes in inventory levels associated with certain centrally-procured network equipment. Most of this equipment is ultimately transferred to our operating subsidiaries.

The following table provides a reconciliation of the total property, equipment and intangible asset additions to total capital expenditures of our continuing operations:

	Year ended December 31,	
	2018	2017
	in millions	
Total property, equipment and intangible asset additions	$ 3,723.3	$ 3,725.8
Assets acquired under capital-related vendor financing arrangements	(2,175.5)	(2,336.2)
Assets acquired under finance leases	(102.4)	(106.7)
Changes in current liabilities related to capital expenditures	25.3	(10.6)
Total capital expenditures, net	$ 1,470.7	$ 1,272.3
Capital expenditures, net:		
Third-party payments	$ 1,570.4	$ 1,608.8
Proceeds received for transfers to related parties (a)	(99.7)	(336.5)
Total capital expenditures, net	$ 1,470.7	$ 1,272.3

(a) Primarily relates to transfers of centrally-procured property and equipment to our discontinued operations and the VodafoneZiggo JV.

Revenue by Major Category

Our revenue by major category for our consolidated reportable segments is set forth below:

	Year ended December 31,	
	2018	2017
	in millions	
Residential revenue:		
Residential cable revenue (a):		
Subscription revenue (b):		
Video	$ 2,861.2	$ 2,786.5
Broadband internet	3,226.6	2,979.7
Fixed-line telephony	1,607.8	1,599.8
Total subscription revenue	7,695.6	7,366.0
Non-subscription revenue	279.1	335.3
Total residential cable revenue	7,974.7	7,701.3
Residential mobile revenue (c):		
Subscription revenue (b)	983.5	999.7
Non-subscription revenue	694.8	607.1
Total residential mobile revenue	1,678.3	1,606.8
Total residential revenue	9,653.0	9,308.1
B2B revenue (d):		
Subscription revenue	446.4	367.6
Non-subscription revenue	1,537.1	1,372.5
Total B2B revenue	1,983.5	1,740.1
Other revenue (e)	319.4	219.9
Total	$ 11,955.9	$ 11,268.1

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(a) Residential cable subscription revenue includes amounts received from subscribers for ongoing services. Residential cable non-subscription revenue includes, among other items, channel carriage fees, late fees, and revenue from the sale of equipment. As described in note 2, we adopted IFRS 15 on January 1, 2018 using the cumulative effect transition method. For periods subsequent to our adoption of IFRS 15, installation revenue is generally deferred and recognized over the contractual period as residential cable subscription revenue. For periods prior to the adoption of IFRS 15, installation revenue is included in residential cable non-subscription revenue.

(b) Residential subscription revenue from subscribers who purchase bundled services at a discounted rate is generally allocated proportionally to each service based on the standalone price for each individual service. As a result, changes in the standalone pricing of our cable and mobile products or the composition of bundles can contribute to changes in our product revenue categories from period to period.

(c) Residential mobile subscription revenue includes amounts received from subscribers for ongoing services. Residential mobile non-subscription revenue includes, among other items, interconnect revenue and revenue from sales of mobile handsets and other devices.

(d) B2B subscription revenue represents revenue from services to certain small or home office (**SOHO**) subscribers. SOHO subscribers pay a premium price to receive expanded service levels along with video, broadband internet, fixed-line telephony or mobile services that are the same or similar to the mass marketed products offered to our residential subscribers. B2B non-subscription revenue includes business broadband internet, video, fixed-line telephony, mobile and data services offered to medium to large enterprises and, on a wholesale basis, to other operators.

(e) Other revenue includes, among other items, revenue earned from the JV Services, broadcasting revenue in Ireland and revenue from Central and Corporate's wholesale handset program. In addition, the amount for 2018 includes revenue earned from (i) sales of customer premises equipment to the VodafoneZiggo JV and (ii) transitional and other services provided to Deutsche Telekom and Liberty Latin America.

Geographic Segments

The revenue of our geographic segments is set forth below:

	Year ended December 31,	
	2018	2017
	in millions	
U.K.	$ 6,351.2	$ 5,927.9
Belgium	2,991.6	2,857.0
Switzerland	1,326.0	1,370.1
Ireland	523.9	470.8
Poland	440.7	417.9
Slovakia	51.5	49.6
Other, including intersegment eliminations	271.0	174.8
Total	$ 11,955.9	$ 11,268.1
VodafoneZiggo JV	$ 4,602.2	$ 4,512.5

The non-current assets of our geographic segments are set forth below:

	December 31,	
	2018	2017
	in millions	
Continuing operations:		
U.K.	$ 15,536.2	$ 16,977.5
Belgium	6,007.5	6,104.7
Switzerland	4,165.4	4,212.5
Poland	958.7	1,028.4
Ireland	765.4	775.4
Slovakia	128.7	132.8
U.S. and other (a)	1,142.2	994.8
Total continuing operations	28,704.1	30,226.1
Discontinued operations	—	9,336.3
Total	$ 28,704.1	$ 39,562.4

(a) Primarily relates to certain non-current assets included in Central and Corporate.

(19) Financial Risk Management

Overview

We have exposure to the following risks that arise from our financial instruments:

- Credit Risk
- Liquidity Risk
- Market Risk

Our exposure to each of these risks, the policies and procedures that we use to manage these risks and our approach to capital management are discussed below.

Credit Risk

Credit risk is the risk that we would experience financial loss if our customers or the counterparties to our financial instruments and cash investments were to default on their obligations to us.

We manage the credit risks associated with our trade receivables by performing credit verifications, following established dunning procedures and engaging collection agencies. We also manage this risk by disconnecting services to customers whose accounts are delinquent. Concentration of credit risk with respect to trade receivables is limited due to the large number of customers and their dispersion across many different countries. For information concerning the aging of our trade receivables, see note 12.

We are exposed to the risk that the counterparties to the derivative instruments, undrawn debt facilities and cash investments of our subsidiary borrowing groups will default on their obligations to us. We manage these credit risks through the evaluation and monitoring of the creditworthiness of, and concentration of risk with, the respective counterparties. In this regard, credit risk associated with our derivative instruments and undrawn debt facilities is spread across a relatively broad counterparty base of banks and financial institutions. With the exception of a limited number of instances where we have required a counterparty to post collateral, neither party has posted collateral under the derivative instruments of our subsidiary borrowing groups. Collateral is generally not posted by either party under the derivative instruments of our subsidiary borrowing groups. Most of our cash currently is invested in either (i) AAA credit rated money market funds, including funds that invest in government obligations, or (ii) overnight deposits with banks having a minimum credit rating of A by Standard & Poor's or an equivalent rating by Moody's Investor Service. To date, neither the access to nor the value of our cash and cash equivalent balances have been adversely impacted by liquidity problems of financial institutions.

At December 31, 2018, our exposure to counterparty credit risk included (i) derivative assets with an aggregate fair value of $617.3 million, (ii) cash and cash equivalent and restricted cash balances of $1,498.3 million and (iii) aggregate undrawn debt facilities of $2,503.8 million.

Each of our subsidiary borrowing groups have entered into derivative instruments under master agreements with each counterparty that contain master netting arrangements that are applicable in the event of early termination by either party to such derivative instrument. The master netting arrangements are limited to the derivative instruments, and derivative-related debt instruments, governed by the relevant master agreement within each individual borrowing group and are independent of similar arrangements of our other subsidiary borrowing groups.

Under our derivative contracts, it is generally only the non-defaulting party that has a contractual option to exercise early termination rights upon the default of the other counterparty and to set off other liabilities against sums due upon such termination. However, in an insolvency of a derivative counterparty, under the laws of certain jurisdictions, the defaulting counterparty or its insolvency representatives may be able to compel the termination of one or more derivative contracts and trigger early termination payment liabilities payable by us, reflecting any mark-to-market value of the contracts for the counterparty. Alternatively, or in addition, the insolvency laws of certain jurisdictions may require the mandatory set off of amounts due under such derivative contracts against present and future liabilities owed to us under other contracts between us and the relevant counterparty. Accordingly, it is possible that we may be subject to obligations to make payments, or may have present or future liabilities owed to us partially or fully discharged by set off as a result of such obligations, in the event of the insolvency of a derivative counterparty, even though it is the counterparty that is in default and not us. To the extent that we are required to make such payments, our ability to do so will depend on our liquidity and capital resources at the time. In an insolvency of a defaulting counterparty, we will be an unsecured creditor in respect of any amount owed to us by the defaulting counterparty, except to the extent of the value of any collateral we have obtained from that counterparty.

In addition, where a counterparty is in financial difficulty, under the laws of certain jurisdictions, the relevant regulators may be able to (i) compel the termination of one or more derivative instruments, determine the settlement amount and/or compel, without any payment, the partial or full discharge of liabilities arising from such early termination that are payable by the relevant counterparty or (ii) transfer the derivative instruments to an alternative counterparty.

While we currently have no specific concerns about the creditworthiness of any counterparty for which we have material credit risk exposures, we cannot rule out the possibility that one or more of our counterparties could fail or otherwise be unable to meet its obligations to us. Any such instance could have an adverse effect on our cash flows, results of operations, financial condition and/or liquidity.

Although we actively monitor the creditworthiness of our key vendors, the financial failure of a key vendor could disrupt our operations and have an adverse impact on our revenue and cash flows.

Liquidity Risk

Liquidity risk is the risk that we will encounter difficulty in meeting our financial obligations. In addition to cash and cash equivalents, our primary sources of liquidity are cash provided by operations and access to the available borrowing capacity of our various debt facilities. For information regarding our borrowing availability, see note 15.

Our corporate liquidity requirements include (i) corporate general and administrative expenses, (ii) interest payments on our secured borrowing arrangement with respect to the ITV Collar Loan and (iii) principal payments on the ITV Collar Loan and our secured borrowing arrangement with respect to the Lionsgate Loan to the extent not settled through the delivery of the underlying shares. In addition, Liberty Global and its unrestricted subsidiaries may require cash in connection with (a) the repayment of third-party and intercompany debt, (b) the satisfaction of contingent liabilities, (c) acquisitions, (d) the repurchase of equity and debt securities, (e) other investment opportunities, (f) any funding requirements of our subsidiaries and affiliates or (g) income tax payments. In addition, our parent entity uses available liquidity to make interest and principal payments on notes payable to certain of our unrestricted subsidiaries (aggregate outstanding principal of $13.0 billion at December 31, 2018 with varying maturity dates). For information regarding our commitments and contingencies, see note 20.

Our most significant financial obligations relate to our debt obligations, as described in note 15. The terms of our debt instruments contain certain restrictions, including covenants that restrict our ability to incur additional debt. As a result, additional debt financing is only a potential source of liquidity if the incurrence of any new debt is permitted by the terms of our existing debt instruments.

Our current sources of corporate liquidity include (i) cash and cash equivalents held by Liberty Global and, subject to certain tax and legal considerations, Liberty Global's unrestricted subsidiaries, (ii) interest and dividend income received on our and, subject to certain tax and legal considerations, our unrestricted subsidiaries' cash and cash equivalents and investments, including dividends received from the VodafoneZiggo JV, (iii) principal and interest payments received with respect to the VodafoneZiggo JV Receivable and (iv) cash received with respect to transitional services provided to the VodafoneZiggo JV, Deutsche Telekom and Liberty Latin America.

From time to time, Liberty Global and its unrestricted subsidiaries may also receive (i) proceeds in the form of distributions or loan repayments from Liberty Global's borrowing groups or affiliates (including amounts from the VodafoneZiggo JV) upon (a) the completion of recapitalizations, refinancings, asset sales or similar transactions by these entities or (b) the accumulation of excess cash from operations or other means, (ii) proceeds upon the disposition of investments and other assets of Liberty Global and its unrestricted subsidiaries and (iii) proceeds in connection with the incurrence of debt by Liberty Global or its unrestricted subsidiaries or the issuance of equity securities by Liberty Global, including equity securities issued to satisfy subsidiary obligations. No assurance can be given that any external funding would be available to Liberty Global or its unrestricted subsidiaries on favorable terms, or at all. For information regarding the liquidity impacts of the disposition of UPC Austria and the pending dispositions of the Vodafone Disposal Group and UPC DTH, see note 6. For information regarding the liquidity impact of the pending sale of our operations in Switzerland, see note 28.

Our ability to generate cash from our operations will depend on our future operating performance, which is in turn dependent, to some extent, on general economic, financial, competitive, market, regulatory and other factors, many of which are beyond our control. We believe that our sources of liquidity will be sufficient to fund our currently anticipated working capital needs, capital expenditures and other liquidity requirements during the next 12 months, although no assurance can be given that this will be the case. In this regard, it is not possible to predict how political and economic conditions, sovereign debt concerns or any adverse regulatory developments could impact the credit and equity markets we access and, accordingly, our future liquidity and financial position. In addition, sustained or increased competition, particularly in combination with adverse economic or regulatory developments, could have an unfavorable impact on our cash flows and liquidity.

We use budgeting and cash flow forecasting tools to ensure that we will have sufficient resources to timely meet our liquidity requirements. We also maintain a liquidity reserve to provide for unanticipated cash outflows.

The following tables show the timing of expected payments based on the contractually agreed upon terms for our financial liabilities as of December 31, 2018:

	Payments due during:						
	2019	2020	2021	2022	2023	Thereafter	Total
				in millions			
Debt:							
Principal	$ 3,537.5	$ 269.8	$ 2,320.2	$ 673.3	$ 108.7	$ 22,405.8	$ 29,315.3
Interest (a)	1,226.4	1,296.9	1,255.5	1,192.3	1,175.3	3,333.2	9,479.6
Finance lease obligations:							
Principal	78.2	74.0	66.0	67.7	70.2	265.2	621.3
Interest (a)	23.5	33.3	30.7	26.9	23.1	198.6	336.1
Accounts payable	874.3	—	—	—	—	—	874.3
VAT payable	209.6	—	—	—	—	—	209.6
Projected derivative cash payments (receipts), net (b)	(2.1)	(109.1)	(738.9)	(541.1)	(260.5)	(950.5)	(2,602.2)
Total	$ 5,947.4	$ 1,564.9	$ 2,933.5	$ 1,419.1	$ 1,116.8	$ 25,252.3	$ 38,234.0

(a) Amounts are based on interest rates, interest payment dates and contractual maturities in effect as of December 31, 2018. These amounts are presented for illustrative purposes only and will likely differ from the actual cash payments required in future periods.

(b) The U.S. dollar equivalents of our net projected cash flows associated with our derivative instruments are based on interest rates and exchange rates that were in effect as of December 31, 2018. These amounts are presented for illustrative purposes only and will likely differ from the actual cash payments required in future periods. For additional information regarding our derivative instruments, see note 9.

The following tables show the timing of expected payments based on the contractually agreed upon terms for our financial liabilities as of December 31, 2017:

	Payments due during:						
	2018	2019	2020	2021	2022	Thereafter	Total
				in millions			
Debt:							
Principal	$ 4,194.4	$ 195.3	$ 330.2	$ 3,019.6	$ 751.0	$ 32,527.1	$ 41,017.6
Interest (a)	1,674.3	1,627.6	1,651.8	1,616.2	1,529.4	5,419.9	13,519.2
Finance lease obligations:							
Principal	107.0	83.9	74.5	70.5	70.7	301.9	708.5
Interest (a)	40.2	34.1	29.4	25.6	21.6	188.8	339.7
Accounts payable	1,046.6	—	—	—	—	—	1,046.6
VAT payable	246.5	—	—	—	—	—	246.5
Projected derivative cash payments (receipts), net (b)	(268.0)	67.0	45.5	(152.7)	(318.2)	(1,204.2)	(1,830.6)
Total	$ 7,041.0	$ 2,007.9	$ 2,131.4	$ 4,579.2	$ 2,054.5	$ 37,233.5	$ 55,047.5

(a) Amounts are based on interest rates, interest payment dates and contractual maturities in effect as of December 31, 2017. These amounts are presented for illustrative purposes only and will likely differ from the actual cash payments required in future periods.

(b) The U.S. dollar equivalents of our net projected cash flows associated with our derivative instruments are based on interest rates and exchange rates that were in effect as of December 31, 2017. These amounts are presented for illustrative purposes only and will likely differ from the actual cash payments required in future periods. For additional information regarding our derivative instruments, see note 9.

Market Risk

Interest Rate Risks

We are exposed to changes in interest rates primarily as a result of our borrowing activities, which include fixed-rate and variable-rate borrowings by our borrowing groups. Our primary exposure to variable-rate debt is through the EURIBOR-indexed and LIBOR-indexed debt of our borrowing groups and the variable-rate debt of certain of our other subsidiaries.

In general, we enter into derivative instruments to protect against increases in the interest rates on our variable-rate debt. For additional information concerning the impacts of these interest rate derivative instruments, see note 9.

In July 2017, the U.K. Financial Conduct Authority (the authority that regulates LIBOR) announced that it intends to stop compelling banks to submit rates for the calculation of LIBOR after 2021. Currently, it is not possible to predict the exact transitional arrangements for calculating applicable reference rates that may be made in the U.K., the U.S., the Eurozone or elsewhere given that a number of outcomes are possible, including the cessation of the publication of one or more reference rates. Our loan documents contain provisions that contemplate alternative calculations of the base rate applicable to our LIBOR-indexed debt to the extent LIBOR is not available, which alternative calculations we do not anticipate will be materially different from what would have been calculated under LIBOR. Additionally, no mandatory prepayment or redemption provisions would be triggered under our loan documents in the event that the LIBOR rate is not available. It is possible, however, that any new reference rate that applies to our LIBOR-indexed debt could be different than any new reference rate that applies to our LIBOR-indexed derivative instruments. We anticipate managing this difference and any resulting increased variable-rate exposure through modifications to our debt and/or derivative instruments, however future market conditions may not allow immediate implementation of desired modifications and/or the company may incur significant associated costs.

Weighted Average Variable Interest Rate. At December 31, 2018, the outstanding principal amount of our variable-rate indebtedness aggregated $11.7 billion, and the weighted average interest rate (including margin) on such variable-rate indebtedness was approximately 4.2%, excluding the effects of interest rate derivative contracts, deferred financing costs, original issue premiums or discounts and commitment fees, all of which affect our overall cost of borrowing. Assuming no change in the amount outstanding, and without giving effect to any interest rate derivative contracts, deferred financing costs, original issue premiums or discounts and commitment fees, a hypothetical 50 basis point (0.50%) increase (decrease) in our weighted average variable interest rate would increase (decrease) our annual consolidated interest expense and cash outflows by $58.5 million. As discussed above and in note 9, we use interest rate derivative contracts to manage our exposure to increases in variable interest rates. In this regard, increases in the fair value of these contracts generally would be expected to offset most of the economic impact of increases in the variable interest rates applicable to our indebtedness to the extent and during the period that principal amounts are matched with interest rate derivative contracts.

Foreign Currency Risk

We are exposed to foreign currency exchange rate risk with respect to our consolidated debt in situations where our debt is denominated in a currency other than the functional currency of the operations whose cash flows support our ability to repay or refinance such debt. Although we generally match the denomination of our and our subsidiaries' borrowings with the functional currency of the operations that are supporting the respective borrowings, market conditions or other factors may cause us to enter into borrowing arrangements that are not denominated in the functional currency of the underlying operations (unmatched debt). In these cases, our policy is to provide for an economic hedge against foreign currency exchange rate movements by using derivative instruments to synthetically convert unmatched debt into the applicable underlying currency. At December 31, 2018, substantially all of our debt was either directly or synthetically matched to the applicable functional currencies of the underlying operations. For additional information concerning the terms of our derivative instruments, see note 9.

In addition to the exposure that results from the mismatch of our borrowings and underlying functional currencies, we are exposed to foreign currency risk to the extent that we enter into transactions denominated in currencies other than our or our subsidiaries' respective functional currencies (non-functional currency risk), such as equipment purchases, programming contracts, notes payable and notes receivable (including intercompany amounts). Changes in exchange rates with respect to amounts recorded in our consolidated statements of financial position related to these items will result in unrealized (based upon period-end exchange rates) or realized foreign currency transaction gains and losses upon settlement of the transactions. Moreover, to the extent that our revenue, costs and expenses are denominated in currencies other than our respective functional currencies, we will experience fluctuations in our revenue, costs and expenses solely as a result of changes in foreign currency exchange rates. Generally, we will consider hedging non-functional currency risks when the risks arise from agreements with third parties that involve the future payment or receipt of cash or other monetary items to the extent that we can reasonably predict the timing and amount of such payments or receipts and the payments or receipts are not otherwise hedged. In this regard, we have entered into foreign currency forward contracts to hedge certain of these risks. For additional information concerning our foreign currency forward contracts, see note 9.

We also are exposed to unfavorable and potentially volatile fluctuations of the U.S. dollar (our reporting currency) against the currencies of our operating subsidiaries when their respective financial statements are translated into U.S. dollars for inclusion in the Consolidated Financial Statements. Cumulative translation adjustments are recorded in foreign currency translation reserve as a separate component of equity. Any increase (decrease) in the value of the U.S. dollar against any foreign currency that is the functional currency of one of our operating subsidiaries will cause us to experience unrealized foreign currency translation losses (gains) with respect to amounts already invested in such foreign currencies. Accordingly, we may experience a negative impact on our comprehensive income or loss and equity with respect to our holdings solely as a result of FX. Our primary exposure to FX risk during the year ended December 31, 2018 was to the British pound sterling and euro as 53.2% and 32.0% of our reported revenue during the period was derived from subsidiaries whose functional currencies are the British pound sterling and euro, respectively. In addition, our reported operating results are impacted by changes in the exchange rates for the Swiss franc and other local currencies in Europe. We do not hedge against the risk that we may incur non-cash losses upon the translation of the financial statements of our subsidiaries and affiliates into U.S. dollars.

Capital Management

We seek to maintain our debt at levels that provide for attractive equity returns without assuming undue risk. In this regard, we generally seek to cause our operating subsidiaries to maintain their debt at levels that result in a consolidated debt balance (excluding the ITV Collar Loan and Lionsgate Loan and measured using subsidiary debt figures at swapped foreign currency exchange rates, consistent with the covenant calculation requirements of our subsidiary debt agreements) that is between four and five times our consolidated Adjusted EBITDA, although the timing of our acquisitions and financing transactions and the interplay of average and spot foreign currency rates may impact this ratio.

We monitor our debt capital on the basis of our leverage covenants. As further discussed above, our ability to service or refinance our debt and to maintain compliance with our leverage covenants is dependent primarily on our ability to maintain or increase the Adjusted EBITDA of our operating subsidiaries and to achieve adequate returns on our capital expenditures and acquisitions. For additional information regarding our debt, see note 15.

(20) Commitments and Contingencies

Commitments

In the normal course of business, we have entered into agreements that commit our company to make cash payments in future periods with respect to network and connectivity commitments, programming contracts, purchases of customer premises and other equipment and services, non-cancellable operating leases and other items. The following table sets forth the U.S. dollar equivalents of such commitments as of December 31, 2018. The commitments included in this table do not reflect any liabilities that are included in our December 31, 2018 consolidated statements of financial position.

	Payments due during:						
	2019	2020	2021	2022	2023	Thereafter	Total
				in millions			
Network and connectivity commitments	$ 629.4	$ 282.1	$ 243.6	$ 60.3	$ 44.1	$ 776.4	$ 2,035.9
Programming commitments	858.0	558.7	286.2	52.1	14.2	44.9	1,814.1
Purchase commitments	742.8	243.9	88.5	31.9	20.4	45.5	1,173.0
Operating leases	123.9	85.4	66.6	54.3	46.8	178.6	555.6
Other commitments	27.0	3.2	0.5	0.3	—	—	31.0
Total (a)	$ 2,381.1	$ 1,173.3	$ 685.4	$ 198.9	$ 125.5	$ 1,045.4	$ 5,609.6

Network and connectivity commitments include (i) Telenet's commitments for certain operating costs associated with its leased network, (ii) commitments associated with our MVNO agreements, primarily in the U.K., and (iii) service commitments associated with our network extension projects, primarily in the U.K. Telenet's commitments for certain operating costs are subject to adjustment based on changes in the network operating costs incurred by Telenet with respect to its own networks. These potential adjustments are not subject to reasonable estimation and, therefore, are not included in the above table. The amounts reflected in the above table with respect to certain of our MVNO commitments represent fixed minimum amounts payable under these agreements and, therefore, may be significantly less than the actual amounts we ultimately pay in these periods.

Programming commitments consist of obligations associated with certain of our programming, studio output and sports rights contracts that are enforceable and legally binding on us as we have agreed to pay minimum fees without regard to (i) the actual number of subscribers to the programming services, (ii) whether we terminate service to a portion of our subscribers or dispose of a portion of our distribution systems or (iii) whether we discontinue our premium sports services. Programming commitments do not include increases in future periods associated with contractual inflation or other price adjustments that are not fixed. Accordingly, the amounts reflected in the above table with respect to these contracts are significantly less than the amounts we expect to pay in these periods under these contracts. Historically, payments to programming vendors have represented a significant portion of our operating costs, and we expect that this will continue to be the case in future periods. In this regard, our total programming and copyright costs aggregated $1,651.2 million and $1,456.0 million during 2018 and 2017, respectively.

Purchase commitments include unconditional and legally binding obligations related to (i) the purchase of customer premises and other equipment and (ii) certain service-related commitments, including call center, information technology and maintenance services.

In addition to the commitments set forth in the table above, we have significant commitments under (i) derivative instruments and (ii) defined benefit plans and similar agreements, pursuant to which we expect to make payments in future periods. For information regarding our derivative instruments, including the net cash paid or received in connection with these instruments during 2018 and 2017, see note 9. For information regarding our defined benefit plans, see note 17.

We also have commitments pursuant to agreements with, and obligations imposed by, franchise authorities and municipalities, which may include obligations in certain markets to move aerial cable to underground ducts or to upgrade, rebuild or extend portions of our broadband communication systems. Such amounts are not included in the above table because they are not fixed or determinable.

Rental expense under non-cancellable operating lease arrangements amounted to $111.8 million and $104.5 million during 2018 and 2017, respectively. It is expected that in the normal course of business, operating leases that expire generally will be renewed or replaced by similar leases.

We have established various defined contribution benefit plans for our and our subsidiaries' employees. Our aggregate expense for matching contributions under the various defined contribution employee benefit plans was $41.0 million and $34.7 million during 2018 and 2017, respectively.

Guarantees and Other Credit Enhancements

In the ordinary course of business, we may provide (i) indemnifications to our lenders, our vendors and certain other parties and (ii) performance and/or financial guarantees to local municipalities, our customers and vendors. Historically, these arrangements have not resulted in our company making any material payments and we do not believe that they will result in material payments in the future.

Legal and Regulatory Proceedings and Other Contingencies

Interkabel Acquisition. On November 26, 2007, Telenet and the PICs announced a non-binding agreement-in-principle to transfer the analog and digital television activities of the PICs, including all existing subscribers, to Telenet. Subsequently, Telenet and the PICs entered into a binding agreement (the **2008 PICs Agreement**), which closed effective October 1, 2008. Beginning in December 2007, Proximus NV/SA (**Proximus**), the incumbent telecommunications operator in Belgium, instituted several proceedings seeking to block implementation of these agreements. Proximus lodged summary proceedings with the President of the Court of First Instance of Antwerp to obtain a provisional injunction preventing the PICs from effecting the agreement-in-principle and initiated a civil procedure on the merits claiming the annulment of the agreement-in-principle. In March 2008, the President of the Court of First Instance of Antwerp ruled in favor of Proximus in the summary proceedings, which ruling was overturned by the Court of Appeal of Antwerp in June 2008. Proximus brought this appeal judgment before the Cour de Cassation (the **Belgian Supreme Court**), which confirmed the appeal judgment in September 2010. On April 6, 2009, the Court of First Instance of Antwerp ruled in favor of the PICs and Telenet in the civil procedure on the merits, dismissing Proximus's request for the rescission of the agreement-in-principle and the 2008 PICs Agreement. On June 12, 2009, Proximus appealed this judgment with the Court of Appeal of Antwerp. In this appeal, Proximus is now also seeking compensation for damages. While these proceedings were suspended indefinitely, other proceedings were initiated, which resulted in a ruling by the Belgian Council of State in May 2014 annulling (i) the decision of the PICs not to organize a public market consultation and (ii) the decision from the PICs' board of directors to approve the 2008 PICs Agreement. In December 2015, Proximus resumed the civil proceedings pending with the Court of Appeal of Antwerp seeking to have the 2008 PICs Agreement annulled and claiming damages of €1.4 billion ($1.6 billion).

In December 2017, the Court of Appeals of Antwerp issued a judgment rejecting Proximus' claims. Proximus has the right to appeal the Court of Appeals of Antwerp's judgment with the Belgian Supreme Court, however Proximus has not done so to date. No assurance can be given as to the outcome of these or other proceedings. However, an unfavorable outcome of existing or future proceedings could potentially lead to the annulment of the 2008 PICs Agreement and/or to an obligation of Telenet to pay compensation for damages, subject to the relevant provisions of the 2008 PICs Agreement, which stipulate that Telenet is responsible for damages in excess of €20.0 million ($22.9 million). We do not expect the ultimate resolution of this matter to have a material impact on our results of operations, cash flows or financial position. No amounts have been accrued by us with respect to this matter as the likelihood of loss is not considered to be probable.

Telekom Deutschland Litigation. On December 28, 2012, Unitymedia filed a lawsuit against Telekom Deutschland GmbH (**Telekom Deutschland**) in which Unitymedia asserts that it pays excessive prices for the co-use of Telekom Deutschland's cable ducts in Unitymedia's footprint. The Federal Network Agency approved rates for the co-use of certain ducts of Telekom Deutschland in March 2011. Based in part on these approved rates, Unitymedia sought a reduction of the annual lease fees (approximately €75 million ($86 million) for 2018) by approximately five-sixths. In addition, Unitymedia is seeking the return of similarly calculated overpayments from 2009 through the ultimate settlement date, plus accrued interest. In October 2016, the first instance court dismissed this action, and in March 2018, the court of appeal dismissed Unitymedia's appeal of the first instance court's decision and did not grant permission to appeal further to the Federal Court of Justice. Unitymedia has filed a motion with the Federal Court of Justice to grant permission to appeal. The resolution of this matter may take several years and no assurance can be given that Unitymedia's claims will be successful. Any recovery by Unitymedia will not be reflected in our consolidated financial statements until such time as the final disposition of this matter has been reached. If this matter is settled subsequent to the completion of the sale of the Vodafone Disposal Group, we would only share in 50% of any amounts recovered, plus 50% of the net present value of certain cost savings in future periods that are attributable to the favorable resolution of this matter, less 50% of associated legal or other third-party fees paid post-completion of the sale of the Vodafone Disposal Group.

Belgium Regulatory Developments. In June 2018, the Belgisch Instituut voor Post en Telecommunicatie and the regional regulators for the media sectors (together, the **Belgium Regulatory Authorities**) adopted a new decision finding that Telenet has significant market power in the wholesale broadband market (the **2018 Decision**). The 2018 Decision imposes on Telenet the obligations to (i) provide third-party operators with access to the digital television platform (including basic digital video and analog video) and (ii) make available to third-party operators a bitstream offer of broadband internet access (including fixed-line telephony as an option). Unlike prior decisions, the 2018 Decision no longer applies "retail minus" pricing on Telenet; however, as of August 1, 2018, this decision imposes a 17% reduction in monthly wholesale cable resale access prices for an interim period. The Belgium Regulatory Authorities will replace these interim prices with "reasonable access tariffs" around mid-2019.

The 2018 Decision aims to, and in its application, may strengthen Telenet's competitors by granting them resale access to Telenet's network to offer competing products and services notwithstanding Telenet's substantial historical financial outlays in developing the infrastructure. In addition, any resale access granted to competitors could (i) limit the bandwidth available to Telenet to provide new or expanded products and services to the customers served by its network and (ii) adversely impact Telenet's ability to maintain or increase its revenue and cash flows. The extent of any such adverse impacts ultimately will be dependent on the extent that competitors take advantage of the resale access afforded to Telenet's network, the rates that Telenet receives for such access and other competitive factors or market developments. Telenet considers the 2018 Decision to be inconsistent with the principle of technology-neutral regulation and the European Single Market Strategy to stimulate further investments in broadband networks. Telenet has challenged the 2018 Decision in the Brussels Court of Appeal and has also initiated an action in the European Court of Justice against the European Commission's decision not to challenge the 2018 Decision. The timing and outcome of each of these actions is uncertain.

Virgin Media VAT Matters. Virgin Media's application of VAT with respect to certain revenue generating activities has been challenged by the U.K. tax authorities. Virgin Media has estimated its maximum exposure in the event of an unfavorable outcome to be £47 million ($60 million) and has accrued £41.0 million ($51.9 million) as of December 31, 2018, as the likelihood of loss is considered probable. A court hearing was held at the end of September 2014 in relation to the U.K. tax authorities' challenge and a decision is expected in 2019.

On March 19, 2014, the U.K. government announced a change in legislation with respect to the charging of VAT in connection with prompt payment discounts such as those that we offer to our fixed-line telephony customers. This change, which took effect on May 1, 2014, impacted our company and some of our competitors. The U.K. tax authority issued a decision in the fourth quarter of 2015 challenging our application of the prompt payment discount rules prior to the May 1, 2014 change in legislation. We appealed this decision. As part of the appeal process, we were required to make aggregate payments of £67.0 million ($99.1 million at the respective transaction dates), comprising (i) the challenged amount of £63.7 million (which we paid during the fourth quarter of 2015) and (ii) related interest of £3.3 million (which we paid during the first quarter of 2016). No provision was recorded by our company at that time as the likelihood of loss was not considered to be probable. The aggregate amount paid does not include penalties, which could be significant in the event that penalties were to be assessed. In September 2018, the court rejected our appeal and ruled in favor of the U.K. tax authority. Accordingly, during the third quarter of 2018, we recorded a provision for litigation of £63.7 million ($83.1 million at the average rate for the period) and related interest expense of £3.3 million ($4.4

million at the average rate for the period) in our consolidated statement of profit or loss. The First Tier Tribunal gave permission to appeal to the Upper Tribunal and we submitted grounds for appeal on February 22, 2019. We expect the hearing to take place in the first half of 2020; however, no assurance can be given as to the ultimate outcome of this matter.

Ziggo Acquisition Matter. In July 2015, KPN N.V. appealed the European Commission's 2014 approval of the acquisition by Liberty Global of Ziggo Holding B.V. (**Ziggo**). We were not a party to that case. In October 2017, the European Union (**E.U.**) General Court annulled the European Commission's approval on procedural grounds in that it found that the European Commission had failed to adequately explain the reasons for elements of its decision. We re-notified our acquisition of Ziggo to the European Commission for a new merger clearance, which was granted on May 30, 2018, and conditioned on remedies substantially similar to the remedies upon which the 2014 merger clearance was based. We consider this matter to be closed.

Other Regulatory Issues. Video distribution, broadband internet, fixed-line telephony, mobile and content businesses are regulated in each of the countries in which we or our affiliates operate. The scope of regulation varies from country to country, although in some significant respects regulation in European markets is harmonized under the regulatory structure of the E.U. Adverse regulatory developments could subject our businesses to a number of risks. Regulation, including conditions imposed on us by competition or other authorities as a requirement to close acquisitions or dispositions, could limit growth, revenue and the number and types of services offered and could lead to increased operating costs and property and equipment additions. In addition, regulation may restrict our operations and subject them to further competitive pressure, including pricing restrictions, interconnect and other access obligations, and restrictions or controls on content, including content provided by third parties. Failure to comply with current or future regulation could expose our businesses to various penalties.

Effective April 1, 2017, the rateable value of our existing network and other assets in the U.K. increased significantly. This increase affects the amount we pay for network infrastructure charges as the annual amount payable to the U.K. government is calculated by applying a percentage multiplier to the rateable value of assets. This change has and will continue to significantly increase our network infrastructure charges. As compared to 2018, we expect the aggregate amount of this increase will be £28 million ($36 million) in 2019. Beyond 2019, we expect further but declining increases to these charges through the first quarter of 2022. We continue to believe that these increases are excessive and retain the right of appeal should more favorable agreements be reached with other operators. The rateable value of network and other assets constructed under our network extension program in the U.K. remains subject to review by the U.K. government.

In addition to the foregoing items, we have contingent liabilities related to matters arising in the ordinary course of business including (i) legal proceedings, (ii) issues involving VAT and wage, property, withholding and other tax issues and (iii) disputes over interconnection, programming, copyright and channel carriage fees. While we generally expect that the amounts required to satisfy these contingencies will not materially differ from any estimated amounts we have accrued, no assurance can be given that the resolution of one or more of these contingencies will not result in a material impact on our results of operations, cash flows or financial position in any given period. Due, in general, to the complexity of the issues involved and, in certain cases, the lack of a clear basis for predicting outcomes, we cannot provide a meaningful range of potential losses or cash outflows that might result from any unfavorable outcomes.

(21) Expenses by Nature

The following table summarizes our expenses for employee-related expenses (included in cost of services, G&A and selling expenses) and depreciation and amortization (included in cost of services and G&A expenses) from continuing operations:

	Year ended December 31,	
	2018	2017
	in millions	
Employee-related expenses	$ 2,171.7	$ 1,889.3
Depreciation and amortization	$ 3,896.2	$ 3,823.3

(22) Key Management Personnel Compensation

Key management personnel comprise the members of the board of directors and key senior management of the company and its main subsidiaries. Their compensation is as follows:

	Year ended December 31,	
	2018	2017
	in millions	
Share-based compensation	$ 57.6	$ 30.0
Salaries and short-term benefits (a)	12.1	16.9
Post-employment benefits	0.7	0.6
	$ 70.4	$ 47.5

(a) Salaries and short-term benefits include salaries, bonus, directors' fees and certain other cash and non-cash benefits.

Executive officers also participate in our cash performance award program and equity award programs. Furthermore, employees are entitled to participate in a retirement savings plan which includes a company match in the form of equity shares.

(23) Finance Costs and Income

A summary of the finance costs and income that are included in our net finance costs from continuing operations is set forth below:

	Year ended December 31,	
	2018	2017
	in millions	
Interest expense	$ (1,536.4)	$ (1,419.5)
Realized and unrealized losses due to changes in fair values of certain investments and debt, net	(381.3)	—
Losses on debt modification and extinguishment, net	(65.0)	(252.2)
Realized and unrealized losses on derivative instruments, net	—	(1,052.8)
Foreign currency transaction losses, net	—	(181.5)
Total finance costs	(1,982.7)	(2,906.0)
Realized and unrealized gains on derivative instruments, net	1,125.8	—
Foreign currency transaction gains, net	90.4	—
Interest and dividend income	13.4	31.0
Realized and unrealized gains due to changes in fair values of certain investments and debt, net	—	39.8
Total finance income	1,229.6	70.8
Net finance costs	$ (753.1)	$ (2,835.2)

(24) Other Comprehensive Income Accumulated in Reserves

Other comprehensive income (loss) reflects the aggregate impact of foreign currency translation adjustments and pension-related adjustments and other. The changes in the components of other comprehensive income (loss), net of taxes, are summarized as follows:

	Foreign currency translation reserve	Other reserves	Pension reserves (included in retained earnings)	Non-controlling interests	Total other comprehensive income (loss)
			in millions		
Balance at January 1, 2017	$ (2,099.5)	$ 3.1	$ (217.9)	$ (2.6)	$ (2,316.9)
Other comprehensive income	1,951.8	(2.3)	(33.3)	1.7	1,917.9
Impact of the Split-off Transaction	86.6	(0.6)	58.1	—	144.1
Balance at December 31, 2017	(61.1)	0.2	(193.1)	(0.9)	(254.9)
Other comprehensive loss	(883.5)	(0.3)	20.7	(1.0)	(864.1)
Balance at December 31, 2018	$ (944.6)	$ (0.1)	$ (172.4)	$ (1.9)	$ (1,119.0)

(25) Reconciliation of Movements in Liabilities to Cash Flows from Financing Activities

	Debt and finance lease obligations	Derivative (assets)/ liabilities	Total
		in millions	
January 1, 2018	$ 41,978.8	$ (190.1)	$ 41,788.7
Cash flows from financing activities:			
Borrowings of debt	4,396.5	—	4,396.5
Repayments and repurchases of debt and finance lease obligations	(8,170.6)	—	(8,170.6)
Payment of financing costs and debt premiums	(73.1)	—	(73.1)
Net cash received related to derivative instruments	—	112.8	112.8
Total cash flows from financing activities	38,131.6	(77.3)	38,054.3
Changes arising from discontinued operations	(8,975.7)	(156.4)	(9,132.1)
Losses on debt modification and extinguishment, net	65.0	—	65.0
Realized and unrealized gains on derivative instruments, net	—	(1,125.8)	(1,125.8)
Interest accruals	1,423.1	—	1,423.1
Interest payments	(1,405.7)	—	(1,405.7)
Effect of changes in foreign exchange rates	(929.3)	(19.5)	(948.8)
Other liability-related changes	1,871.1	253.0	2,124.1
December 31, 2018	$ 30,180.1	$ (1,126.0)	$ 29,054.1

(26) Supplemental Companies Act Disclosures

Employees

The details of our full-time equivalent employees are as follows:

	December 31,	
	2018	2017
Country operations	24,800	26,400
Corporate	1,800	1,600
Total	26,600	28,000

Directors' Remuneration

A discussion of our directors' remuneration appears in the *Directors' Remuneration Report* included in this annual report.

Audit Fees and All Other Fees

The following table presents fees for professional audit services rendered by KPMG LLP and its international affiliates (including KPMG LLP (U.K.)) during 2018 for the audit of the consolidated financial statements and the separate financial statements of certain of our subsidiaries and for other services rendered by KPMG LLP and its international affiliates.

Fees billed in currencies other than U.S. dollars were translated into U.S. dollars at the average exchange rate in effect during 2018 (in millions).

Audit fees for these financial statements (a)	$ 10.2
Audit fees for financial statements of subsidiaries pursuant to legislation	1.8
Total audit fees	12.0
All other non-audit fees (b)	0.2
Total all services	$ 12.2

(a) Represents audit fees for the consolidated financial statements, including inseparable internal control and other audit procedures performed during interim reviews.

(b) Includes fees for audit services performed in connection with assurance and attestation services not required by statute or regulation.

(27) List of Subsidiaries

At December 31, 2018, our subsidiaries are as follows:

Name of subsidiary	Country of incorporation	Holdings	Proportion of voting rights and shares held	Nature of business	Registered address
Liberty Global Services GmbH	Austria	Ordinary	100.0%	Telecoms	(2)
Coditel Brabant SPRL	Belgium	Ordinary	100.0%	Telecoms	(3)
De Vijver Media NV	Belgium	Ordinary (classes per shareholder)	50.0%	Holding/ Media	(4)
Idealabs Telenet Fund NV	Belgium	Ordinary (classes per shareholder)	50.0%	Holding/Start-up	(5)
Nextel NV	Belgium	Ordinary	100.0%	Telecoms	(6)
Nextel Telecom Solutions NV	Belgium	Ordinary	100.0%	Telecoms	(6)
Pebble Media NV	Belgium	Ordinary (classes per shareholder)	50.0%	Holding/ Media	(7)
TelelinQ D&F NV	Belgium	Ordinary	100.0%	Telecoms	(8)
TelelinQ NV	Belgium	Ordinary	100.0%	Telecoms	(8)
Telenet BVBA	Belgium	Ordinary / preferred	100.0%	Telecoms/ Subholding	(5)
Telenet Finance BVBA	Belgium	Ordinary	100.0%	Consumer Financing	(5)
Telenet Group Holding N.V.	Belgium	Ordinary / preferred	56.4%	Telecoms/ Holding	(5)
Telenet Group NV/SA	Belgium	Ordinary	100.0%	Telecoms	(9)
Telenet Retail BVBA	Belgium	Ordinary	100.0%	Telecoms/ Retail	(5)
Telenet Tecteo Bidco NV	Belgium	Ordinary	75.0%	Holding	(5)
Telenet Vlaanderen NV	Belgium	Ordinary / preferred	99.7%	Telecoms	(5)
The Park Entertainment NV	Belgium	Ordinary	80.8%	Telecoms	(5)
UPC Ceska Republica Sro	Czech Republic	no shares (joint-stock) issued, comparable to partnership interest	100.0%	Telecoms/ Holding	(10)
UPC Infrastructure s.r.o.	Czech Republic	no shares (joint-stock) issued, comparable to partnership interest	100.0%	Telecoms	(10)
UPC Real Estate s.r.o.	Czech Republic	no shares (joint-stock) issued, comparable to partnership interest	100.0%	Holding	(10)

Name of subsidiary	Country of incorporation	Holdings	Proportion of voting rights and shares held	Nature of business	Registered address
UPC Broadband France S.A.S.	France	Ordinary	100.0%	Holding	(11)
UPC Broadband France SNC	France	Ordinary	100.0%	Holding	(11)
Arena Sport Rechte und Marketing GmbH	Germany	Ordinary	100.0%	Telecoms	(12)
Unitymedia BW GmbH	Germany	Ordinary	100.0%	Telecoms	(12)
Unitymedia Finanz-Service GmbH	Germany	Ordinary	100.0%	Holding	(12)
Unitymedia GmbH	Germany	Ordinary	100.0%	Holding	(12)
Unitymedia Hessen GmbH & Co. KG	Germany	partnership interests	100.0%	Telecoms	(12)
Unitymedia Hessen Verwaltungs GmbH	Germany	Ordinary	100.0%	Management company	(12)
Unitymedia Management GmbH	Germany	Ordinary	100.0%	Telecoms/ Holding	(12)
Unitymedia NRW GmbH	Germany	Ordinary	100.0%	Telecoms	(12)
Unitymedia Service GmbH	Germany	ordinary	100.0%	Holding	(12)
Unitymedia Smart Sourcing GmbH	Germany	Ordinary	100.0%	Holding	(12)
UPC Magyarorszag Kft	Hungary	Ordinary	100.0%	Telecoms	(13)
Casey Cablevision Limited	Ireland	Ordinary	100.0%	Holding	(14)
Channel 6 Broadcasting Limited	Ireland	Ordinary	100.0%	Telecoms	(14)
Cullen Broadcasting Limited	Ireland	Ordinary	100.0%	Telecoms	(14)
Imminus (Ireland) Limited	Ireland	Ordinary	100.0%	Telecoms	(14)
Kish Media Limited	Ireland	Ordinary	100.0%	Telecoms	(14)
LGI DTH Ireland	Ireland	Ordinary	100.0%	Holding	(14)
P.B.N. Holdings Ltd	Ireland	Ordinary	100.0%	Holding	(14)
Tullamore Beta Limited	Ireland	Ordinary	100.0%	Telecoms	(14)
TV3 Television Network Limited	Ireland	Ordinary	100.0%	Telecoms	(14)
TVThree Enterprises Limited	Ireland	Ordinary	100.0%	Telecoms	(14)
TVThree Sales Limited	Ireland	Ordinary	100.0%	Telecoms	(14)
Ulana Business Management Ltd	Ireland	Ordinary	100.0%	Finance	(14)
UPC Broadband Ireland Ltd	Ireland	Ordinary	100.0%	Telecoms	(14)
Virgin Media Ireland Ltd	Ireland	Ordinary	100.0%	Telecoms	(14)
Coditel S.ár.l.	Luxembourg	Ordinary	100.0%	Telecoms	(3)
Finance Center Telenet Sàrl	Luxembourg	Ordinary	100.0%	Finance	(15)
Liberty Property Holdco I Sarl	Luxembourg	Ordinary	100.0%	Holding	(15)
Liberty Property Holdco II Sarl	Luxembourg	Ordinary	100.0%	Holding	(15)
Telenet Finance Luxembourg Notes Sàrl	Luxembourg	Ordinary	100.0%	Finance	(15)
Telenet International Finance Sàrl	Luxembourg	Ordinary	100.0%	Holding/ Finance	(15)
Telenet Luxembourg Finance Center Sàrl	Luxembourg	Ordinary	100.0%	Finance	(15)
Telenet Solutions Luxemburg NV	Luxembourg	Ordinary	100.0%	Telecoms	(15)
UPC DTH Leasing Sàrl	Luxembourg	Ordinary	100.0%	Telecoms	(15)
UPC DTH Sàrl	Luxembourg	Ordinary	100.0%	Telecoms	(15)
UPC DTH Slovakia Sàrl	Luxembourg	Ordinary	100.0%	Telecoms	(15)

Name of subsidiary	Country of incorporation	Holdings	Proportion of voting rights and shares held	Nature of business	Registered address
Liberty Global Holding Company Limited	Malta	Ordinary	99.99%	Holding	(16)
Liberty Global Insurance Company Limited	Malta	Ordinary	100.0%	Holding	(16)
Binan Investments B.V.	Netherlands	Ordinary	100.0%	Holding	(17)
Labesa Holding B.V.	Netherlands	Ordinary	100.0%	Holding	(17)
LGCI Holdco I BV	Netherlands	Ordinary	100.0%	Holding	(17)
LGI Mobile BV	Netherlands	Ordinary	100.0%	Telecoms	(17)
LGI Ventures B.V.	Netherlands	Ordinary	100.0%	Holding	(17)
Liberty Global B.V.	Netherlands	Ordinary	100.0%	Holding	(17)
Liberty Global CE Holding B.V.	Netherlands	Ordinary & Preference	100.0%	Holding	(17)
Liberty Global CEE Group Holding BV	Netherlands	Ordinary	100.0%	Holding	(17)
Liberty Global Communication Services BV	Netherlands	Ordinary	100.0%	Holding	(17)
Liberty Global Content Investments BV	Netherlands	Ordinary	100.0%	Holding	(17)
Liberty Global Europe Financing B.V.	Netherlands	Ordinary	100.0%	Holding	(17)
Liberty Global Europe HoldCo 2 B.V.	Netherlands	Ordinary & Preference	100.0%	Holding	(17)
Liberty Global Europe Holding B.V.	Netherlands	Ordinary	100.0%	Holding	(17)
Liberty Global Europe Holding II B.V.	Netherlands	Ordinary & Preference	100.0%	Holding	(17)
Liberty Global Europe Holding III B.V.	Netherlands	Ordinary & Preference	100.0%	Holding	(17)
Liberty Global Europe Investments B.V.	Netherlands	Ordinary	100.0%	Holding	(17)
Liberty Global Europe Management B.V.	Netherlands	Ordinary	100.0%	Management company	(17)
Liberty Global Holding B.V.	Netherlands	Ordinary	100.0%	Holding	(17)
Liberty Global Management BV	Netherlands	Ordinary	100.0%	Management company	(17)
Liberty Global Services B.V.	Netherlands	Ordinary	100.0%	Holding	(17)
Liberty Global Ventures Group Holding BV	Netherlands	Ordinary	100.0%	Holding	(17)
Liberty Global Ventures Holding BV	Netherlands	Ordinary	100.0%	Holding	(17)
UPC Broadband B.V.	Netherlands	Ordinary	100.0%	Holding	(17)
UPC Broadband Holding B.V.	Netherlands	Ordinary	100.0%	Holding	(17)
UPC CEE Holding BV	Netherlands	Ordinary & Preference	100.0%	Holding	(17)
UPC CHAT Holding B.V.	Netherlands	Ordinary & Preference	100.0%	Holding	(17)
UPC Direct Programming II B.V.	Netherlands	Ordinary	100.0%	Telecoms	(17)
UPC DTH Holding BV	Netherlands	Ordinary	100.0%	Holding	(17)
UPC France Holding B.V.	Netherlands	Ordinary	100.0%	Holding	(17)
UPC Germany Holding B.V.	Netherlands	Ordinary	100.0%	Holding	(17)
UPC Holding B.V.	Netherlands	Ordinary	100.0%	Holding	(17)
UPC Holding II B.V.	Netherlands	Ordinary	100.0%	Holding	(17)
UPC Poland Holding B.V.	Netherlands	Ordinary	100.0%	Holding	(17)

Name of subsidiary	Country of incorporation	Holdings	Proportion of voting rights and shares held	Nature of business	Registered address
UPC Slovakia Group Holding BV	Netherlands	Ordinary	100.0%	Holding	(17)
UPC Slovakia Holding I BV	Netherlands	Ordinary & Preference	100.0%	Holding	(17)
UPC Slovakia Holding II BV	Netherlands	Ordinary	100.0%	Holding	(17)
UPC Switzerland Holding BV	Netherlands	Ordinary	100.0%	Holding	(17)
VodafoneZiggo Group Holding BV	Netherlands	Ordinary	50.0%	Holding	(18)
UPC Poland Property SP zoo	Poland	Ordinary	100.0%	Holding	(19)
UPC Polska Sp. z o.o	Poland	Ordinary	100.0%	Telecoms/ Holding	(19)
Focus Sat Romania S.A.	Romania	Ordinary	100.0%	Telecoms	(20)
UPC External Services S.R.L.	Romania	Ordinary	100.0%	Telecoms	(20)
UPC Romania S.A.	Romania	Ordinary	100.0%	Telecoms	(20)
UPC Services S.R.L.	Romania	Ordinary	100.0%	Telecoms	(21)
UPC Broadband Slovakia sro	Slovak Republic	no shares (joint-stock) issued, comparable to partnership interest	100.0%	Telecoms/ Holding	(22)
Sitel SA	Switzerland	Ordinary/ bearer shares	66.7%	Telecoms	(23)
Teledistal SA	Switzerland	Ordinary/ registered shares	58.3%	Telecoms	(24)
Telelavaux SA	Switzerland	Ordinary/ registered shares	80.0%	Telecoms	(25)
UPC Schweiz GmbH	Switzerland	Ordinary	100.0%	Holding	(26)
Video 2000 SA	Switzerland	Ordinary/ registered shares	60.0%	Telecoms	(27)
All3Media Holdings Limited	UK-England & Wales	Ordinary	50.0%	Joint Venture Subsidiary	(28)
Avon Cable Investments Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
BCMV Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Birmingham Cable Corporation Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
Birmingham Cable Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Bitbuzz UK Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Blue Yonder Workwise Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Cable Internet Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)

Name of subsidiary	Country of incorporation	Holdings	Proportion of voting rights and shares held	Nature of business	Registered address
Cable London Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Cable on Demand Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
CableTel Herts and Beds Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
CableTel Surrey and Hampshire Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
CableTel West Riding Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
Catalyst NewCo 1 Limited	UK-England & Wales	Ordinary	100.0%	Holding	(30)
Catalyst NewCo 2 Limited	UK-England & Wales	Ordinary	50.0%	Holding	(30)
Catalyst NewCo 3 Limited	UK-England & Wales	Ordinary	50.0%	Holding	(30)
Crystal Palace Radio Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
Diamond Cable Communications Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
DLG Acquisitions Limited	UK-England & Wales	Ordinary	50.0%	Joint Venture	(28)
DLG Financing 1 Limited	UK-England & Wales	Ordinary	50.0%	Joint Venture Subsidiary	(28)
DLG Financing 2 Limited	UK-England & Wales	Ordinary	50.0%	Joint Venture Subsidiary	(28)
Eurobell (Holdings) Limited	UK-England & Wales	Ordinary	100.0%	Holding	(29)
Filegale Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
Flextech (1992) Limited	UK-England & Wales	Ordinary	100.0%	In Liquidation	(31)
Flextech Broadband Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
Flextech Interactive Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Flextech Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
General Cable Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
General Cable Programming Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Global Handset Finco Ltd (1)	UK-England & Wales	Ordinary	100.0%	Mobile Financing	(30)
LGCI HoldCo III Ltd (1)	UK-England & Wales	Ordinary	100.0%	Holding	(30)
LGCI Holdings Limited (1)	UK-England & Wales	Ordinary	100.0%	Holding	(30)

Name of subsidiary	Country of incorporation	Holdings	Proportion of voting rights and shares held	Nature of business	Registered address
Liberty Global Broadband Germany Holding II Limited	UK-England & Wales	Ordinary	100.0%	Holding	(30)
Liberty Global Broadband Germany Holding Limited	UK-England & Wales	Ordinary	100.0%	Holding	(30)
Liberty Global Broadband Holding Limited	UK-England & Wales	Ordinary	100.0%	Holding	(30)
Liberty Global Broadband I Limited (1)	UK-England & Wales	Ordinary	100.0%	Holding	(30)
Liberty Global Broadband II Limited	UK-England & Wales	Ordinary	100.0%	Holding	(30)
Liberty Global Content Investments Holding Limited	UK-England & Wales	Ordinary	100.0%	Holding	(30)
Liberty Global Content Investments Limited	UK-England & Wales	Ordinary	100.0%	Holding	(30)
Liberty Global Europe 2 Limited (1)	UK-England & Wales	Ordinary	100.0%	Holding	(30)
Liberty Global Europe Limited	UK-England & Wales	Ordinary	100.0%	Holding	(30)
Liberty Global Finance I (UK) Limited	UK-England & Wales	Ordinary	100.0%	Holding	(30)
Liberty Global Finance II (UK) Limited	UK-England & Wales	Ordinary	100.0%	Holding	(30)
Liberty Global Incorporated Limited (1)	UK-England & Wales	Ordinary	100.0%	Holding	(30)
Liberty Global plc	UK-England & Wales	Common	100.0%	Holding	(30)
Liberty Global Technology Limited (1)	UK-England & Wales	Ordinary	100.0%	Holding	(30)
Liberty Global Ventures Group Limited (1)	UK-England & Wales	Ordinary	100.0%	Holding	(30)
Liberty Global Ventures Holding Limited	UK-England & Wales		100.0%		(30)
Liberty Property Co I Limited	UK-England & Wales	Ordinary	100.0%	Holding	(29)
Liberty Property Co II Limited	UK-England & Wales	Ordinary	100.0%	Holding	(29)
Liberty Property Holdco III Limited	UK-England & Wales	Ordinary	100.0%	Holding	(32)
Matchco Limited	UK-England & Wales	Ordinary	76.0%	Dormant	(29)
MXLG Acquisitions Limited	UK-England & Wales	Ordinary	50.0%	Joint Venture	(33)
ntl (Aylesbury and Chiltern) Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
ntl (B) Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
ntl (BMC Plan) Pension Trustees Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)

Name of subsidiary	Country of incorporation	Holdings	Proportion of voting rights and shares held	Nature of business	Registered address
ntl (Broadland) Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
ntl (CWC) Corporation Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
ntl (CWC) Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
ntl (South East) Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
ntl (V)	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
ntl Business Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
ntl CableComms Bolton	UK-England & Wales	Ordinary	100.0%	In Liquidation	(31)
ntl CableComms Bromley	UK-England & Wales	Ordinary & Preference	100.0%	In Liquidation	(31)
ntl CableComms Cheshire	UK-England & Wales	Ordinary & Preference	100.0%	Dormant	(29)
ntl CableComms Derby	UK-England & Wales	Ordinary	100.0%	In Liquidation	(31)
ntl CableComms East Lancashire	UK-England & Wales	Ordinary & Preference	100.0%	Dormant	(29)
ntl CableComms Greater Manchester	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
ntl CableComms Group Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
ntl CableComms Holdings No 1 Limited	UK-England & Wales	Ordinary	100.0%	Holding	(29)
ntl CableComms Holdings No 2 Limited	UK-England & Wales	Ordinary	100.0%	Holding	(29)
ntl CableComms Solent	UK-England & Wales	Ordinary & Preference	100.0%	Dormant	(29)
ntl CableComms Surrey	UK-England & Wales	Ordinary & Preference	100.0%	Dormant	(29)
ntl CableComms Sussex	UK-England & Wales	Ordinary & Preference	100.0%	In Liquidation	(31)
ntl CableComms Wessex	UK-England & Wales	Ordinary & Preference	100.0%	In Liquidation	(31)
ntl CableComms Wirral	UK-England & Wales	Ordinary & Preference	100.0%	Dormant	(29)
ntl Cambridge Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
ntl Communications Services Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
ntl Glasgow Holdings Limited	UK-England & Wales	Ordinary	100.0%	Holding	(34)
ntl Kirklees	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)

Name of subsidiary	Country of incorporation	Holdings	Proportion of voting rights and shares held	Nature of business	Registered address
ntl Kirklees Holdings Limited	UK-England & Wales	Ordinary	100.0%	Holding	(29)
ntl Manchester Cablevision Holding Company	UK-England & Wales	Ordinary & Preference	100.0%	Holding	(29)
ntl Midlands Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
ntl National Networks Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
NTL Pension Trustees II Limited	UK-England & Wales	Ordinary	100.0%	Corporate Trustee	(29)
ntl Pension Trustees Limited	UK-England & Wales	Ordinary	100.0%	Corporate Trustee	(29)
ntl Rectangle Limited	UK-England & Wales	Ordinary	100.0%	Holding	(29)
ntl South Central Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
ntl Telecom Services Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
ntl Trustees Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
ntl UK Telephone and Cable TV Holding Company Limited	UK-England & Wales	Ordinary & Deferred	100.0%	Holding	(29)
ntl Victoria Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
ntl Wirral Telephone and Cable TV Company	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
Sheffield Cable Communications Limited	UK-England & Wales	Ordinary	100.0%	In Liquidation	(31)
Smallworld Cable Limited	UK-England & Wales	Ordinary	100.0%	In Liquidation	(31)
Smashedatom Limited	UK-England & Wales	Ordinary	60.0%	In Liquidation	(31)
Telewest Communications (Cotswolds) Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
Telewest Communications (London South) Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
Telewest Communications (Midlands and North West) Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
Telewest Communications (North East) Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Telewest Communications (North East) Partnership	UK-England & Wales	Partnership Interests	100.0%	Partnership	(29)
Telewest Communications (South East) Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Telewest Communications (South Thames Estuary) Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Telewest Communications (South West) Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)

Name of subsidiary	Country of incorporation	Holdings	Proportion of voting rights and shares held	Nature of business	Registered address
Telewest Communications (Tyneside) Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Telewest Communications Cable Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
Telewest Communications Holdco Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
Telewest Communications Holdings Limited	UK-England & Wales	Ordinary	100.0%	Holding	(29)
Telewest Communications Networks Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Telewest Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Telewest Workwise Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
The Yorkshire Cable Group Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
Theseus No. 1 Limited	UK-England & Wales	Ordinary	100.0%	Holding	(29)
Theseus No. 2 Limited	UK-England & Wales	Ordinary	100.0%	Holding	(29)
Virgin Media Business Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Virgin Media Communications Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Virgin Media Employee Medical Trust Limited	UK-England & Wales	Ordinary	100.0%	Corporate Trustee	(29)
Virgin Media Finance plc	UK-England & Wales	Ordinary	100.0%	Financing	(29)
Virgin Media Finco Limited	UK-England & Wales	Ordinary	100.0%	Financing	(29)
Virgin Media Investment Holdings Limited	UK-England & Wales	Ordinary	100.0%	Financing	(29)
Virgin Media Investments Limited	UK-England & Wales	Ordinary	100.0%	Holding	(29)
Virgin Media Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Virgin Media Mobile Finance Limited	UK-England & Wales	Ordinary	100.0%	Handset Financing	(29)
Virgin Media Operations Limited	UK-England & Wales	Ordinary	100.0%	Holding	(29)
Virgin Media Payments Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Virgin Media PCHC II Limited	UK-England & Wales	Ordinary	100.0%	Holding	(29)
Virgin Media PCHC Limited	UK-England & Wales	Ordinary	100.0%	Holding	(29)
Virgin Media Secretaries Limited	UK-England & Wales	Ordinary	100.0%	Guarantor (PPF Levy)	(29)

Name of subsidiary	Country of incorporation	Holdings	Proportion of voting rights and shares held	Nature of business	Registered address
Virgin Media Secured Finance plc	UK-England & Wales	Ordinary	100.0%	Financing	(29)
Virgin Media Senior Investments Limited	UK-England & Wales	Ordinary	100.0%	Financing	(29)
Virgin Media Senior Secured Notes Issuer plc	UK-England & Wales	Ordinary	100.0%	Strike-off Requested	(29)
Virgin Media SFA Finance Limited	UK-England & Wales	Ordinary	100.0%	Financing	(29)
Virgin Media Wholesale Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Virgin Mobile Group (UK) Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
Virgin Mobile Holdings (UK) Limited	UK-England & Wales	Ordinary	100.0%	Dormant	(29)
Virgin Mobile Telecoms Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
Virgin Net Limited	UK-England & Wales	Ordinary	100.0%	In Liquidation	(31)
Virgin WiFi Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
VM Ireland Group Limited	UK-England & Wales	Ordinary	100.0%	Holding	(29)
VM Transfers (No 4) Limited	UK-England & Wales	Ordinary	100.0%	Holding	(29)
VM Transfers (No 5) Limited	UK-England & Wales	Ordinary & Deferred	100.0%	Holding	(29)
VMFH Limited	UK-England & Wales	Ordinary & Deferred	100.0%	Dormant	(29)
VMIH Sub Limited	UK-England & Wales	Ordinary	100.0%	Financing	(29)
VMWH Limited	UK-England & Wales	Ordinary	100.0%	Holding	(29)
Windsor Television Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
X-TANT Limited	UK-England & Wales	Ordinary	100.0%	In Liquidation	(31)
Yorkshire Cable Communications Limited	UK-England & Wales	Ordinary	100.0%	Telecoms	(29)
CableTel Northern Ireland Limited	UK-Northern Ireland	Ordinary	100.0%	Dormant	(35)
CableTel Scotland Limited	UK-Scotland	Ordinary	100.0%	Telecoms	(36)
ntl Glasgow	UK-Scotland	Ordinary	100.0%	Telecoms	(36)
Telewest Communications (Cumbernauld) Limited	UK-Scotland	Ordinary	100.0%	In Liquidation	(31)
Telewest Communications (Dumbarton) Limited	UK-Scotland	Ordinary	100.0%	In Liquidation	(31)
Telewest Communications (Dundee & Perth) Limited	UK-Scotland	Ordinary	100.0%	Dormant	(36)
Telewest Communications (Falkirk) Limited	UK-Scotland	Ordinary	100.0%	In Liquidation	(31)

Name of subsidiary	Country of incorporation	Holdings	Proportion of voting rights and shares held	Nature of business	Registered address
Telewest Communications (Glenrothes) Limited.	UK-Scotland	Ordinary	100.0%	Dormant	(36)
Telewest Communications (Motherwell) Limited	UK-Scotland	Ordinary	100.0%	In Liquidation	(31)
Telewest Communications (Scotland Holdings) Limited	UK-Scotland	Ordinary	100.0%	Dormant	(36)
Telewest Communications (Scotland) Limited	UK-Scotland	Ordinary	100.0%	Dormant	(36)
LGI Technology Holdings Inc.	USA-Colorado	Common	100.0%	Holding	(37)
Liberty Global Management, LLC	USA-Colorado	Membership Interests	100.0%	Services	(37)
Liberty Global Services, LLC	USA-Colorado	Membership Interests	100.0%	Services	(37)
TCI US West Cable Communications Group	USA-Colorado	Partnership Interests	100.0%	Partnership	(37)
Tyneside Cable Limited Partnership	USA-Colorado	Partnership Interests	100.0%	Partnership	(37)
UIM Aircraft, LLC	USA-Colorado	Membership Interests	100.0%	Partnership	(37)
United Cable (London South) Limited Partnership	USA-Colorado	Partnership Interests	100.0%	Partnership	(37)
Virgin Media Finance Holdings Inc.	USA-Colorado	Common	100.0%	Holding	(37)
Virgin Media Group LLC	USA-Colorado	Membership Interests	100.0%	Holding	(37)
Virgin Media Inc.	USA-Colorado	Common	100.0%	Holding	(37)
Associated SMR, Inc.	USA-Delaware	Common	100.0%	Holding	(37)
LGI International LLC	USA-Delaware	Membership Interests	100.0%	Holding	(37)
LGI Slovakia Holdings Inc.	USA-Delaware	Common	100.0%	Holding	(37)
LGI Ventures Management, Inc.	USA-Delaware	Common	100.0%	Holding	(37)
Liberty Global Japan, LLC	USA-Delaware	Membership Interests	100.0%	Holding	(37)
Liberty Global, Inc. (1)	USA-Delaware	Common	100.0%	Holding	(37)
Liberty Japan MC, LLC	USA-Delaware	Membership Interests	100.0%	Holding	(37)
Liberty Programming Japan, LLC	USA-Delaware	Membership Interests	100.0%	Holding	(37)
Liberty Spectrum Inc.	USA-Delaware	Common	100.0%	Holding	(37)
NTL (Triangle) LLC	USA-Delaware	membership interests	100.0%	Holding	(38)
NTL CableComms Group LLC	USA-Delaware	membership interests	100.0%	Holding	(38)

Name of subsidiary	Country of incorporation	Holdings	Proportion of voting rights and shares held	Nature of business	Registered address
Telenet Financing USD LLC	USA-Delaware	Membership Interests	100.0%	Holding	(38)
UnitedGlobalCom LLC	USA-Delaware	Membership Interests	100.0%	Holding	(37)
Unitymedia Finance LLC	USA-Delaware	Membership Interests	100.0%	Holding	(37)
UPC Financing Partnership	USA-Delaware	Partnership Interests	100.0%	Holding	(37)
Virgin Media Bristol LLC	USA-Delaware	Membership Interests	100.0%	Holding	(37)

(1) Subsidiary is a direct subsidiary of Liberty Global plc.

(2) Wolfganggasse 58 - 60, 1120 Vienna, Austria

(3) Tweekerkenstraat 26, 1000 Brussels, Belgium

(4) Harensesteenweg 228, 1800 Vilvoorde, Belgium

(5) Liersesteenweg 4, B-2800, Mechelen, Belgium

(6) Lozenberg 9, 1932 Zaventem, Belgium

(7) Schalienhoevedreef 20C, B-2800 Mechelen, Belgium

(8) Koralenhoeve 15, 2160 Wommelgem, Belgium

(9) Neerveldstraat 105, 1200 Sint Lambrechts Woluwe - Brussels, Belgium

(10) Zavisova 502/5, 14000, Praha 4, District of Prague 4, Czech Republic

(11) 52 Boulevard Sebastopol, 75003, Paris, France

(12) Aachener Strasse 746-750, Cologne, 50933-Germany

(13) Soroksari Ut 30-34, Haller Gardens Building, Budapest 1095, Hungary

(14) Building P2, East Point Business Park, Clontarf, Dublin 3, Republic of Ireland

(15) 89F, Rue de Pafebruch, L-8303 Capellen, Luxembourg

(16) Development House, St. Anne Street, Floriana FRN 9010, Malta

(17) Boeing Avenue 53, 1119 PE Schiphol-Rijk, The Netherlands

(18) Atoomweg 100, 3542AB Utrecht, The Netherlands

(19) Al. Jana Pawla II 27, 00-867 Warszawa, Poland

(20) Strada Nordului nr. 62 D Sector 1, 014104 Bucharest, Romania

(21) Nordului nr. 62 D Sector 1, 014104 Bucharest, Romania

(22) Ševčenkova 36, 851 01 Bratislava, Slovak Republic

(23) Rue de Lausanne 53, 1110 Morges, Vaud, Switzerland

(24) Passage du Lion d'Or, Case Postale 292, 1040 Echallens

(25) Route de Lausanne 2, 1096 Cully, Vaud, Switzerland

(26) Richtiplatz 5, 8304 Wallisellen/ZH

(27) Avenue de la Gare 15, 2000 Neuchâtel, Switzerland

(28) Berkshire House, 168-173 High Holborn, London WC1V 7AA, England

(29) Media House, Bartley Wood Business Park, Hook, Hampshire, RG27 9UP, England

(30) Griffin House, 161 Hammersmith Road, London W6 8BS, England

(31) c/o Ernst & Young LLP, 1 More London Place, London SE1 2AF

(32) 2 Rue Peternelchen, L-2370 Howald, Luxembourg

(33) 100 Fetter Lane, London EC4A 1BN, England

(34) 1 More London Place, London SE1 2AF, England

(35) Unit 3, Blackstaff Road, Kennedy Way Industrial Estate, Belfast, BT11 9AP, Northern Ireland

(36) 1 South Gyle Crescent Lane, Edinburgh, EH12 9EG, Scotland

(37) Triangle Building, 1550 Wewatta Street, Suite 1000, Denver, CO 80202, USA

(38) 251 Little Falls Drive, Wilmington, DE 19808, USA

(28) Subsequent Events

On February 27, 2019, we entered into an agreement to sell our operations in Switzerland, **"UPC Switzerland,"** to Sunrise Communications Group AG ("**Sunrise**") for a total enterprise value of CHF 6.3 billion ($6.3 billion at the February 27, 2019 rate). Sunrise will acquire UPC Switzerland inclusive of the UPC Holding borrowing group's existing senior and senior secured notes and associated derivatives (together, the "**UPC Holding Notes**") and certain other debt items, which have an aggregate value equal to approximately CHF 3.7 billion ($3.7 billion at the February 27, 2019 rate) at December 31, 2018. The net cash proceeds are expected to be CHF 2.6 billion ($2.6 billion at the February 27, 2019 rate), subject to customary other liabilities and working capital adjustments at completion, and are expected to be used for general corporate purposes.

As the transaction is structured, a change of control will not be triggered under the UPC Holding Notes. UPC Facility AR under the UPC Holding Bank Facility, which had an outstanding balance at December 31, 2018 of $1,645.0 million, is expected to be repaid in full at or prior to closing.

Closing of the transaction is subject to regulatory approval, which is expected prior to year-end 2019, and approval by Sunrise's shareholders with respect to an associated capital increase.

In connection with the sale of UPC Switzerland, we have agreed to provide certain transitional services to Sunrise for a period of up to five years following completion. Such transitional services principally comprise network and information technology-related functions. The annual charges for such transitional services will depend on the actual level of transitional services required by Sunrise.

LIBERTY GLOBAL PLC

PARENT COMPANY FINANCIAL STATEMENTS

LIBERTY GLOBAL PLC
STATEMENTS OF FINANCIAL POSITION
December 31, 2018 and 2017
(Parent Company Only)

	December 31, 2018	December 31, 2017
	in millions	
Fixed assets:		
Investments — group undertakings (note 3)	$ 43,161.8	$ 40,376.7
Property and equipment, net (note 9)	7.9	8.8
Intangible assets not subject to amortization (note 9)	3.0	3.0
Total fixed assets	43,172.7	40,388.5
Current assets:		
Notes receivable — group undertakings (all due after more than one year) (note 4)	1,145.9	918.2
Accrued interest receivable — group undertakings (note 4)	69.7	56.9
Other receivables — group undertakings (note 4)	7.5	22.2
Other assets: amounts recoverable in less than one year	1.9	0.7
Deferred income taxes (all due after more than one year)	4.8	4.8
Total debtors and other assets	1,229.8	1,002.8
Cash and cash equivalents	10.8	73.2
Restricted cash	5.2	5.2
Total current assets (including $1,150.7 million and $923.0 million, respectively, due after more than one year)	1,245.8	1,081.2
Total assets	44,418.5	41,469.7
Creditors: amounts falling due within one year (current liabilities):		
Note payable — group undertakings (note 4)	3,033.3	2,834.7
Trade creditors	3.5	0.9
Other accrued and current liabilities:		
Group undertakings (note 4)	902.5	1,043.0
Third-party	7.4	3.5
Total creditors: amounts falling due within one year (current liabilities)	3,946.7	3,882.1
Net current liabilities	(2,700.9)	(2,800.9)
Total assets less current liabilities	40,471.8	37,587.6
Creditors: amounts falling due after one year:		
Notes payable — group undertakings (note 4)	13,796.7	7,884.1
Other non-current liabilities:		
Group undertakings (note 4)	—	983.5
Third-party	3.3	2.7
Total creditors: amounts falling due after one year	13,800.0	8,870.3
Total liabilities	17,746.7	12,752.4
Net assets	$ 26,671.8	$ 28,717.3

The accompanying notes are an integral part of these financial statements.

LIBERTY GLOBAL PLC
STATEMENTS OF FINANCIAL POSITION — (Continued)
December 31, 2018 and 2017
(Parent Company Only)

	December 31, 2018	December 31, 2017
	in millions	
Capital and reserves (note 6):		
Called up share capital (note 5)	$ 7.4	$ 8.1
Share premium reserve	1,121.5	1,115.4
Merger reserve	4,749.3	4,749.3
Capital redemption reserve	3.0	2.3
Other reserves	131.7	131.7
Profit and loss account	20,659.0	22,710.6
Treasury shares, at cost	(0.1)	(0.1)
Shareholders' funds	$ 26,671.8	$ 28,717.3

The financial statements were approved by our board of directors and were signed on its behalf on April 25, 2019 by:

/s/ Michael T. Fries

Michael T. Fries
President, Chief Executive Officer and Director
Company registered number: **8379990**

The accompanying notes are an integral part of these financial statements.

LIBERTY GLOBAL PLC
STATEMENTS OF EQUITY
December 31, 2018 and 2017
(Parent Company Only)

	Called up share capital	Share premium reserve	Merger reserve	Capital redemption reserve	Other reserves	Profit and loss account	Treasury shares, at cost	Shareholders' funds
	in millions							
Balance at January 1, 2017	$ 10.6	$ 1,103.5	$ 10,083.5	$ 1.5	$ 131.7	$ 24,908.3	$ (0.3)	$ 36,238.8
Loss for the financial period	—	—	—	—	—	(1,198.0)	—	(1,198.0)
Share issues, less expenses	—	11.9	—	—	—	—	—	11.9
Purchase and cancellation of our shares	(2.5)	—	—	0.8	—	(2,948.2)	—	(2,949.9)
Fair value of LiLAC Group distributed in Split-off Transaction	—	—	—	—	—	(3,474.3)	—	(3,474.3)
Merger reserve release	—	—	(5,334.2)	—	—	5,334.2	—	—
Share-based compensation	—	—	—	—	—	88.9	—	88.9
Treasury shares	—	—	—	—	—	—	0.2	0.2
Other	—	—	—	—	—	(0.3)	—	(0.3)
Balance at December 31, 2017	8.1	1,115.4	4,749.3	2.3	131.7	22,710.6	(0.1)	28,717.3
Loss for the financial period	—	—	—	—	—	(183.0)	—	(183.0)
Purchase and cancellation of our shares	(0.7)	—	—	0.7	—	(2,010.0)	—	(2,010.0)
Share-based compensation	—	6.1	—	—	—	141.4	—	147.5
Balance at December 31, 2018	$ 7.4	$ 1,121.5	$ 4,749.3	$ 3.0	$ 131.7	$ 20,659.0	$ (0.1)	$ 26,671.8

The accompanying notes are an integral part of these financial statements.

(1) Basis of Presentation

Liberty Global plc (**Liberty Global**) is a public limited company organized under the laws of England and Wales. In these notes, the terms "we," "our," "our company" and "us" refer to Liberty Global. Liberty Global is an international provider of video, broadband internet, fixed-line telephony and mobile communications services to residential customers and businesses in Europe.

These financial statements have been prepared in accordance with Financial Reporting Standard 101, *Reduced Disclosure Framework* (**FRS 101**).

In these financial statements, the company has applied the exemptions available under FRS 101 in respect of the following disclosures:

- Cash Flow Statement and related notes;
- Comparative period reconciliations for share capital, tangible fixed assets and intangible assets;
- Disclosures in respect of transactions with wholly owned subsidiaries;
- Disclosures in respect of capital management;
- The effects of new but not yet effective International Financial Reporting Standards (**IFRS**);
- Disclosures in respect of the compensation of Key Management Personnel; and
- Disclosures of transactions with a management entity that provides key management personnel services to the company.

The capitalized terms used throughout this annual report are defined in the notes to the consolidated financial statements for year ended December 31, 2018 included elsewhere in this annual report (the **Consolidated Financial Statements**). As the Consolidated Financial Statements include the equivalent disclosures, the Company has also taken the exemptions under FRS 101 available in respect of the following disclosures:

- IFRS 2, *Share Based Payments,* in respect of group settled share-based payments.

These accounts present information about Liberty Global as an individual undertaking and not about its consolidated group. Under section 408 of the Companies Act, we are exempt from the requirement to present our own profit and loss account.

Unless otherwise indicated, translations into U.S. dollars are calculated as of December 31, 2018.

(2) Summary of Significant Accounting Policies

The accounting policies set forth below have, unless otherwise stated, been applied consistently to all periods presented in these financial statements.

Foreign Currency

Our presentation and functional currency is the U.S. dollar.

Estimates

See note 3 to the Consolidated Financial Statements for significant estimates and judgments which are reflected in our investments in subsidiaries. No additional significant estimates or judgments have been identified for the Company.

Going Concern

The accompanying financial statements are prepared under the assumption that we will continue to operate as a going concern, which contemplates the realization of assets and the liquidation of liabilities in the ordinary course of business. Our ability to continue as a going concern is dependent upon our ability to generate sufficient cash flows and earnings from our group undertakings' operations. We have evaluated and consider our business to be a going concern based on our capital resources, the historical operating profitability of our group undertakings, the long-term nature of our commitments and the prospects of our group undertakings.

Share Issues

Share issues are recorded at fair value of the net proceeds.

Investments

Investments in subsidiary undertakings are stated at cost. Where investments are acquired in exchange for a share issue we record the investment at fair value of the underlying share capital on the transaction date. For further information regarding our investments, see note 3.

Property and Equipment

Property and equipment are stated at cost less accumulated depreciation.

Depreciation is computed using the straight-line method over the estimated useful life of the underlying asset. Useful lives used to depreciate our property and equipment are assessed periodically and are adjusted when warranted. For additional information regarding the useful lives of our property and equipment, see note 9.

Additions, replacements and improvements that extend the asset life are capitalized. Repairs and maintenance are charged to operations.

Impairment of Property and Equipment and Intangible Assets

When circumstances warrant, we review the carrying amounts of our property and equipment and our intangible assets to determine whether such carrying amounts continue to be recoverable. Such changes in circumstance may include (i) an expectation of a sale or disposal of a non-current asset or asset group, (ii) adverse changes in market or competitive conditions, (iii) an adverse change in legal factors or business climate in the markets in which we operate and (iv) operating or cash flow losses. For purposes of impairment testing, non-current assets are grouped at the lowest level for which cash flows are largely independent of other assets and liabilities, generally at or below the cash-generating unit level. If the carrying amount of the asset or asset group is greater than the expected discounted cash flows to be generated by such asset or asset group, an impairment adjustment is recognized. Such adjustment is measured by the amount that the carrying value of such asset or asset group exceeds its fair value. We generally measure fair value by considering (a) sale prices for similar assets, (b) discounted estimated future cash flows using an appropriate discount rate and/or (c) estimated replacement cost. Assets to be disposed of are carried at the lower of their financial statement carrying amount or fair value less costs to sell.

Interest-bearing Borrowings

Debt is stated at the fair value of the consideration received on the issue of the capital instrument after deduction of issue costs. The finance cost of the debt is amortized over the term of the debt at a constant rate on the carrying amount.

Share-Based Compensation

We recognize all share-based payments to employees, including grants of employee share incentive awards, based on their grant-date fair values and our estimates of forfeitures. We recognize the fair value of outstanding awards as a charge to operations over the vesting period.

We have calculated the expected life of options and SARs granted by Liberty Global to employees based on historical exercise trends. The expected volatility for Liberty Global options and SARs is generally based on a combination of (i) historical volatilities of Liberty Global ordinary shares for a period equal to the expected average life of the Liberty Global awards and (ii) volatilities implied from publicly traded Liberty Global options.

Where we grant options over our own shares to the employees of our subsidiaries we recognize an increase in the cost of investment in our subsidiaries equivalent to the equity-settled share-based payment charge recognized in our subsidiary's financial statements with the corresponding credit being recognized directly in equity. Amounts recharged to and reimbursed by the subsidiary are recognized as a reduction in the cost of investment in subsidiary. If the cumulative amount recharged and reimbursed exceeds the increase in the cost of investment the excess is recognized as a dividend.

We generally issue new shares of Liberty Global ordinary shares when Liberty Global options or SARs are exercised and when restricted share units and performance-based restricted share units vest. Although we repurchase Liberty Global ordinary shares from time to time, the parameters of our share purchase and redemption activities are not established solely with reference to the dilutive impact of our share-based compensation plans.

Income Taxes

The charge for taxation is based on the profit or loss for the period and takes into account deferred taxation related to temporary differences between the treatment of certain items for taxation and accounting purposes.

Deferred tax is measured on an undiscounted basis at the tax rates that are expected to apply in the periods in which differences reverse, based on tax rates and laws enacted or substantively enacted at the statement of financial position date.

Deferred tax assets are recognized only to the extent that the directors consider it more likely than not that there will be suitable taxable profits from which the future reversal of the underlying temporary differences can be deducted.

Foreign Currency Transactions

Transactions denominated in currencies other than our functional currency are recorded based on exchange rates at the time such transactions arise. Changes in exchange rates with respect to amounts recorded in our statements of financial position related to these non-functional currency transactions result in transaction gains or losses that are reflected in our profit and loss accounts as unrealized (based on the applicable period end exchange rates) or realized upon settlement of the transactions.

(3) Investments in Group Undertakings

The details of our investment in group undertakings during 2018 and 2017 are set forth below (in millions):

Balance at January 1, 2017	$ 32,766.5
Additions, other than share-based compensation (a)	7,445.0
Amounts related to share-based compensation (b)	165.2
Balance at December 31, 2017	40,376.7
Additions, other than share-based compensation (c)	3,187.2
Amounts related to share-based compensation (b)	(402.1)
Balance at December 31, 2018	$ 43,161.8

(a) The increase in our investment during 2017 is primarily due to the net effect of (i) our company subscribing to 85 ordinary shares of Liberty Global, Inc. (**LGI**) in order to facilitate the conversion of a note receivable from LGI into an additional investment in LGI and (ii) the impact of the Split-off Transaction. For additional information regarding the Split-off Transaction, see note 6 to the Consolidated Financial Statements.

(b) Represents additions attributable to share-based compensation associated with employees of our subsidiaries, less amounts that we recharge to our subsidiaries in connection with the exercise of our SARs and options and the vesting of our restricted share awards held by employees of our subsidiaries, as adjusted to reflect any deemed dividends arising from amounts charged in excess of the allocated share-based compensation with respect to certain of our subsidiaries.

(c) The increase in our investment during 2018 is primarily due to the sale of the share capital of Binan Investments BV by LG Broadband II Limited, a subsidiary of Liberty Global, to Liberty Global.

Subsidiaries

For a listing of our subsidiaries at December 31, 2018, see note 27 to the Consolidated Financial Statements.

(4) Transactions with Group Undertakings

The following table provides details of our group undertaking balances:

	December 31, 2018	December 31, 2017
	in millions	
Notes receivable:		
LG Incorporated Limited Note (a)	$ 823.9	$ 753.5
LG Ventures Group Limited Note (b)	114.1	81.9
LG Property Holdco Sarl Note (c)	70.7	—
LGCI Holdings Limited Note (d)	66.1	65.6
LG Technology Limited Note (e)	59.1	—
LGCI Holdco III Ltd Note (f)	12.0	11.9
LG Content Investments BV Note (g)	—	5.3
Total notes receivable	1,145.9	918.2
Interest receivable (h)	69.7	56.9
Other receivables (i)	7.5	22.2
Total	$ 1,223.1	$ 997.3
Non-current notes payable:		
LG Broadband I Limited Note I (j)	$ 7,272.1	$ 5,502.3
LG Broadband II Limited Note (k)	3,175.5	—
LG Broadband I Limited Note III (l)	1,642.8	1,578.0
LG Incorporated Limited Note (m)	977.0	—
LG Broadband I Limited Note II (n)	729.3	803.8
Total non-current notes payable	13,796.7	7,884.1
Current note payable (o)	3,033.3	2,834.7
Other accrued and current liabilities (p)	902.5	1,043.0
Other non-current liabilities (p)	—	983.5
Total	$ 17,732.5	$ 12,745.3

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(a) Represents a note receivable from Liberty Global Incorporated Ltd (**LG Incorporated Limited**). Pursuant to the loan agreement the maturity date is November 30, 2026, however Liberty Global may agree to advance additional amounts to LG Incorporated Limited at any time and LG Incorporated Limited may, with agreement from Liberty Global, repay all or part of the outstanding principal at any time prior to the maturity date. The note receivable is subject to further borrowings and repayments. The interest rate on this loan, which is subject to adjustment, was 7.02% as of December 31, 2018.

(b) Represents a note receivable from Liberty Global Ventures Group Limited (**LG Ventures Group Limited**). Pursuant to the loan agreement the maturity date is August 3, 2024, however Liberty Global may agree to advance additional amounts to

LG Ventures Group Limited at any time and LG Ventures Group Limited may, with agreement from Liberty Global, repay all or part of the outstanding principal at any time prior to the maturity date. The note receivable is subject to further borrowings and repayments. The interest rate on this loan, which is subject to adjustment, was 6.95% as of December 31, 2018.

(c) Represents a British pound sterling denominated note receivable from LG Property Holdco Sarl. Pursuant to the loan agreement the maturity date is November 30, 2028, however Liberty Global may agree to advance additional amounts to LG Property Holdco Sarl at any time and LG Property Holdco Sarl may, with agreement from Liberty Global, repay all or part of the outstanding principal at any time prior to the maturity date. The note receivable is subject to further borrowings and repayments. The interest rate on this loan, which is subject to adjustment, was 6.24% as of December 31, 2018.

(d) Represents a euro denominated note receivable from LGCI Holdings Limited. Pursuant to the loan agreement the maturity date is March 9, 2024, however Liberty Global may agree to advance additional amounts to LGCI Holdings Limited at any time and LGCI Holdings Limited may, with agreement from Liberty Global, repay all or part of the outstanding principal at any time prior to the maturity date. The note receivable is subject to further borrowings and repayments. The interest rate on this loan, which is subject to adjustment, was 5.16% as of December 31, 2018.

(e) Represents a British pound sterling denominated note receivable from LG Technology Limited. Pursuant to the loan agreement the maturity date is March 23, 2028, however Liberty Global may agree to advance additional amounts to LG Technology Limited at any time and LG Technology Limited may, with agreement from Liberty Global, repay all or part of the outstanding principal at any time prior to the maturity date. The note receivable is subject to further borrowings and repayments. The interest rate on this loan, which is subject to adjustment, was 5.94% as of December 31, 2018.

(f) Represents a British pound sterling denominated note receivable from LGCI Holdco III Ltd. Pursuant to the loan agreement the maturity date is September 11, 2024, however Liberty Global may agree to advance additional amounts to LGCI Holdco III Ltd at any time and LGCI Holdco III Ltd may, with agreement from Liberty Global, repay all or part of the outstanding principal at any time prior to the maturity date. The note receivable is subject to further borrowings and repayments. The interest rate on this loan, which is subject to adjustment, was 6.74% as of December 31, 2018.

(g) Represents a euro denominated note receivable from Liberty Global Content Investments BV (**LG Content Investments BV**). Pursuant to the loan agreement the maturity date is September 23, 2022, however Liberty Global may agree to advance additional amounts to LG Content Investments BV at any time and LG Content Investments BV may, with agreement from Liberty Global, repay all or part of the outstanding principal at any time prior to the maturity date. The note receivable is subject to further borrowings and repayments. The interest rate on this loan, which is subject to adjustment, was 7.33% as of December 31, 2018.

(h) Represents interest related to our various notes receivable as discussed above.

(i) Represents certain receivables from other Liberty Global subsidiaries arising in the normal course of business.

(j) Represents a euro denominated note payable to Liberty Global Broadband I Limited (**LG Broadband I Limited**). Pursuant to the loan agreement the maturity date is January 31, 2024, however LG Broadband I Limited may agree to advance additional amounts to our company at any time and our company may, with agreement from LG Broadband I Limited, repay all or part of the outstanding principal at any time prior to the maturity date. The note payable is subject to further borrowings and repayments. The interest rate on this loan, which is subject to adjustment, was 4.88% as of December 31, 2018.

(k) Represents a euro denominated note payable to LG Broadband II Limited. Pursuant to the loan agreement the maturity date is December 27, 2028, however LG Broadband II Limited may agree to advance additional amounts to our company at any time and our company may, with agreement from LG Broadband II Limited, repay all or part of the outstanding principal at any time prior to the maturity date. The note payable is subject to further borrowings and repayments. The interest rate on this loan, which is subject to adjustment, was 5.61% as of December 31, 2018.

(l) Represents a euro denominated note payable to LG Broadband I Limited. Prior to January 1, 2018, this note payable was British pound sterling denominated. Pursuant to the loan agreement the maturity date is December 28, 2026, however LG Broadband I Limited may agree to advance additional amounts to our company at any time and our company may, with agreement from LG Broadband I Limited, repay all or part of the outstanding principal at any time prior to the maturity date. The note payable is subject to further borrowings and repayments. The interest rate on this loan, which is subject to adjustment, was 4.64% as of December 31, 2018.

(m) Represents a note payable to LG Incorporated Limited. Pursuant to the loan agreement the maturity date is January 1, 2028, however LG Incorporated Limited may agree to advance additional amounts to our company at any time and our company may, with agreement from LG Incorporated Limited, repay all or part of the outstanding principal at any time prior to the maturity date. The note payable is subject to further borrowings and repayments. The interest rate on this loan, which is subject to adjustment, was 6.49% as of December 31, 2018.

(n) Represents a euro denominated note payable to LG Broadband I Limited. Pursuant to the loan agreement the maturity date is November 30, 2026, however LG Broadband I Limited may agree to advance additional amounts to our company at any time and our company may, with agreement from LG Broadband I Limited, repay all or part of the outstanding principal at any time prior to the maturity date. The note payable is subject to further borrowings and repayments. The interest rate on this loan, which is subject to adjustment, was 5.36% as of December 31, 2018.

(o) Represents a revolving credit facility with Liberty Global Europe 2 Limited (**LG Europe 2**). Pursuant to the loan agreement the maturity date is July 16, 2023, however LG Europe 2 may agree to advance additional amounts to our company at any time and our company may, with agreement from LG Europe 2, repay all or part of the outstanding principal at any time prior to the maturity date. The note payable is subject to further borrowings and repayments. The interest rate on this loan, which is subject to adjustment, was 5.68% as of December 31, 2018.

(p) On December 31, 2018, a payable to LG Incorporated Limited was converted to the LG Incorporated Limited Note, as described in note (m) above.

(5) Called Up Share Capital

Our share capital comprises the following at December 31, 2018:

	Shares	Amount in millions
Allotted, called up and fully paid Liberty Global Shares:		
Class A of $0.01 each	204,450,499	$ 2.0
Class B of $0.01 each	11,099,593	0.1
Class C of $0.01 each	531,174,389	5.3
Total share capital		$ 7.4

The details of our share activity during 2018 are set forth below:

	Class A of $0.01 each	Class B of $0.01 each	Class C of $0.01 each	Total Shares
Balance at January 1, 2018	219,668,579	11,102,619	584,332,055	815,103,253
Additional issuances	410,541	—	1,007,590	1,418,131
Repurchases	(15,649,900)	—	(54,211,059)	(69,860,959)
Other	21,279	(3,026)	45,803	64,056
Balance at December 31, 2018	204,450,499	11,099,593	531,174,389	746,724,481

For additional information regarding our share repurchases, see note 13 to the Consolidated Financial Statements.

(6) Reserves

Our called up share capital and reserves comprise the following at December 31, 2018 and 2017:

	Called up share capital	Share premium reserve	Merger reserve	Capital redemption reserve	Other reserves	Profit and loss account	Treasury shares, at cost	Shareholders' funds
	in millions							
Balance at January 1, 2017	$ 10.6	$ 1,103.5	$ 10,083.5	$ 1.5	$ 131.7	$ 24,908.3	$ (0.3)	$ 36,238.8
Loss for the financial period	—	—	—	—	—	(1,198.0)	—	(1,198.0)
Share issues, less expenses	—	11.9	—	—	—	—	—	11.9
Purchase and cancellation of our shares (a)	(2.5)	—	—	0.8	—	(2,948.2)	—	(2,949.9)
Fair value of LiLAC Group distributed in Split-off Transaction	—	—	—	—	—	(3,474.3)	—	(3,474.3)
Merger reserve release (b)	—	—	(5,334.2)	—	—	5,334.2	—	—
Share-based compensation	—	—	—	—	—	88.9	—	88.9
Treasury shares	—	—	—	—	—	—	0.2	0.2
Other	—	—	—	—	—	(0.3)	—	(0.3)
Balance at December 31, 2017	8.1	1,115.4	4,749.3	2.3	131.7	22,710.6	(0.1)	28,717.3
Loss for the financial period	—	—	—	—	—	(183.0)	—	(183.0)
Purchase and cancellation of our shares	(0.7)	—	—	0.7	—	(2,010.0)	—	(2,010.0)
Share-based compensation	—	6.1	—	—	—	141.4	—	147.5
Balance at December 31, 2018	$ 7.4	$ 1,121.5	$ 4,749.3	$ 3.0	$ 131.7	$ 20,659.0	$ (0.1)	$ 26,671.8

(a) Includes the impact of the Split-off Transaction. For additional information regarding the Split-off Transaction, see note 6 to the Consolidated Financial Statements.

(b) During 2017, in connection with the completion of the VodafoneZiggo JV Transaction, our company received an equalization payment from Vodafone of €806.8 million ($845.3 million at the applicable rates). This payment realized an element of the merger reserve related to the 2014 acquisition of the shares of Ziggo Holding B.V. that we did not already own. During 2017, we released all realized values in merger reserves, including both the $845.3 million and the $4,488.9 million related to the VodafoneZiggo JV Transaction and Split-off Transaction, respectively.

Share Repurchases

Our board of directors has approved share repurchase programs for our Liberty Global Shares. In addition, from November 2016 through the completion of the Split-off Transaction, we were authorized to repurchase our LiLAC Shares. In accordance with English law, we may implement the program in conjunction with our brokers and other financial institutions with whom we have relationships within certain preset parameters. The timing of the repurchase of shares pursuant to our share repurchase programs, which may be suspended or discontinued at any time, is dependent on a variety of factors, including market conditions and applicable law and may continue during closed periods in accordance with applicable restrictions. As of December 31, 2018, the remaining amount authorized for repurchases of Liberty Global Shares was $566.2 million.

The following table provides details of our share repurchases during 2018 and 2017:

	Class A ordinary shares		Class C ordinary shares		
	Shares repurchased	Average price paid per share (a)	Shares repurchased	Average price paid per share (a)	Total cost (a)
					in millions
Liberty Global Shares:					
2018	15,649,900	$ 29.67	54,211,059	$ 28.51	$ 2,010.0
2017	34,881,510	$ 33.73	52,523,651	$ 32.71	$ 2,894.7
LiLAC Shares:					
2017	2,062,233	$ 22.84	285,572	$ 22.25	$ 53.5

(a) Includes direct acquisition costs, where applicable.

(7) Debtors and Other Assets

Debtors and other assets consist of the following:

	December 31,	
	2018	2017
	in millions	
Amounts owed by group undertakings:		
Notes receivable (note 4)	$ 1,145.9	$ 918.2
Interest and other receivables (note 4)	77.2	79.1
Total amounts owed by group undertakings	1,223.1	997.3
Other assets	1.9	0.7
Deferred income taxes	4.8	4.8
Total debtors and other assets (a)	$ 1,229.8	$ 1,002.8

(a) At December 31, 2018 and 2017, $1,150.7 million and $923.0 million, respectively, is due after more than one year. For further information see note 4.

(8) Creditors

Creditors consists of the following:

	December 31, 2018	December 31, 2017
	in millions	
Amounts falling due within one year:		
Note payable — group undertakings (note 4)	$ 3,033.3	$ 2,834.7
Other accrued and current liabilities — group undertakings (note 4)	902.5	1,043.0
Other accrued and current liabilities — third-party	7.4	3.5
Trade creditors	3.5	0.9
Total creditors — amounts falling due within one year	$ 3,946.7	$ 3,882.1
Amounts falling due after one year:		
Notes payable — group undertakings (note 4)	$ 13,796.7	$ 7,884.1
Other non-current liabilities — group undertakings (note 4)	—	983.5
Other non-current liabilities — third-party	3.3	2.7
Total creditors — amounts falling due after one year	$ 13,800.0	$ 8,870.3

(9) Non-Current Assets

Property and Equipment, Net

Changes in our property and equipment and the related accumulated depreciation are set forth below (in millions):

Cost:	
January 1, 2018	$ 10.5
Additions	0.6
December 31, 2018	$ 11.1
Accumulated depreciation:	
January 1, 2018	$ (1.7)
Depreciation	(1.5)
December 31, 2018	$ (3.2)
Property and equipment, net:	
December 31, 2018	$ 7.9

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(a) The estimated useful lives at December 31, 2018 range from 3 to 10 years.

Other Indefinite-lived Intangible Assets

Our intangible assets relate to our domain names. These intangible assets are considered to have indefinite lives and had an aggregate carrying value of $3.0 million at each of December 31, 2018 and 2017.

(10) Guarantees

We have issued guarantees for certain intra-group loans from Virgin Media Finco Limited to LG Europe 2. Interest on these loans is either (i) payable semi-annually at the applicable rate on April 15 and October 15 each year or (ii) upon mutual agreement between the debtor and creditor, is added to the principal outstanding.

The details of the loans that we have guaranteed at December 31, 2018 are as follows:

Loan due from LG Europe 2	Maturity date	Interest rate	Borrowing currency		U.S. $ equivalent	
			in millions			
Intra-group debt A and B	April 15, 2023	8.500%	£	1,501.5	$	1,913.7
Intra-group debt C	July 16, 2023	4.825%	£	3,324.5		4,237.2
Total					$	6,150.9

(11) Directors' Remuneration

Information regarding directors' compensation (remuneration), interests in shares and share options for consolidated Liberty Global is included within the *Directors' Remuneration Report* contained elsewhere in this annual report.