The UPC Holding Group

Combined Financial Statements
December 31, 2019

The UPC Holding Group

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KPMG LLP
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1225 17th Street
Denver, CO 80202-5598

Independent Auditors’ Report

The Board of Directors
UPC Holding Group:

We have audited the accompanying combined financial statements of UPC Holding Group, as defined in note 1 of the combined financial statements, which comprise the combined balance sheet as of December 31, 2019, and the related combined statements of operations, comprehensive earnings, equity, and cash flows for the year then ended, and the related notes to the combined financial statements.

Management’s Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these combined financial statements in accordance with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of combined financial statements that are free from material misstatement, whether due to fraud or error.

Auditors’ Responsibility

Our responsibility is to express an opinion on these combined financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the combined financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the combined financial statements. The procedures selected depend on the auditors’ judgment, including the assessment of the risks of material misstatement of the combined financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity’s preparation and fair presentation of the combined financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity’s internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the combined financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the 2019 combined financial statements referred to above present fairly, in all material respects, the financial position of UPC Holding Group, as defined in note 1 of the combined financial statements, as of December 31, 2019, and the results of its operations and its cash flows for the year then ended in accordance with U.S. generally accepted accounting principles.

KPMG LLP is a Delaware limited liability partnership and the U.S. member
firm of the KPMG network of independent member firms affiliated with
KPMG International Cooperative (“KPMG International”), a Swiss entity.

Other Matter

The accompanying combined financial statements of UPC Holding Group, as defined in note 1 of the combined financial statements, as of December 31, 2018 and for the years ended December 31, 2018 and 2017 were audited by other auditors whose report thereon dated March 14, 2019, expressed an unmodified opinion on those financial statements, before the revisions as described in notes 1, 5 and 13 to the combined financial statements.

As part of our audit of the 2019 combined financial statements, we also audited the adjustments described in notes 1, 5 and 13 that were applied to retrospectively revise the 2018 and 2017 combined financial statements. In our opinion, such adjustments are appropriate and have been properly applied. We were not engaged to audit, review, or apply any procedures to the 2018 and 2017 combined financial statements of UPC Holding Group, as defined in note 1 of the combined financial statements, other than with respect to the adjustments and, accordingly, we do not express an opinion or any other form of assurance on the 2018 and 2017 combined financial statements as a whole.

KPMG LLP

Denver, Colorado
April 3, 2020

The UPC Holding Group

COMBINED BALANCE SHEETS

	December 31,	
	2019	2018 (a)
	in millions	
ASSETS		
Current assets:		
Cash and cash equivalents	€ 22.1	€ 12.8
Trade receivables, net	195.0	220.9
Related-party receivables (note 13)	411.8	401.3
Derivative instruments (note 6)	86.3	108.0
Prepaid expenses	13.0	14.9
Current assets of discontinued operations (note 5)	—	55.7
Other current assets (note 4)	36.2	37.5
Total current assets	764.4	851.1
Related-party receivables (note 13)	247.7	518.8
Property and equipment, net (notes 8 and 10)	1,574.2	1,521.3
Goodwill (note 8)	3,126.3	3,028.8
Derivative instruments (note 6)	226.6	362.9
Long-term assets of discontinued operations (note 5)	—	1,430.8
Other assets, net (notes 4, 8, 10, 11 and 13)	193.2	86.3
Total assets	€ 6,132.4	€ 7,800.0

(a) As retrospectively revised, see note 5.

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

The UPC Holding Group

COMBINED BALANCE SHEETS — (Continued)

	December 31,	
	2019	2018 (a)
	in millions	
LIABILITIES AND COMBINED EQUITY (DEFICIT)		
Current liabilities:		
Accounts payable (note 13)	€ 159.5	€ 129.6
Deferred revenue	191.5	214.5
Derivative instruments (note 6)	120.3	130.1
Current portion of debt and finance lease obligations (notes 9, 10 and 13)	563.4	559.0
Current liabilities of discontinued operations (note 5)	—	231.5
Other accrued and current liabilities (note 10):		
Third-party	282.2	262.4
Related-party (note 13)	52.3	1,431.7
Total current liabilities	1,369.2	2,958.8
Long-term debt and finance lease obligations (notes 9 and 10):		
Third-party	3,224.7	4,618.3
Related-party (note 13)	—	597.9
Derivative instruments (note 6)	324.6	373.1
Long-term liabilities of discontinued operations (note 5)	—	122.3
Other long-term liabilities (notes 4, 10, 11, 13 and 14)	165.4	67.6
Total liabilities	5,083.9	8,738.0
Commitments and contingencies (notes 6, 9, 11, 14 and 16)		
Combined equity (deficit) (notes 12 and 15):		
Parent entities:		
Distributions and accumulated earnings (losses) in excess of contributions	157.3	(1,740.1)
Accumulated other comprehensive earnings, net of taxes	872.9	783.5
Total combined equity (deficit) attributable to parent entities	1,030.2	(956.6)
Noncontrolling interests	18.3	18.6
Total combined equity (deficit)	1,048.5	(938.0)
Total liabilities and combined equity (deficit)	€ 6,132.4	€ 7,800.0

(a) As retrospectively revised, see note 5.

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

The UPC Holding Group

COMBINED STATEMENTS OF OPERATIONS

	Year ended December 31,		
	2019	**2018 (a)**	**2017 (a)**
		in millions	
Revenue (notes 4, 13 and 17)	€ 1,549.0	€ 1,538.4	€ 1,627.8
Operating costs and expenses (exclusive of depreciation and amortization, shown separately below):			
Programming and other direct costs of services (note 13)	341.4	307.6	278.7
Other operating (note 13)	224.0	220.2	226.7
Selling, general and administrative (**SG&A**) (note 13)	254.7	227.2	228.8
Related-party fees and allocations, net (note 13)	160.2	54.1	208.8
Depreciation and amortization	343.3	345.0	363.7
Impairment, restructuring and other operating items, net	12.2	5.1	6.1
	1,335.8	1,159.2	1,312.8
Operating income	213.2	379.2	315.0
Non-operating income (expense):			
Interest expense:			
Third-party	(222.7)	(258.9)	(297.9)
Related-party (note 13)	(47.3)	(391.7)	(713.9)
Interest income (note 13)	12.1	107.2	151.3
Realized and unrealized gains (losses) on derivative instruments, net (note 6)	28.5	155.0	(165.2)
Foreign currency transaction gains (losses), net	(74.0)	(107.8)	141.3
Losses on debt modification and extinguishment, net (note 9)	(13.8)	(5.3)	(97.0)
Other income, net	7.5	5.6	10.6
	(309.7)	(495.9)	(970.8)
Loss from continuing operations before income taxes	(96.5)	(116.7)	(655.8)
Income tax expense (note 11)	(45.5)	(24.1)	(4.9)
Loss from continuing operations	(142.0)	(140.8)	(660.7)
Earnings from discontinued operations, net of taxes (note 5)	79.6	166.5	60.0
Gain on disposal of discontinued operation, net of taxes (note 5)	1.9	—	—
Net earnings (loss)	(60.5)	25.7	(600.7)
Net earnings attributable to noncontrolling interests	(3.7)	(7.3)	(10.7)
Net earnings (loss) attributable to parent entities	€ (64.2)	€ 18.4	€ (611.4)

(a) As retrospectively revised, see note 5.

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

The UPC Holding Group

COMBINED STATEMENTS OF COMPREHENSIVE EARNINGS (LOSS)

	Year ended December 31,		
	2019	**2018 (a)**	**2017 (a)**
		in millions	
Net earnings (loss)	€ (60.5)	€ 25.7	€ (600.7)
Other comprehensive earnings (loss), net of taxes (note 15):			
Continuing operations:			
Foreign currency translation adjustments	93.1	82.2	(54.0)
Pension-related adjustments and other	(2.9)	(14.7)	6.5
Other comprehensive earnings (loss) from continuing operations	90.2	67.5	(47.5)
Other comprehensive earnings (loss) from discontinued operations (note 5)	(0.8)	1.0	(1.0)
Other comprehensive earnings (loss)	89.4	68.5	(48.5)
Comprehensive earnings (loss)	28.9	94.2	(649.2)
Comprehensive earnings attributable to noncontrolling interests	(3.7)	(7.3)	(10.7)
Comprehensive earnings (loss) attributable to parent entities	€ 25.2	€ 86.9	€ (659.9)

(a) As retrospectively revised, see note 5.

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

The UPC Holding Group

COMBINED STATEMENTS OF EQUITY (DEFICIT)

	Parent entities				
	Distributions and accumulated losses in excess of contributions	**Accumulated other comprehensive earnings, net of taxes**	**Total combined deficit attributable to parent entities**	**Non-controlling interests**	**Total combined deficit**
			in millions		
Balance at January 1, 2017 (a)	€ (7,644.0)	€ 763.5	€ (6,880.5)	€ 81.5	€ (6,799.0)
Net loss	(611.4)	—	(611.4)	10.7	(600.7)
Impact of deconsolidation of UMI	—	—	—	(60.9)	(60.9)
Other comprehensive loss, net of taxes (note 15)	—	(48.5)	(48.5)	—	(48.5)
Conversion of related-party loans payable and accrued interest to equity in connection with the Slovakia Transaction (notes 12 and 13)	135.5	—	135.5	—	135.5
Cash consideration received for the Slovakia Transaction (notes 1 and 12)	44.5	—	44.5	—	44.5
Deemed contribution from other subsidiaries of Liberty Global (note 12)	21.3	—	21.3	—	21.3
Property and equipment contributed by parent entities (notes 8 and 13)	14.6	—	14.6	—	14.6
Distributions to noncontrolling interest owners	—	—	—	(11.2)	(11.2)
Share-based compensation (note 13)	10.2	—	10.2	—	10.2
Capital charge in connection with the exercise or vesting of share-based incentive awards (note 13)	(7.2)	—	(7.2)	—	(7.2)
Deemed contribution of technology-related services (notes 12 and 13)	5.7	—	5.7	—	5.7
Other, net	(17.4)	—	(17.4)	—	(17.4)
Balance at December 31, 2017	€ (8,048.2)	€ 715.0	€ (7,333.2)	€ 20.1	€ (7,313.1)

(a) As retrospectively revised, see note 5.

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

The UPC Holding Group

COMBINED STATEMENTS OF EQUITY (DEFICIT) — (Continued)

	Parent entities				
	Distributions and accumulated losses in excess of contributions	Accumulated other comprehensive earnings, net of taxes	Total combined deficit attributable to parent entities	Non-controlling interests	Total combined deficit
			in millions		
Balance at January 1, 2018, before effect of accounting change (a)	€ (8,048.2)	€ 715.0	€ (7,333.2)	€ 20.1	€ (7,313.1)
Accounting change (note 2)	14.0	—	14.0	—	14.0
Balance at January 1, 2018, as adjusted for accounting change	(8,034.2)	715.0	(7,319.2)	20.1	(7,299.1)
Net earnings	18.4	—	18.4	7.3	25.7
Other comprehensive earnings, net of taxes (note 15)	—	68.5	68.5	—	68.5
Conversion of the Shareholder Loan to equity (note 13)	7,240.0	—	7,240.0	—	7,240.0
Distribution to other subsidiaries of Liberty Global (note 12)	(976.7)	—	(976.7)	—	(976.7)
Distribution of a related-party receivable (notes 5 and 12)	(933.6)	—	(933.6)	—	(933.6)
Distribution in connection with the UPC Austria Distribution (notes 5 and 12)	563.4	—	563.4	(1.2)	562.2
Deemed contribution from other subsidiaries of Liberty Global (note 12)	10.6	—	10.6	—	10.6
Capital contribution from parent (note 5)	350.0	—	350.0	—	350.0
Share-based compensation (note 13)	11.8	—	11.8	—	11.8
Deemed contribution of technology-related services (notes 12 and 13)	9.0	—	9.0	—	9.0
Distributions to noncontrolling interest owners	—	—	—	(8.2)	(8.2)
Capital charge in connection with the exercise or vesting of share-based incentive awards (note 13)	(2.7)	—	(2.7)	—	(2.7)
Other, net	3.9	—	3.9	0.6	4.5
Balance at December 31, 2018	€ (1,740.1)	€ 783.5	€ (956.6)	€ 18.6	€ (938.0)

(a) As retrospectively revised, see note 5.

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

The UPC Holding Group

COMBINED STATEMENTS OF EQUITY (DEFICIT) — (Continued)

	Parent entities				
	Distributions and accumulated earnings (losses) in excess of contributions	**Accumulated other comprehensive earnings, net of taxes**	**Total combined equity attributable to parent entities**	**Non-controlling interests**	**Total combined equity**
			in millions		
Balance at January 1, 2019, before effect of accounting change (a)	€ (1,740.1)	€ 783.5	€ (956.6)	€ 18.6	€ (938.0)
Accounting change (note 2)	1.7	—	1.7	—	1.7
Balance at January 1, 2019, as adjusted for accounting change	(1,738.4)	783.5	(954.9)	18.6	(936.3)
Net loss	(64.2)	—	(64.2)	3.7	(60.5)
Other comprehensive earnings, net of taxes (note 15)	—	89.4	89.4	—	89.4
Distribution in connection with the UPC Transfers (notes 5 and 12)	1,692.4	—	1,692.4	—	1,692.4
Conversion of the Shareholder Loan to equity (note 13)	1,642.2	—	1,642.2	—	1,642.2
Distribution in connection with the Vodafone Group Distribution and the UPC DTH Distribution (notes 5 and 12)	(1,376.1)	—	(1,376.1)	—	(1,376.1)
Deemed contribution from other subsidiaries of Liberty Global (note 12)	9.8	—	9.8	—	9.8
Share-based compensation (note 13)	17.0	—	17.0	—	17.0
Capital charge in connection with the exercise or vesting of share-based incentive awards (note 13)	(10.9)	—	(10.9)	—	(10.9)
Deemed contribution of technology-related services (notes 12 and 13)	12.6	—	12.6	—	12.6
Other, net	(27.1)	—	(27.1)	(4.0)	(31.1)
Balance at December 31, 2019	€ 157.3	€ 872.9	€ 1,030.2	€ 18.3	€ 1,048.5

(a) As retrospectively revised, see note 5.

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

The UPC Holding Group

COMBINED STATEMENTS OF CASH FLOWS

	Year ended December 31,		
	2019	2018 (a)	2017 (a)
		in millions	
Cash flows from operating activities:			
Net earnings (loss)	€ (60.5)	€ 25.7	€ (600.7)
Earnings from discontinued operations	81.5	166.5	60.0
Loss from continuing operations	(142.0)	(140.8)	(660.7)
Adjustments to reconcile loss from continuing operations to net cash provided by operating activities from continuing operations:			
Share-based compensation expense	20.6	12.3	7.4
Related-party fees and allocations, net	160.2	54.1	208.8
Depreciation and amortization	343.3	345.0	363.7
Impairment, restructuring and other operating items, net	12.2	5.1	6.1
Interest expense on related-party loans	47.3	391.7	713.9
Amortization of deferred financing costs and non-cash interest	5.8	6.7	6.9
Realized and unrealized losses (gains) on derivative instruments, net	(28.5)	(155.0)	165.2
Foreign currency transaction losses (gains), net	74.0	107.8	(141.3)
Losses on debt modification and extinguishment, net	13.8	5.3	97.0
Deferred income tax expense (benefit)	4.4	1.1	(10.7)
Changes in operating assets and liabilities, net of the effects of acquisitions and dispositions:			
Receivables and other operating assets	450.9	369.9	279.5
Payables and accruals	(366.0)	(561.1)	(646.5)
Net cash provided by operating activities of continuing operations	596.0	442.1	389.3
Net cash provided by operating activities of discontinued operations	120.3	359.7	409.4
Net cash provided by operating activities	716.3	801.8	798.7
Cash flows from investing activities:			
Capital expenditures, net	(292.3)	(238.2)	(238.3)
Cash received from the settlement of a related-party receivable	200.5	—	—
Repayments from (advances to) related parties, net	(176.5)	628.5	(549.7)
Other investing activities, net	(74.2)	(29.7)	(2.5)
Net cash provided (used) by investing activities of continuing operations	(342.5)	360.6	(790.5)
Net cash used by investing activities of discontinued operations	(56.3)	(183.7)	(247.3)
Net cash provided (used) by investing activities	€ (398.8)	€ 176.9	€ (1,037.8)

(a) As retrospectively revised, see note 5.

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

The UPC Holding Group

COMBINED STATEMENTS OF CASH FLOWS — (Continued)

	Year ended December 31,		
	2019	2018 (a)	2017 (a)
		in millions	
Cash flows from financing activities:			
Repayments and repurchases of third-party debt and finance lease obligations	€ (1,633.8)	€ (1,019.4)	€ (1,606.5)
Borrowings of third-party debt	86.5	63.5	1,649.1
Borrowings of related-party debt, net	1,292.1	75.9	497.7
Advances to related parties	(200.5)	—	—
Net cash received (paid) related to derivative instruments	144.2	6.4	(137.7)
Capital contributions from other Liberty Global subsidiaries	—	350.0	44.4
Loan from LGE Holdco 2 to a related party	—	(350.0)	—
Payment of financing costs and debt premiums	—	(3.8)	(105.6)
Other financing activities, net	73.4	(4.9)	(19.5)
Net cash provided (used) by financing activities of continuing operations	(238.1)	(882.3)	321.9
Net cash used by financing activities of discontinued operations	(75.8)	(107.6)	(77.3)
Net cash provided (used) by financing activities	(313.9)	(989.9)	244.6
Effect of exchange rate changes on cash and cash equivalents and restricted cash:			
Continuing operations	5.7	(4.3)	0.2
Discontinued operations	—	—	(0.2)
Total	5.7	(4.3)	—
Net increase (decrease) in cash and cash equivalents and restricted cash:			
Continuing operations	21.1	(83.9)	(79.1)
Discontinued operations	(11.8)	68.4	84.6
Total	9.3	(15.5)	5.5
Cash and cash equivalents and restricted cash:			
Beginning of year	13.7	29.2	23.7
End of year	€ 23.0	€ 13.7	€ 29.2

(a) As retrospectively revised, see note 5.

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

The UPC Holding Group

COMBINED STATEMENTS OF CASH FLOWS — (Continued)

	Year ended December 31,		
	2019	2018 (a)	2017 (a)
		in millions	
Cash paid for interest – third-party:			
Continuing operations	€ 209.6	€ 244.6	€ 293.4
Discontinued operations	2.8	4.0	2.5
Total	€ 212.4	€ 248.6	€ 295.9
Cash paid for interest – related-party:			
Continuing operations	€ 1.2	€ 80.2	€ 51.0
Discontinued operations	0.7	4.4	6.2
Total	€ 1.9	€ 84.6	€ 57.2
Net cash paid for taxes:			
Continuing operations	€ 29.2	€ 19.4	€ 105.2
Discontinued operations	4.7	12.5	17.9
Total	€ 33.9	€ 31.9	€ 123.1
Details of end of period cash and cash equivalents and restricted cash:			
Cash and cash equivalents	€ 22.1	€ 12.8	€ 28.2
Restricted cash included in other current assets and other assets, net	0.9	0.9	0.9
Restricted cash included in current and long-term assets of discontinued operations	—	—	0.1
Total cash and cash equivalents and restricted cash	€ 23.0	€ 13.7	€ 29.2

(a) As retrospectively revised, see note 5.

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

(1) Basis of Presentation

UPC Holding B.V. (**UPC Holding**), UPC Slovakia Holding I B.V. (**UPC Slovakia**) and UPC Poland Holding B.V. (**UPC Poland**) are wholly-owned subsidiaries of Liberty Global plc (**Liberty Global**). The accompanying combined financial statements include the historical financial information of UPC Holding and its subsidiaries, UPC Slovakia and its subsidiaries (**Slovakia**) and UPC Poland and its subsidiaries (**Poland**) (collectively, the **UPC Holding Group**).

Prior to certain internal reorganization transactions completed by Liberty Global, Slovakia and Poland were wholly-owned subsidiaries of UPC Holding. In connection with these reorganization transactions, Slovakia and Poland were acquired by other subsidiaries of Liberty Global outside of the UPC Holding Group, herein referred to as "the **Slovakia Transaction**" and "the **Poland Transaction**", respectively. We accounted for the Slovakia Transaction and the Poland Transaction as common control transfers at historical cost. Following these transactions, Slovakia and Poland remain restricted subsidiaries for purposes of the facilities agreement and bond indentures governing the debt of the UPC Holding Group. Accordingly, the accompanying financial statements are prepared in order to comply with the facilities agreement and bond indentures governing the debt of the UPC Holding Group on a combined basis as a result of these changes in reporting entities. In these notes, the terms, "we," "our," "our company" and "us" may refer, as the context requires, to the UPC Holding Group.

As of December 31, 2019, our continuing operations comprise businesses that provide (i) residential and business-to-business (**B2B**) communications services in Switzerland, Poland and Slovakia and (ii) mobile services in Switzerland and Poland.

Through July 31, 2019, we provided residential and B2B communication services in Hungary, the Czech Republic and Romania. In addition, (i) through May 2, 2019, we provided direct-to-home satellite (**DTH**) services to residential customers in Hungary, the Czech Republic, Romania and Slovakia through a Luxembourg-based organization that we refer to as "**UPC DTH**" and (ii) through July 31, 2018, we provided residential and B2B communication services in Austria. In these combined financial statements, our operations in Austria, Hungary, the Czech Republic and Romania and the operations of UPC DTH are presented as discontinued operations for all applicable periods. For additional information regarding these dispositions, see note 5.

During the fourth quarter of 2019, we completed (i) the LG Services Transfer and (ii) the UPC France Transfer (each as defined and described in note 5, and together, the **UPC Transfers**). As the UPC Transfers constitute transactions between entities under common control, we have reflected these transfers at carryover basis and the applicable prior period information has been retrospectively revised to give effect to these transactions for all periods presented.

Unless otherwise indicated, the amounts presented in these notes relate only to our continuing operations, and ownership percentages and convenience translations into euros are calculated as of December 31, 2019.

These combined financial statements reflect our consideration of the accounting and disclosure implications of subsequent events through April 3, 2020, the date of issuance.

(2) Accounting Changes and Recent Accounting Pronouncements

Accounting Changes

ASU 2016-02

In February 2016, the Financial Accounting Standards Board (**FASB**) issued Accounting Standards Update (**ASU**) No. 2016-02, *Leases* (**ASU 2016-02**), which, for most leases, results in lessees recognizing right-of-use (**ROU**) assets and lease liabilities on the balance sheet. ASU 2016-02, as amended by ASU No. 2018-11, *Targeted Improvements*, requires lessees and lessors to recognize and measure leases at the beginning of the earliest period presented using one of two modified retrospective approaches. A number of optional practical expedients may be applied in transition. We adopted ASU 2016-02 on January 1, 2019.

The main impact of the adoption of ASU 2016-02 relates to the recognition of ROU assets and lease liabilities on our combined balance sheet for those leases classified as operating leases under previous accounting principals generally accepted in the U.S. (**GAAP**). In transition, we have applied the practical expedients that permit us not to reassess (i) whether expired or existing contracts contain a lease under the new standard, (ii) the lease classification for expired or existing leases or (iii) whether previously-capitalized initial direct costs would qualify for capitalization under the new standard. In addition, we have not used hindsight during transition.

Upon adoption of ASU 2016-02, on January 1, 2019 we recorded (i) ROU assets of €123.7 million and lease liabilities of €128.7 million related to operating leases and (ii) an increase to our distributions and accumulated earnings (losses) in excess of contributions of €1.7 million. In addition, we reclassified our existing prepaid lease expense, accrued lease expense and lease incentive liabilities, resulting in a net increase to our ROU assets of €6.6 million. The adoption of ASU 2016-02 did not have a significant impact on our combined statements of operations or cash flows.

We have implemented a new lease accounting system and related internal controls over financial reporting to meet the requirements of ASU 2016-02.

For additional information regarding our leases, see note 10.

ASU 2014-09

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers* (**ASU 2014-09**), 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 ASU 2014-09 effective January 1, 2018 by recording the cumulative effect of the adoption to our distributions and accumulated earnings (losses) in excess of contributions. 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 combined financial statements and notes has not been restated and continues to be reported under the accounting standards in effect for such period. The implementation of ASU 2014-09 did not have a material impact on our combined financial statements.

The principal impacts of ASU 2014-09 on our revenue recognition policies relate 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 previous accounting rules, we recognized revenue net of discounts during the promotional periods and did not recognize any revenue during free service periods. Under ASU 2014-09, revenue recognition for those contracts that contain substantive termination penalties is recognized uniformly over the contractual period. For contracts that do not have substantive termination penalties, we 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 ASU 2014-09, 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.

ASU 2014-09 also impacted our accounting for certain upfront costs directly associated with obtaining 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 ASU 2014-09, 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 ASU 2014-09, see note 4.

The cumulative effect of the adoption of ASU 2014-09 on our summary balance sheet information as of January 1, 2018 is as follows:

	Balance at December 31, 2017 (a)	ASU 2014-09 Adjustments	Balance at January 1, 2018
		in millions	
Assets:			
Other current assets	€ 21.9	14.9	€ 36.8
Other assets, net	€ 108.1	4.4	€ 112.5
Liabilities:			
Deferred revenue	€ 249.0	5.3	€ 254.3
Combined equity (deficit):			
Distributions and accumulated losses in excess of contributions	€ (8,048.2)	14.0	€ (8,034.2)

(a) As retrospectively revised, see note 5.

The impact of our adoption of ASU 2014-09 on our combined balance sheet as of December 31, 2018 was not materially different from the impacts set forth in the above January 1, 2018 summary balance sheet information. Similarly, the adoption of ASU 2014-09 did not have a material impact on our combined statement of operations for the year ended December 31, 2018.

Recent Accounting Pronouncements

ASU 2018-15

In August 2018, the FASB issued ASU No. 2018-15, *Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement that is a Service Contract* (**ASU 2018-15**), which requires entities to defer implementation costs incurred that are related to the application development stage in a cloud computing arrangement that is a service contract. Deferred implementation costs will be amortized over the term of the cloud computing arrangement and presented in the same expense line item as the cloud computing arrangement. All other implementation costs will generally be expensed as incurred. We adopted ASU 2018-15 on January 1, 2020 on a prospective basis. As a result of the adoption of ASU 2018-15, (i) certain implementation costs that were previously expensed as incurred will now be deferred as prepaid expenses and amortized over the term of the cloud computing arrangement and (ii) certain costs associated with developing interfaces between a cloud computing arrangement and internal-use software that were previously capitalized as property and equipment will now be deferred as prepaid expenses and amortized over the term of the cloud computing arrangement. We currently do not believe the adoption of ASU 2018-15 will have a significant impact on our combined financial statements.

ASU 2019-02

In March 2019, the FASB issued ASU No. 2019-02, *Improvements to Accounting for Costs of Films and License Agreements for Program Materials* (**ASU 2019-02**), which aligns the accounting for production costs of an episodic television series with the accounting for production costs of films. ASU 2019-02 removes the existing constraint that restricts capitalization of production costs to contracted revenue for episodic television series. The amended guidance also requires entities to test a film or license agreement for impairment at the film group level, addresses cash flow classification and provides new disclosure requirements. We adopted ASU 2019-02 on January 1, 2020 on a prospective basis. The adoption of ASU 2019-02 did not have a significant impact on our combined financial statements.

ASU 2016-13

In June 2016, the FASB issued ASU No. 2016-13, *Measurement of Credit Losses on Financial Statements* (**ASU 2016-13**), which changes the recognition model for credit losses related to assets held at amortized cost. ASU 2016-13 eliminates the threshold that a loss must be considered probable to recognize a credit loss and instead requires an entity to reflect its current estimate of lifetime expected credit losses. We adopted ASU 2016-13 on January 1, 2020 on a modified retrospective basis by recording a cumulative effect adjustment to our distributions and accumulated earnings (losses) in excess of contributions. The adoption of ASU 2016-13 did not have a significant impact on our combined financial statements.

ASU 2019-12

In December 2019, the FASB issued ASU No. 2019-12, *Simplifying the Accounting for Income Taxes (***ASU 2019-12**), which is intended to improve consistency and simplify several areas of existing guidance. ASU 2019-12 removes certain exceptions to the general principles related to the approach for intraperiod tax allocation, the methodology for calculating income taxes in an interim period and the recognition of deferred tax liabilities for outside basis differences. The new guidance also clarifies the accounting for transactions that result in a step-up in the tax basis of goodwill. ASU 2019-12 is effective for annual reporting periods beginning after December 15, 2020, including interim periods within those fiscal years, with early adoption permitted. We are currently evaluating the effect that ASU 2019-12 will have on our combined financial statements.

(3) Summary of Significant Accounting Policies

Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Estimates and assumptions are used in accounting for, among other things, the valuation of acquisition-related assets and liabilities, allowances for uncollectible accounts, certain components of revenue, programming and copyright costs, deferred income taxes and related valuation allowances, loss contingencies, fair value measurements, impairment assessments, capitalization of internal costs associated with construction and installation activities, useful lives of long-lived assets, share-based compensation and actuarial liabilities associated with certain benefit plans. Actual results could differ from those estimates.

Reclassifications

Certain prior year amounts have been reclassified to conform to the current year presentation.

Principles of Combination

The accompanying combined financial statements include the accounts of the entities described in note 1, all of which are voting interest entities where we or Liberty Global exercise a controlling financial interest through the ownership of a direct or indirect controlling voting interest and variable interest entities for which our company is the primary beneficiary. All significant intercompany accounts and transactions have been eliminated in combination.

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 as there are no restrictions on our ability, contractual or otherwise, to redeem our investments at the stated net asset value.

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 long-term assets or repay long-term debt are classified as long-term assets. All other cash that is restricted to a specific use is classified as current or long-term based on the expected timing of the disbursement.

Our significant non-cash investing and financing activities are disclosed in our combined statements of equity (deficit) and in notes 5, 8, 9, 12 and 13.

Cash Flow Statement

For the purpose of determining the classification of cash flows in our combined statements of cash flows, payments on related-party loans are first applied to principal (included as cash flows from financing activities) and then to capitalized interest (included as cash flows from operating activities). Interest-bearing cash advances to related parties and repayments thereof are classified as investing activities. Receipts on related-party receivables are first applied to principal (included as cash flows from investing activities) and then to capitalized interest (included as cash flows from operating activities). All other related-party borrowings, advances and repayments are reflected as financing activities.

For the purpose of our combined 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 combined statements of cash flows.

The capital expenditures that we report in our combined statements of cash flows do not include (i) amounts that are financed under capital-related vendor financing or finance lease arrangements or (ii) purchased assets transferred to our company by another entity under the common control of Liberty Global in exchange for non-cash increases to the Shareholder Loan or non-cash decreases to the LGEF Receivable (each as defined and described in note 13), or non-cash contributions from our parent entities (non-cash related-party capital additions). Instead, these amounts are reflected as non-cash additions to our property and equipment when the underlying assets are delivered, and in the case of capital-related vendor financing and finance lease arrangements and non-cash related-party capital additions that are settled through increases to the Shareholder Loan, as repayments of debt when the principal is repaid.

Trade Receivables

Our trade receivables are reported net of an allowance for doubtful accounts. Such allowance aggregated €3.7 million and €4.6 million at December 31, 2019 and 2018, respectively. The allowance for doubtful accounts is based upon our assessment of probable 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.

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.

Financial Instruments

Due to the short maturities of cash and cash equivalents, restricted cash, short-term liquid investments, trade and other receivables, other current assets, accounts payable, accrued liabilities and other accrued and current liabilities, their respective carrying values approximate their respective fair values. For information concerning the fair values of certain of our derivatives and debt, see notes 6 and 9, respectively. For information regarding how we arrive at certain of our fair value measurements, see note 7.

Derivative Instruments

All derivative instruments are recorded on the balance sheet at fair value. As we do not apply hedge accounting to any of our derivative instruments, changes in the fair values of our derivative instruments are recorded in realized and unrealized gains or losses on derivative instruments, net, in our combined statements of operations.

The net cash received or paid related to our derivative instruments is classified as an operating, investing or financing activity in our combined 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 combined statements of cash flows.

For information regarding our derivative instruments, see note 6.

Property and Equipment

Property and equipment are stated at cost less accumulated depreciation. 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. Interest capitalized with respect to construction activities was not material during any of the periods presented.

Capitalized internal-use software is included as a component of property and equipment. We capitalize internal and external costs directly associated with the development of internal-use software. We also capitalize costs associated with the purchase of software licenses. Maintenance and training costs, as well as costs incurred during the preliminary stage of an internal-use software development project, are expensed as incurred.

Depreciation is computed using the straight-line method over the estimated useful life of the underlying asset. Equipment under finance leases is 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 assessed periodically and are adjusted when warranted. 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 additional information regarding the useful lives of our property and equipment, see note 8.

Additions, replacements and improvements that extend the asset life are capitalized. Repairs and maintenance are charged to operations.

We recognize a liability for asset retirement obligations in the period in which it is incurred if sufficient information is available to make a reasonable estimate of fair values. Asset retirement obligations may arise from the loss of rights of way that we obtain from local municipalities or other relevant authorities, as well as our obligations under certain lease arrangements to restore the property to its original condition at the end of the lease term. Given the nature of our operations, most of our rights of way and certain leased premises are considered integral to our business. Accordingly, for most of our rights of way and certain lease agreements, the possibility is remote that we will incur significant removal costs in the foreseeable future and, as such, we do not have sufficient information to make a reasonable estimate of fair value for these asset retirement obligations.

As of December 31, 2019 and 2018, the recorded value of our asset retirement obligations was €2.0 million and €1.9 million, respectively.

Intangible Assets

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

Goodwill is not amortized, but instead is tested for impairment at least annually. Intangible assets with finite lives are amortized on a straight-line basis over their respective estimated useful lives to their estimated residual values and reviewed for impairment.

For additional information regarding the useful lives of our intangible assets, see note 8.

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 (other than goodwill) 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 long-lived 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, long-lived 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 for impairment at least annually on October 1 and whenever facts and circumstances indicate that the carrying amount may not be recoverable. For impairment evaluations, we first make a qualitative assessment to determine if the goodwill may be impaired. If it is more-likely-than-not that 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").

Leases

For leases with a term greater than 12 months, we recognize on the lease commencement date (i) ROU assets representing our right to use an underlying asset and (ii) lease liabilities representing our obligation to make lease payments over the lease term. Lease and non-lease components in a contract are generally accounted for separately.

We initially measure lease liabilities at the present value of the remaining lease payments over the lease term. Options to extend or terminate the lease are included only when it is reasonably certain that we will exercise that option. As most of our leases do not provide enough information to determine an implicit interest rate, we generally use a portfolio level incremental borrowing rate in our present value calculation. We initially measure ROU assets at the value of the lease liability, plus any initial direct costs and prepaid lease payments, less any lease incentives received.

With respect to our finance leases, (i) ROU assets are generally depreciated on a straight-line basis over the shorter of the lease term or the useful life of the asset and (ii) interest expense on the lease liability is recorded using the effective interest method. Operating lease expense is recognized on a straight-line basis over the lease term. For leases with a term of 12 months or less (short-term leases), we do not recognize ROU assets or lease liabilities. Short-term lease expense is recognized on a straight-line basis over the lease term.

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 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 more-likely-than-not, based on technical merits, that the position will be sustained upon examination. Net deferred tax assets are then reduced by a valuation allowance if we believe it is more-likely-than-not such net deferred tax assets will not be realized. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in earnings in the period that includes the 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. Interest and penalties related to income tax liabilities are included in income tax benefit or expense in our combined statements of operations.

The Dutch entities of the UPC Holding Group are part of two fiscal unities. UPC Holding is the parent of the largest of these fiscal unities (the **UPCH Fiscal Unity**). The UPCH Fiscal Unity is part of the larger fiscal unity of Liberty Global Holding B.V. (**Liberty Global Holding**), which consolidates individual entities and their ultimate Dutch parent company, as one taxpayer for Dutch tax purposes (the **LGH Fiscal Unity**). The LGH Fiscal Unity includes Dutch entities from the UPCH Fiscal Unity, as well as Dutch entities not included in these combined financial statements. The income taxes of the Dutch entities of the UPC Holding Group are presented in our combined statements of operations on a separate return basis for each tax paying entity or group. The individual entities of the Dutch fiscal unities are jointly and severally liable for all corporate income tax liabilities and the income taxes of their respective fiscal unity. For additional information on our income taxes, see note 11.

Foreign Currency Translation and Transactions

The reporting currency of our company is the euro. The functional currency of our foreign operations generally is the applicable local currency for each foreign entity and equity method investee. Assets and liabilities of foreign entities (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 combined statements of operations 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 combined statements of equity (deficit). 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 combined statements of cash flows. The impacts of material transactions generally are recorded at the applicable spot rates in our combined statements of operations and cash flows. The effect of exchange rates on cash balances held in foreign currencies are separately reported in our combined statements of cash flows.

Transactions denominated in currencies other than our or our combined entities' functional currencies are recorded based on exchange rates at the time such transactions arise. Changes in exchange rates with respect to amounts recorded on our combined balance sheets related to these non-functional currency transactions result in transaction gains and losses that are reflected in our combined statements of operations 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 some 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.

*Business-to-Business (**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.

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 Value-Added Taxes. 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 17.

Share-based Compensation

We recognize all share-based payments from Liberty Global to employees of our combined entities, including grants of employee share-based incentive awards, based on their grant date fair values and Liberty Global's estimates of forfeitures. We recognize the grant date fair value of outstanding awards as a charge to operations over the vesting period.

We use the straight-line method to recognize share-based compensation expense for Liberty Global's outstanding share awards to employees of our combined entities that do not contain a performance condition and the accelerated expense attribution method for our outstanding share awards that contain a performance condition and vest on a graded basis.

The grant date fair values for options, share appreciation rights (**SARs**) and performance-based share appreciation rights (**PSARs**) 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. Liberty Global considers historical exercise trends in its calculation of the expected life of options and SARs granted by Liberty Global to employees. The expected volatility for options and SARs related to Liberty Global 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 Liberty Global ordinary shares.

Litigation Costs

Legal fees and related litigation costs are expensed as incurred.

(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 €5.9 million and €3.7 million as of December 31, 2019 and 2018, respectively. The current and long-term portions of our contract asset balances are included within other current assets and other assets, net, respectively, on our combined balance sheets.

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 €193.4 million and €216.2 million as of December 31, 2019 and 2018, respectively. The decrease in deferred revenue during 2019 is primarily due to €194.0 million of revenue recognized that was included in our deferred revenue balance at December 31, 2018, partially offset by advanced billings recorded in the period. The long-term portions of our deferred revenue balances are included within other long-term liabilities on our combined balance sheets.

Contract Costs

Our aggregate assets associated with incremental costs to obtain our contracts were €19.4 million and €14.4 million at December 31, 2019 and 2018, respectively. The current and long-term portions of our assets related to contract costs are included within other current assets and other assets, net, respectively, on our combined balance sheets. During 2019 and 2018, we amortized €21.9 million and €19.0 million, respectively, to operating costs and expenses 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) Dispositions and Common Control Transfers

Common Control Transfers

During the fourth quarter of 2019, we completed (i) the transfer of Liberty Global Services B.V. (**LG Services B.V.**) from our company to another subsidiary of Liberty Global outside of the UPC Holding Group (the **LG Services Transfer**) and (ii) the transfer of UPC France Holding B.V. and its subsidiaries (**UPC France**) from our company to another subsidiary of Liberty Global outside of the UPC Holding Group (the **UPC France Transfer**), collectively referred to herein as the "**UPC Transfers**". As the UPC Transfers constitute transactions between entities under common control, we have reflected these transfers at carryover basis and the applicable prior period information has been retrospectively revised to give effect to these transactions for all periods presented.

The UPC Transfers comprised the transfer of (i) 100% of the shares of LG Services B.V. and (ii) 100% of the shares of UPC France for a total distribution of €1,692.4 million, which was settled through a non-cash increase to equity.

The following table sets forth the retrospective effects of the major classes of assets, liabilities and equity of the UPC Transfers as of December 31, 2018. These amounts exclude intercompany assets and liabilities that are eliminated within our combined balance sheet.

	As previously reported	LG Services Transfer	UPC France Transfer	As retrospectively revised
	in millions			
Current assets	€ 640.4	€ 210.8	€ (0.1)	€ 851.1
Property and equipment, net	€ 1,534.8	€ (13.5)	€ —	€ 1,521.3
Total assets	€ 7,331.6	€ 468.9	€ (0.5)	€ 7,800.0
Current liabilities	€ 1,891.6	€ 1,019.7	€ 47.5	€ 2,958.8
Long-term debt and finance lease obligations	€ 4,705.4	€ 280.0	€ 230.8	€ 5,216.2
Total liabilities	€ 7,082.8	€ 1,304.9	€ 350.3	€ 8,738.0
Combined equity (deficit) attributable to parent entities	€ 230.2	€ (836.0)	€ (350.8)	€ (956.6)
Total combined equity (deficit)	€ 248.8	€ (836.0)	€ (350.8)	€ (938.0)
Total liabilities and combined equity	€ 7,331.6	€ 468.9	€ (0.5)	€ 7,800.0

The following tables set forth the retrospective effects of the UPC Transfers on our operating results for the years ended December 31, 2018 and 2017. These amounts exclude intercompany revenue and expenses that are eliminated within our combined statements of operations.

	Year ended December 31, 2018			
	As previously reported	LG Services Transfer	UPC France Transfer	As retrospectively revised
	in millions			
Operating income	€ 378.8	€ —	€ 0.4	€ 379.2
Non-operating expense, net	€ (569.4)	€ 56.7	€ 16.8	€ (495.9)
Income tax expense	€ (24.5)	€ —	€ 0.4	€ (24.1)
Net earnings (loss)	€ (28.8)	€ 56.4	€ (1.9)	€ 25.7
Net earnings (loss) attributable to parent entities	€ (36.1)	€ 56.4	€ (1.9)	€ 18.4

	Year ended December 31, 2017			
	As previously reported	LG Services Transfer	UPC France Transfer	As retrospectively revised
	in millions			
Operating income	€ 314.7	€ —	€ 0.3	€ 315.0
Non-operating expense, net	€ (890.5)	€ (15.2)	€ (65.1)	€ (970.8)
Income tax expense	€ (5.1)	€ —	€ 0.2	€ (4.9)
Net loss	€ (493.3)	€ (15.5)	€ (91.9)	€ (600.7)
Net loss attributable to parent entities	€ (504.0)	€ (15.5)	€ (91.9)	€ (611.4)

Dispositions

Vodafone Disposal Group

On July 31, 2019, Liberty Global CEE Group Holding B.V. (**LG CEE Group Holding**) completed the sale of its operations in Romania, Hungary, and the Czech Republic (collectively referred to herein as the "**Vodafone Disposal Group**") to Vodafone Group plc (**Vodafone**) and certain of its subsidiaries. Just prior to completion of the sale, LG CEE Group Holding and the Vodafone Disposal Group were distributed out of the UPC Holding Group to another subsidiary of Liberty Global (the **Vodafone Group Distribution**) and therefore are no longer included within the UPC Holding Group. The distribution was accounted for at carryover basis as a transaction under common control. As the Vodafone Disposal Group was already presented as a discontinued operation and LG CEE Group Holding did not have any material activity, other than certain intercompany transactions with other entities of the UPC Holding Group, we did not give retrospective effect to the Vodafone Group Distribution in our combined financial statements. As such, the results and cash flows of the Vodafone Disposal Group (presented as a discontinued operation) and LG CEE Group Holding (presented as a continuing operation) are included in our combined financial statements through July 31, 2019. With the exception of the recognition of a €1.9 million gain related to the sale of shares in UPC Romania SA (**UPC Romania**) that were owned by UPC Poland, which is still a restricted subsidiary of the UPC Holding Group, the results of the sale of the Vodafone Disposal Group are not reflected in our combined financial statements.

In August 2019, upon completion of LG CEE Group Holding's sale of the Vodafone Disposal Group, a portion of the net proceeds were loaned to the UPC Holding Group through the Shareholder Loan (as defined and described in note 13) and were used to prepay in full the $1,645.0 million (€1,465.0 million) outstanding principal amount under UPC Facility AR. For additional information regarding our debt obligations and related-party transactions, see notes 9 and 13, respectively.

UPC DTH

On May 2, 2019, UPC DTH Holding B.V. (**UPC DTH Holding**) completed the sale of UPC DTH to M7 Group. Just prior to completion of the sale, UPC DTH Holding and UPC DTH were distributed out of the UPC Holding Group to another subsidiary of Liberty Global (the **UPC DTH Distribution**) and therefore are no longer included within the UPC Holding Group. As a result of the UPC DTH Distribution, the results of the sale of UPC DTH are not reflected in our combined financial statements. The distribution was accounted for at carryover basis as a transaction under common control. As UPC DTH and UPC DTH Holding were already presented as discontinued operations, we did not give retrospective effect to the UPC DTH Distribution in our combined financial statements.

UPC Austria

On July 31, 2018, Liberty Global Europe Holdco 2 B.V. (**LGE Holdco 2**) completed the sale of its Austrian operations, "**UPC Austria**," to Deutsche Telekom AG (**Deutsche Telekom**). Just prior to completion of the sale of UPC Austria, UPC Austria and LGE Holdco 2 were distributed out of the UPC Holding Group to another subsidiary of Liberty Global (the **UPC Austria Distribution**) and therefore are no longer included within the UPC Holding Group. As a result of the UPC Austria Distribution, the results of the sale of UPC Austria are not reflected in our combined financial statements. The distribution was accounted for at carryover basis as a transaction under common control. As UPC Austria was already presented as a discontinued operation and LGE Holdco 2 did not have any material activity, other than certain intercompany transactions with other entities of the UPC Holding Group, we did not give retrospective effect to the UPC Austria Distribution in our combined financial statements. As

such, the results and cash flows of UPC Austria (presented as a discontinued operation) and LGE Holdco 2 (presented as a continuing operation) are included in our combined financial statements through July 31, 2018. In connection with the UPC Austria Distribution we (i) received a capital contribution from LGE Financing B.V. (**LGE Financing**) of €350.0 million, which was used to fund certain intercompany transactions, including a €350.0 million loan to another subsidiary of Liberty Global by LGE Holdco 2 prior to the UPC Austria Distribution, and (ii) equity-settled a loan receivable of €933.6 million due from LGE Financing, which was established and settled in connection with the UPC Austria Distribution.

Upon completion of the sale of UPC Austria, we were loaned a portion of the net cash proceeds received by LGE Holdco 2 through a related-party loan and used this cash to repay or redeem an aggregate €842.8 million (equivalent at the applicable dates) principal amount of our outstanding debt, including (i) the repayment of €782.8 million (equivalent at the repayment date) principal amount under the UPC Holding Bank Facility and (ii) the redemption of €60.0 million principal amount of the UPCB SPE Notes. For additional information regarding our debt obligations, see note 9.

Presentation of Discontinued Operations

The operations of the Vodafone Disposal Group, UPC DTH and UPC Austria are presented as discontinued operations in our combined financial statements for all applicable periods. In connection with the signing of each respective sales agreement, we ceased to depreciate or amortize the long-lived 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. No debt, interest expense or derivative instruments of the UPC Holding Group, other than with respect to certain borrowings that are direct obligations of the entities to be disposed, has been allocated to discontinued operations.

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 combined balance sheet.

	Vodafone Disposal Group (a)	UPC DTH	Total
		in millions	
Assets:			
Current assets other than cash	€ 48.3	€ 7.4	€ 55.7
Property and equipment, net	711.4	69.6	781.0
Goodwill	613.7	—	613.7
Other assets, net	29.6	6.5	36.1
Total assets	€ 1,403.0	€ 83.5	€ 1,486.5
Liabilities:			
Current portion of debt and finance lease obligations	€ 51.7	€ 9.8	€ 61.5
Other accrued and current liabilities	141.1	28.9	170.0
Long-term debt and finance lease obligations	71.6	32.8	104.4
Other long-term liabilities	17.6	0.3	17.9
Total liabilities	€ 282.0	€ 71.8	€ 353.8

(a) As retrospectively revised.

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

	Vodafone Disposal Group (a)	UPC DTH (b)	Total
		in millions	
Year ended December 31, 2019			
Revenue	€ 331.9	€ 32.4	€ 364.3
Operating income	€ 83.5	€ 8.8	€ 92.3
Earnings before income taxes	79.7	8.0	87.7
Income tax expense	(8.1)	—	(8.1)
Net earnings attributable to parent entities	€ 71.6	€ 8.0	€ 79.6

(a) Includes the operating results of the Vodafone Disposal Group from January 1, 2019 through July 31, 2019, the date the Vodafone Disposal Group was distributed out of the UPC Holding Group.

(b) Includes the operating results of the UPC DTH from January 1, 2019 through May 2, 2019, the date UPC DTH was distributed out of the UPC Holding Group.

	UPC Austria (a)(b)	Vodafone Disposal Group (a)	UPC DTH	Total
		in millions		
Year ended December 31, 2018				
Revenue	€ 210.5	€ 555.9	€ 99.0	€ 865.4
Operating income	€ 85.4	€ 122.1	€ 8.1	€ 215.6
Earnings before income taxes	73.6	111.0	6.3	190.9
Income tax benefit (expense)	(19.5)	(11.3)	6.4	(24.4)
Net earnings	54.1	99.7	12.7	166.5
Net earnings attributable to noncontrolling interests	3.5	—	—	3.5
Net earnings attributable to parent entities	€ 50.6	€ 99.7	€ 12.7	€ 163.0

(a) As retrospectively revised.

(b) Includes the operating results of UPC Austria from January 1, 2018 through July 31, 2018, the date UPC Austria was distributed out of the UPC Holding Group.

	UPC Austria (a)	Vodafone Disposal Group (a)	UPC DTH	Total
	in millions			
Year ended December 31, 2017				
Revenue	€ 350.4	€ 531.9	€ 101.6	€ 983.9
Operating income	€ 61.8	€ 31.0	€ 7.4	€ 100.2
Earnings before income taxes	42.9	21.2	5.7	69.8
Income tax expense	(4.2)	(5.6)	—	(9.8)
Net earnings	38.7	15.6	5.7	60.0
Net earnings attributable to noncontrolling interests	6.0	—	—	6.0
Net earnings attributable to parent entities	€ 32.7	€ 15.6	€ 5.7	€ 54.0

(a) As retrospectively revised.

(6) Derivative Instruments

In general, we enter into derivative instruments to protect against (i) increases in the interest rates on our variable-rate debt and (ii) foreign currency movements, particularly with respect to borrowings that are denominated in a currency other than the functional currency of the borrowing entity. In this regard, through our combined entities, we have entered into various derivative instruments to manage interest rate exposure and foreign currency exposure with respect to the United States (**U.S.**) dollar (**$**), the euro (**€**), the Swiss franc (**CHF**) and the Polish zloty (**PLN**). We do not apply hedge accounting to our derivative instruments. Accordingly, changes in the fair values of our derivative instruments are recorded in realized and unrealized gains or losses on derivative instruments, net, in our combined statements of operations.

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

	December 31, 2019			December 31, 2018		
	Current	Long-term	Total	Current	Long-term	Total
	in millions					
Assets:						
Cross-currency and interest rate derivative contracts (a)	€ 83.1	€ 226.2	€ 309.3	€ 107.2	€ 362.9	€ 470.1
Foreign currency forward and option contracts	2.7	—	2.7	0.4	—	0.4
Other	0.5	0.4	0.9	0.4	—	0.4
Total	€ 86.3	€ 226.6	€ 312.9	€ 108.0	€ 362.9	€ 470.9
Liabilities:						
Cross-currency and interest rate derivative contracts (a)	€ 120.3	€ 324.6	€ 444.9	€ 129.7	€ 369.8	€ 499.5
Foreign currency forward and option contracts	—	—	—	0.4	3.2	3.6
Other	—	—	—	—	0.1	0.1
Total	€ 120.3	€ 324.6	€ 444.9	€ 130.1	€ 373.1	€ 503.2

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(a) 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. The changes in the credit risk valuation adjustments associated with our cross-currency and interest rate derivative contracts resulted in net gains (losses) of (€21.7 million), (€11.5 million) and €14.9 million during 2019, 2018 and 2017, respectively. These amounts are included in realized and unrealized gains (losses) on derivative instruments, net, in our combined statements of operations. For further information regarding our fair value measurements, see note 7.

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

	Year ended December 31,		
	2019	2018	2017
	in millions		
Cross-currency and interest rate derivative contracts	€ 30.1	€ 153.1	€ (170.9)
Foreign currency forward and option contracts	(2.8)	2.0	5.1
Other	1.2	(0.1)	0.6
Total	€ 28.5	€ 155.0	€ (165.2)

The net cash received or paid related to our derivative instruments is classified as an operating, investing or financing activity in our combined 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,		
	2019	2018	2017
		in millions	
Operating activities	€ (16.6)	€ 9.5	€ (22.9)
Financing activities	144.2	6.4	(137.7)
Total	€ 127.6	€ 15.9	€ (160.6)

Counterparty Credit Risk

We are exposed to the risk that the counterparties to our derivative instruments 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. Collateral is generally not posted by either party under our derivative instruments. At December 31, 2019, our exposure to counterparty credit risk included derivative assets with an aggregate fair value of €90.6 million.

We 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 governed by the relevant master agreement and are independent of similar agreements.

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

In the following tables, we present the details of the various categories of our derivative instruments, all of which are held by our subsidiary, UPC Switzerland Holding B.V.

Cross-currency Derivative Contracts

We generally match the denomination of our 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, 2019, 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, 2019:

Notional amount due from counterparty		Notional amount due to counterparty			Weighted average remaining life
in millions		in millions			in years
$	775.0	€	643.1		4.3
$	1,200.0	CHF	1,107.5	(a)	5.2
€	2,824.4	CHF	3,221.2	(a)	4.3
€	742.8	PLN	3,149.5		1.9

(a) Includes certain derivative instruments that are "forward-starting," such that the initial exchange occurs at a date subsequent to December 31, 2019. 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 euro equivalents of the notional amounts and the related weighted average remaining contractual lives of our interest rate swap contracts at December 31, 2019:

Pay fixed rate (a)			Receive fixed rate		
Notional amount		Weighted average remaining life	Notional amount		Weighted average remaining life
in millions		in years	in millions		in years
€	6,445.0	3.5	€	4,730.7	5.9

(a) Includes forward-starting derivative instruments.

Interest Rate Swap Options

From time to time, we enter into 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. Such contracts typically have a life of no more than three years. At December 31, 2019, the option expiration period on each of our swaptions had expired.

Basis Swaps

From time to time, we enter into basis swaps, which 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. At December 31, 2019, we had no outstanding basis swaps.

Interest Rate Collars

From time to time, we enter into interest rate collar agreements that lock in a maximum interest rate if variable rates rise, but also allow our company to benefit, to a limited extent, from declines in market rates. At December 31, 2019, we had no interest rate collar agreements.

Impact of Derivative Instruments on Borrowing Costs

Excluding forward-starting instruments and swaptions, the impact of the derivative instruments that mitigate our foreign currency and interest rate risk, as described above, was a decrease of 15 basis points to our borrowing costs as of December 31, 2019.

Foreign Currency Forwards and Options

We enter into foreign currency forward and option contracts with respect to non-functional currency exposure. As of December 31, 2019, the total euro equivalent of the notional amounts of foreign currency forward and option contracts was €263.4 million.

(7) Fair Value Measurements

We use the fair value method to account for our derivative instruments. The reported fair values of these instruments as of December 31, 2019 are unlikely to represent the value that will be paid or received upon the ultimate settlement or disposition of these assets and liabilities.

GAAP provides 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. 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 2019, no such transfers were made.

All of our Level 2 inputs (interest rate futures and swap rates) and certain of our Level 3 inputs (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. 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.

As further described in note 6, we have entered into various derivative instruments to manage our interest rate and foreign currency exchange risk. 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 6.

Fair value measurements are also used in connection with nonrecurring valuations performed in connection with impairment assessments and acquisition accounting. The nonrecurring valuations associated with acquisition accounting primarily include the valuation of reporting units, customer relationship and other intangible assets and property and equipment. Unless a reporting unit has a readily determinable fair value, the valuation of reporting units is based at least in part on discounted cash flow analyses. With the exception of certain inputs for our weighted average cost of capital and discount rate calculations that are derived from pricing services, the inputs used in our discounted cash flow analyses, such as forecasts of future cash flows, are based on our assumptions. 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. All 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 2019 or 2018.

At December 31, 2019 and 2018, all of our derivative instruments fell under Level 2 of the fair value hierarchy, with the exception of certain of our Level 3 foreign currency derivative contracts and swaptions, which had a net liability position of €3.2 million at December 31, 2018. As of December 31, 2019, all of our Level 3 foreign currency derivative contracts and swaptions had expired or been settled.

(8) Long-lived Assets

Property and Equipment, Net

The details of our property and equipment and the related accumulated depreciation are set forth below:

	Estimated useful life at December 31, 2019	December 31,	
		2019	2018 (a)
		in millions	
Distribution systems	3 to 30 years	€ 3,125.5	€ 2,884.0
Customer premises equipment	4 to 5 years	598.1	537.3
Support equipment, buildings and land	2 to 40 years	372.3	305.9
Total property and equipment, gross		4,095.9	3,727.2
Accumulated depreciation		(2,521.7)	(2,205.9)
Total property and equipment, net		€ 1,574.2	€ 1,521.3

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(a) As retrospectively revised, see note 5.

Depreciation expense related to our property and equipment was €333.7 million, €318.0 million and €336.1 million during 2019, 2018 and 2017, respectively.

During 2019, 2018 and 2017, we recorded non-cash increases to our property and equipment related to certain vendor financing arrangements of €405.4 million, €364.3 million and €563.1 million, respectively, which exclude related value-added taxes (**VAT**) of €55.3 million, €47.5 million and €57.0 million, respectively, that was also financed by our vendors under these arrangements. Furthermore, during 2017, we recorded non-cash increases to our property and equipment of €14.6 million related to assets acquired on our behalf pursuant to vendor financing and finance lease arrangements of Liberty Global B.V. (**LG B.V.**), a subsidiary of Liberty Global that is outside of the UPC Holding Group. For additional information, see notes 9 and 13.

Goodwill

Changes in the carrying amount of our goodwill during 2019 are set forth below:

	January 1, 2019	Foreign currency translation adjustments	December 31, 2019
		in millions	
Switzerland	€ 2,535.8	€ 94.1	€ 2,629.9
Central and Eastern Europe	493.0	3.4	496.4
Total	€ 3,028.8	€ 97.5	€ 3,126.3

If, among other factors, (i) our enterprise value or Liberty Global's equity value were to decline 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 long-lived assets. Any such impairment charges could be significant.

Changes in the carrying amount of our goodwill during 2018 are set forth below:

	January 1, 2018	Acquisitions and related adjustments	Foreign currency translation adjustments	December 31, 2018
		in millions		
Switzerland	€ 2,438.4	€ (0.3)	€ 97.7	€ 2,535.8
Central and Eastern Europe	504.9	—	(11.9)	493.0
Total	€ 2,943.3	€ (0.3)	€ 85.8	€ 3,028.8

Intangible Assets Subject to Amortization, Net

The details of our intangible assets subject to amortization, which are included in other assets, net, on our combined balance sheets, are set forth below:

		December 31, 2019			December 31, 2018		
	Estimated useful life at December 31, 2019	Gross carrying amount	Accumulated amortization	Net carrying amount	Gross carrying amount	Accumulated amortization	Net carrying amount
				in millions			
Customer relationships	5 to 10 years	€ 65.2	€ (37.0)	€ 28.2	€ 207.7	€ (170.9)	€ 36.8

Amortization expense related to intangible assets with finite useful lives was €9.6 million, €27.0 million and €27.6 million during 2019, 2018 and 2017, respectively. Based on our amortizable intangible asset balances at December 31, 2019, we expect that amortization expense will be as follows for the next five years and thereafter. The euro equivalents of such amortization expense amounts as of December 31, 2019 are presented below (in millions):

2020	€ 7.4
2021	6.5
2022	4.1
2023	3.6
2024	3.5
Thereafter	3.1
Total	€ 28.2

(9) Debt

The euro equivalents of the components of our combined third-party debt are as follows:

	December 31, 2019		Principal amount	
			December 31,	
	Weighted average interest rate (b)	Unused borrowing capacity (c)	2019	2018 (a)
			in millions	
Parent entities – UPC Holding Senior Notes	4.60%	€ —	€ 1,070.7	€ 1,061.5
Combined entities:				
UPCB SPE Notes	4.54%	—	2,155.2	2,135.5
UPC Holding Bank Facility	—	990.1	—	1,436.5
Vendor financing (d)	2.48%	—	560.1	502.9
Total third-party debt before deferred financing costs and discounts (e)	4.25%	€ 990.1	€ 3,786.0	€ 5,136.4

The following table provides a reconciliation of total third-party debt before deferred financing costs and discounts to total debt and finance lease obligations:

	December 31,	
	2019	2018 (a)
	in millions	
Total third-party debt before deferred financing costs and discounts	€ 3,786.0	€ 5,136.4
Deferred financing costs and discounts, net	(18.2)	(34.4)
Total carrying amount of third-party debt	3,767.8	5,102.0
Finance lease obligations (note 10)	20.3	21.4
Total third-party debt and finance lease obligations	3,788.1	5,123.4
Related-party debt (note 13)	—	651.8
Total debt and finance lease obligations	3,788.1	5,775.2
Current maturities of debt and finance lease obligations	(563.4)	(559.0)
Long-term debt and finance lease obligations	€ 3,224.7	€ 5,216.2

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(a) As retrospectively revised, see note 5.

(b) Represents the weighted average interest rate in effect at December 31, 2019 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, the weighted average interest rate on our aggregate third-party variable- and fixed-rate indebtedness was 4.41% at December 31, 2019. For information regarding our derivative instruments, see note 6.

(c) Unused borrowing capacity represents the maximum availability under the UPC Holding Bank Facility (as defined and described below) at December 31, 2019 without regard to covenant compliance calculations or other conditions precedent to borrowing. At December 31, 2019, based on the most restrictive applicable leverage covenants and leverage-based restricted payment tests, the full €990.1 million of unused borrowing capacity was available to be borrowed and there were no additional restrictions on our ability to make loans or distributions from this availability. Upon completion of the relevant December 31, 2019 compliance reporting requirements, and based on the most restrictive applicable leverage covenants and leverage-based restricted payment tests, we expect €828.8 million of unused borrowing capacity will be available, with

no additional restriction to loan or distribute. 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, 2019, or the impact of additional amounts that may be available to borrow, loan, or distribute under certain defined baskets within the UPC Holding Bank Facility. For information regarding certain financing transactions completed subsequent to December 31, 2019 that could have an impact on the availability to be borrowed, loaned or distributed, see note 18.

(d) Represents amounts owed pursuant to interest-bearing vendor financing arrangements that are used to finance certain of our property and equipment additions and operating expenses. These obligations are generally due within one year and include VAT that was paid on our behalf by the vendor. At December 31, 2019 and 2018, the amounts owed pursuant to these arrangements include €388.0 million and €378.7 million, respectively, related to third-party capital and operating-related vendor financing obligations for which we and LG Services B.V. are co-obligors. LG Services B.V., which is outside of the UPC Holding Group, centrally procures and subsequently transfers property and equipment to other Liberty Global subsidiaries, including those within the UPC Holding Group. For property and equipment transferred to subsidiaries within the UPC Holding Group, we expect to cash settle the related co-obligor amounts with LG Services B.V. in advance of when we and LG Services B.V. are required to settle the obligations with the applicable third parties. Cash payments to LG Services B.V. are reflected as capital expenditures in our combined statements of cash flows, and any cash payments made prior to the settlement of the related third-party obligation are reflected as related-party accounts receivable from LG Services B.V. on our combined balance sheet until the time of settlement. Alternatively, those co-obligor obligations that relate to property and equipment transferred to subsidiaries outside of the UPC Holding Group are reflected on our combined balance sheets as vendor financing obligations and related-party accounts receivable from LG Services B.V. until settlement of the related third-party obligation. Repayments of vendor financing obligations, other than the co-obligor obligations, are included in repayments and repurchases of third-party debt and finance lease obligations in our combined statements of cash flows.

(e) As of December 31, 2019 and 2018, our debt had an estimated fair value of €3,924.8 million and €4,916.9 million, 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). For additional information regarding fair value hierarchies, see note 7.

General Information

Credit Facility. We have entered into a senior secured credit facility agreement with certain financial institutions (the "**credit facility**"). Our credit facility contains certain covenants, the more notable of which are as follows:

- Our credit facility contains certain net leverage ratios which are required to be complied with (i) on an incurrence basis and/or (ii) when the associated revolving credit facility has 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 facility contains certain restrictions which, among other things, restrict our ability to (i) incur or guarantee certain financial indebtedness, (ii) make certain disposals and acquisitions, (iii) create certain security interests over our assets and (iv) make certain restricted payments to our direct and/or indirect parent companies through dividends, loans or other distributions;

- Our credit facility requires that we (i) guarantee the payment of all sums payable under the credit facility and (ii) grant first-ranking security over substantially all of our assets to secure the payment of all sums payable thereunder;

- In addition to certain mandatory prepayment events, our credit facility provides that the instructing group of lenders, under certain circumstances, may cancel the group's commitments thereunder and declare the loan(s) thereunder due and payable at par after the applicable notice period following the occurrence of a change of control (as specified in our credit facility);

- Our credit facility contains 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 facility requires that we 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 facility includes certain cross-default provisions with respect to our other indebtedness, subject to agreed minimum thresholds and other customary and agreed exceptions.

Senior Notes. We have issued certain senior notes. In general, our senior notes (i) are senior obligations of the issuer of such notes 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 and (ii) are secured by a pledge over the shares of UPC Holding. In addition, the indentures governing our senior notes contain certain covenants, the more notable of which are as follows:

- Subject to certain materiality qualifications and other customary and agreed exceptions, our notes contain (i) certain customary incurrence-based restrictions and (ii) certain restrictions that, among other things, restrict our ability to (a) incur or guarantee certain financial indebtedness, (b) make certain disposals and acquisitions, (c) create certain security interests over our assets and (d) make certain restricted payments to our direct and/or indirect parent companies through dividends, loans or other distributions;

- Our notes provide that any failure to pay principal at its stated maturity (after giving effect to any applicable grace period) of, 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; and

- If we or certain of our combined entities (as specified in the applicable indenture) sell certain assets, we must, subject to certain materiality qualifications and other 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, we must offer to repurchase all of the relevant notes at a redemption price of 101%.

SPE Notes. From time to time, we create special purpose financing entities, which are 100% owned by third parties, for the primary purpose of facilitating the offering of senior secured notes, which we collectively refer to as the "**UPCB SPE Notes**." In this regard, UPCB SPE Notes have been issued, and are outstanding at December 31, 2019, by UPCB Finance IV Limited (**UPCB Finance IV**) and UPCB Finance VII Limited (**UPCB Finance VII**), collectively the "**UPCB SPE**s".

As further described below, the UPCB SPEs used the proceeds from the issuance of UPCB SPE Notes to fund term loan facilities to UPC Financing Partnership (**UPC Financing**) under the UPC Holding Bank Facility, each a "**UPC Funded Facility**" and collectively the "**UPC Funded Facilities**." Each UPCB SPE is dependent on payments from UPC Financing under the applicable UPC Funded Facility in order to service its payment obligations under each respective UPCB SPE Note. The term loan under each of the UPC Funded Facilities creates a variable interest in the UPCB SPEs for which UPC Financing is the primary beneficiary and is required to consolidate the UPCB SPEs. As a result, the amounts outstanding under the UPC Funded Facilities are eliminated in the UPC Holding Group's combined financial statements.

Pursuant to the respective indentures for the UPCB SPE Notes (the **UPCB SPE Indentures**) and the respective accession agreements for the UPC Funded Facilities, the call provisions, maturity and applicable interest rate for each UPC Funded Facility are the same as those of the related UPCB SPE Notes. Each UPCB SPE, as the lender under the UPC Funded Facility, is treated the same as the other lenders under the UPC Holding Bank Facility, with benefits, rights and protections similar to those afforded to the other lenders. Through the covenants in the applicable UPCB SPE Indentures and the applicable security interests over (i) all of the issued shares of the applicable UPCB SPE and (ii) the applicable UPCB SPE's rights under the relevant UPC Funded Facility granted to secure the UPCB SPE's obligations under the relevant UPCB SPE Notes, the holders of the UPCB SPE Notes are provided indirectly with the benefits, rights, protections and covenants granted to the applicable UPCB SPE as lender under the relevant UPC Funded Facility. The UPCB SPEs are prohibited from incurring any additional indebtedness, subject to certain exceptions under the UPCB SPE Indentures.

UPC Holding Senior Notes

The details of the UPC Holding Senior Notes as of December 31, 2019 are summarized in the following table:

UPC Holding Senior Notes	Maturity	Interest rate	Original issue amount	Outstanding principal amount		Carrying value (a)
				Borrowing currency	Euro equivalent	
				in millions		
UPC Holding 3.875% Senior Notes	June 15, 2029	3.875%	€ 635.0	€ 594.3	€ 594.3	€ 591.0
UPC Holding 5.50% Senior Notes	January 15, 2028	5.500%	$ 550.0	$ 535.0	476.4	473.2
Total					€ 1,070.7	€ 1,064.2

(a) Amounts are net of deferred financing costs and discounts, where applicable.

Subject to the circumstances described below, the UPC Holding 3.875% Senior Notes are non-callable prior to June 15, 2022 and the UPC Holding 5.50% Senior Notes are non-callable prior to October 15, 2022. At any time prior to June 15, 2022, in the case of the UPC Holding 3.875% Senior Notes, and October 15, 2022, in the case of the UPC Holding 5.50% Senior Notes, the UPC Holding Group may redeem some or all of such UPC Holding Senior Notes by paying a "make-whole" premium, which is the present value of all remaining scheduled interest payments to June 15, 2022 or October 15, 2022 (as applicable) using the discount rate (as specified in the applicable indenture) as of the redemption date plus 50 basis points.

We may redeem some or all of the UPC Holding Senior Notes at the following redemption prices (expressed as a percentage of the principal amount), plus accrued and unpaid interest and additional amounts (as specified in the applicable indenture), if any, to the applicable redemption date, as set forth below:

	Redemption price	
	UPC Holding 3.875% Senior Notes	UPC Holding 5.50% Senior Notes
12-month period commencing	June 15	October 15
2022	101.938%	102.750%
2023	100.969%	101.375%
2024	100.484%	100.688%
2025 and thereafter	100.000%	100.000%

UPCB SPE Notes

The details of the UPCB SPE Notes as of December 31, 2019 are summarized in the following table:

				Outstanding principal amount		
UPCB SPE Notes	**Maturity**	**Interest rate**	**Original issue amount**	**Borrowing currency**	**Euro equivalent**	**Carrying value (a)**
				in millions		
UPCB Finance IV Dollar Notes	January 15, 2025	5.375%	$ 1,140.0	$ 1,140.0	€ 1,015.2	€ 1,010.8
UPCB Finance IV Euro Notes	January 15, 2027	4.000%	€ 540.0	€ 540.0	540.0	536.9
UPCB Finance VII Euro Notes	June 15, 2029	3.625%	€ 600.0	€ 600.0	600.0	595.8
Total					€ 2,155.2	€ 2,143.5

(a) Amounts are net of deferred financing costs and discounts, where applicable.

Subject to the circumstances described below, the UPCB Finance IV Dollar Notes are non-callable prior to January 15, 2020, the UPCB Finance IV Euro Notes are non-callable prior to January 15, 2021 and the UPCB Finance VII Euro Notes are non-callable prior to June 15, 2022 (each a **UPCB SPE Notes Call Date**). If, however, at any time prior to the applicable UPCB SPE Notes Call Date, all or a portion of the loans under the related UPC Funded Facility are voluntarily prepaid (an **Early Redemption Event**), then the relevant UPCB SPE will be required to redeem an aggregate principal amount of its UPCB SPE Notes equal to the aggregate principal amount of the loans prepaid under the relevant UPC Funded Facility. In general, the redemption price payable will equal 100% of the principal amount of the UPCB SPE Note to be redeemed and a "make-whole" premium, which is the present value of all remaining scheduled interest payments to the applicable UPCB SPE Notes Call Date using the discount rate (as specified in the applicable UPCB SPE Indenture) as of the redemption date plus 50 basis points.

Upon the occurrence of an Early Redemption Event on or after the UPCB SPE Notes Call Date, the relevant UPCB SPE will redeem an aggregate principal amount of its UPCB SPE Notes equal to the principal amount of the related UPC Funded Facility prepaid at the following redemption prices (expressed as a percentage of the principal amount), plus accrued and unpaid interest and additional amounts (as specified in the applicable UPCB SPE Indenture), if any, to the applicable redemption date, as set forth below:

	Redemption price		
	UPCB Finance IV Dollar Notes	**UPCB Finance IV Euro Notes**	**UPCB Finance VII Euro Notes**
12-month period commencing	January 15	January 15	June 15
2020	102.688%	N.A.	N.A.
2021	101.792%	102.000%	N.A.
2022	100.896%	101.000%	101.813%
2023	100.000%	100.500%	100.906%
2024	100.000%	100.000%	100.453%
2025 and thereafter	N.A.	100.000%	100.000%

UPC Holding Bank Facility

The UPC Holding Bank Facility is the senior secured credit facility of certain combined entities of the UPC Holding Group. The details of our borrowings under the UPC Holding Bank Facility as of December 31, 2019 are summarized in the following table:

UPC Holding Bank Facility	Maturity	Interest rate	Facility amount (in borrowing currency) (a)	Outstanding principal amount	Unused borrowing capacity	Carrying value (b)
				in millions		
AK (c)	January 15, 2027	4.000%	€ 540.0	€ 540.0	€ —	€ 536.9
AL (c)	January 15, 2025	5.375%	$ 1,140.0	1,015.2	—	1,010.8
AM (d)	December 31, 2021	EURIBOR + 2.75%	€ 990.1	—	990.1	—
AQ (c)	June 15, 2029	3.625%	€ 600.0	600.0	—	595.8
Elimination of Facilities AK, AL and AQ (c)				(2,155.2)	—	(2,143.5)
Total				€ —	€ 990.1	€ —

(a) Except as described in (c) below, amounts represent total third-party facility amounts at December 31, 2019.

(b) Amounts are net of deferred financing costs and discounts, where applicable.

(c) As further discussed in the above description of the UPCB SPE Notes, the amounts borrowed by UPC Financing outstanding under UPC Facilities AK, AL and AQ are eliminated in our combined financial statements.

(d) UPC Facility AM has a fee on unused commitments of 1.1% per year. Subsequent to December 31, 2019, certain lenders under UPC Facility AM agreed to extend and reprice their commitments and, accordingly, we expect that UPC Facility AM will effectively be replaced with a new revolving facility. The new revolving facility is expected to provide for maximum borrowing capacity of €500.0 million, bear interest at a rate of EURIBOR + 2.5% with a fee on unused commitments of 1.0% per year and have a final maturity date of May 31, 2026. We plan to complete this process during the first half of 2020.

Financing Transactions

Below we provide summary descriptions of certain financing transactions completed during 2019, 2018 and 2017. Certain of our financing transactions may include non-cash borrowings and repayments. During 2019 and 2018, there were no non-cash borrowings and repayments of debt. During 2017, non-cash borrowings and repayments aggregated €4,285.9 million.

2019 Financing Transactions

In August 2019, upon completion of LG CEE Group Holding's sale of the Vodafone Disposal Group a portion of the net proceeds were loaned to the UPC Holding Group through the Shareholder Loan (as defined and described in note 13) and were used to prepay in full the $1,645.0 million (€1,465.0 million) outstanding principal amount under UPC Facility AR. In connection with this transaction, we recognized a loss on debt modification and extinguishment of €13.8 million related to the write-off of unamortized deferred financing costs and discounts.

For information regarding certain financing transactions completed subsequent to December 31, 2019 that impact the UPC Holding Bank Facility and the UPCB SPE Notes, see note 18.

2018 and 2017 Financing Transactions

During 2018 and 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 net losses on debt modification and extinguishment of €5.3 million and €97.0 million during 2018 and 2017, respectively. These losses include (i) the write-off of unamortized deferred financing costs and discounts of €5.9 million and €24.8 million, respectively, and (ii) the payment of redemption premiums of €1.8 million and €72.2 million, respectively.

Maturities of Debt

Maturities of our debt as of December 31, 2019 are presented below and represent euro equivalents based on December 31, 2019 exchange rates (in millions):

Year ending December 31:		
2020	€	560.1
2021		—
2022		—
2023		—
2024		—
Thereafter		3,225.9
Total debt maturities (a)		3,786.0
Deferred financing costs and discounts, net		(18.2)
Total debt (b)	€	3,767.8
Current portion	€	560.1
Noncurrent portion	€	3,207.7

(a) Maturities in year 2020 represent amounts related to vendor financing obligations.

(b) Amount includes the UPCB SPE Notes issued by the UPCB SPEs. As described above, the UPCB SPEs are included in our combined financial statements.

(10) Leases

General

We enter into operating and finance leases for network equipment, real estate and vehicles. We provide residual value guarantees on certain of our vehicle leases.

Lease Balances

A summary of our ROU assets and lease liabilities as of December 31, 2019 is set forth below (in millions):

	ROU assets	Lease liabilities
	in millions	
Operating leases (a)(b)	€ 120.4	€ 123.4
Finance leases (c)(d)	16.7	20.3
Total	€ 137.1	€ 143.7

(a) Our operating lease ROU assets are included in other assets, net, on our combined balance sheet. At December 31, 2019, the weighted average remaining lease term for operating leases was 9.5 years and the weighted average discount rate was 3.8%. During 2019, we recorded additions to our ROU assets associated with operating leases of €12.8 million.

(b) The current and long-term portions of our operating lease liabilities are included within other accrued and current liabilities and other long-term liabilities, respectively, on our combined balance sheet.

(c) Our finance lease ROU assets are included in property and equipment, net, on our combined balance sheet. At December 31, 2019, the weighted average remaining lease term for finance leases was 7.4 years and the weighted average discount rate was 6.1%. As of December 31, 2018, we had €17.9 million of finance lease ROU assets included on our combined balance sheet. During 2019, 2018 and 2017, we recorded additions to our ROU assets associated with finance leases of €3.3 million, €1.9 million and €1.3 million, respectively.

(d) The current and long-term portions of our finance lease obligations are included within current portion of debt and finance lease obligations and long-term debt and finance lease obligations, respectively, on our combined balance sheet. As of December 31, 2018, we had €21.4 million of finance lease liabilities included on our combined balance sheet.

A summary of our aggregate lease expense recorded during 2019 is set forth below (in millions):

Finance lease expense:	
Depreciation and amortization	€ 2.4
Interest expense	1.2
Total finance lease expense	3.6
Operating lease expense (a)	29.7
Short-term lease expense (a)	4.8
Variable lease expense (b)	3.1
Total lease expense	€ 41.2

(a) Our operating lease expense and short-term lease expense are included in other operating expenses, SG&A expenses and impairment, restructuring and other operating items, net in our combined statements of operations.

(b) Variable lease expense represents payments made to a lessor during the lease term that vary because of a change in circumstance that occurred after the lease commencement date. Variable lease payments are expensed as incurred and are included in other operating expenses in our combined statements of operations.

A summary of our cash outflows from operating and finance leases recorded during 2019 is set forth below (in millions):

Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash outflows from operating leases	€ 31.2
Operating cash outflows from finance leases	1.2
Financing cash outflows from finance leases	3.4
Total cash outflows from operating and finance leases	€ 35.8

Maturities of our operating and finance lease obligations as of December 31, 2019 are presented below and represent euro equivalents based on December 31, 2019 exchange rates:

	Operating leases	Finance leases
	in millions	
Year ending December 31:		
2020	€ 23.2	€ 4.4
2021	18.5	3.8
2022	16.8	3.5
2023	15.0	3.7
2024	14.0	2.5
Thereafter	70.0	7.7
Total payments	157.5	25.6
Less: present value discount	(34.1)	(5.3)
Present value of lease payments	€ 123.4	€ 20.3
Current portion	€ 16.7	€ 3.3
Noncurrent portion	€ 106.7	€ 17.0

Maturities of our operating and finance lease obligations as of December 31, 2018 are presented below and represent euro equivalents based on December 31, 2018 exchange rates:

	Operating leases (a)	Finance leases (a)
	in millions	
Year ending December 31:		
2019	€ 20.6	€ 3.6
2020	17.1	3.9
2021	15.6	3.3
2022	14.2	3.0
2023	11.9	3.4
Thereafter	53.7	11.8
Total payments	€ 133.1	29.0
Amounts representing interest		(7.6)
Total finance leases		€ 21.4
Current portion		€ 2.0
Noncurrent portion		€ 19.4

(a) As retrospectively revised, see note 5.

(11) Income Taxes

The Dutch entities of the UPC Holding Group are part of two fiscal unities. UPC Holding is the parent of the UPCH Fiscal Unity. The UPCH Fiscal Unity is part of LGH Fiscal Unity, which consolidates individual entities and their ultimate Dutch parent company as one taxpayer for Dutch tax purposes. The LGH Fiscal Unity includes Dutch entities from the UPCH Fiscal Unity, as well as Dutch entities not included in these combined financial statements. Tax amounts allocated between members of the LGH Fiscal Unity are not subject to tax-sharing agreements and no cash payments are made between the companies related to the Dutch tax attributes. Accordingly, any related-party tax allocations are reflected as an adjustment to parent entities in our combined statements of equity (deficit). During the periods presented in these combined financial statements, the majority of the related-party tax allocations represented tax benefits generated by Dutch entities that were recorded net of applicable valuation allowances. Therefore, these related-party tax allocations resulted in no net tax allocations. The income taxes of entities that are not included within the UPCH Fiscal Unity are included in our combined financial statements on a separate return basis for each tax-paying entity or group based on the local tax law.

For tax purposes, the net operating losses generated in the year by Dutch entities of the UPCH Fiscal Unity can be offset with taxable income of non-UPC Holding Group subsidiaries within the LGH Fiscal Unity. The UPCH Fiscal Unity and LGH Fiscal Unity do not operate under a tax sharing agreement and no cash payments are made between the companies related to Dutch tax liabilities.

The domestic Dutch fiscal unities and foreign components of our loss from continuing operations before income taxes are as follows:

	Year ended December 31,		
	2019	2018 (a)	2017 (a)
		in millions	
The Netherlands	€ (268.2)	€ (251.9)	€ (631.7)
Switzerland	159.0	262.9	112.7
Intercompany activity with discontinued operations	(31.5)	(66.0)	(75.5)
Other	44.2	(61.7)	(61.3)
Total	€ (96.5)	€ (116.7)	€ (655.8)

(a) As retrospectively revised, see note 5.

Income tax expense consists of:

	Current	Deferred	Total
		in millions	
Year ended December 31, 2019:			
Switzerland	€ (24.8)	€ (0.9)	€ (25.7)
Other	(16.3)	(3.5)	(19.8)
Total	€ (41.1)	€ (4.4)	€ (45.5)
Year ended December 31, 2018 (a):			
The Netherlands	€ (0.1)	€ —	€ (0.1)
Switzerland	(13.1)	6.3	(6.8)
Other	(9.8)	(7.4)	(17.2)
Total	€ (23.0)	€ (1.1)	€ (24.1)
Year ended December 31, 2017 (a):			
The Netherlands	€ (0.3)	€ —	€ (0.3)
Switzerland	(3.3)	12.0	8.7
Other	(12.0)	(1.3)	(13.3)
Total	€ (15.6)	€ 10.7	€ (4.9)

(a) As retrospectively revised, see note 5.

Income tax expense attributable to our loss from continuing operations before income taxes differs from the amounts computed using the Dutch income tax rate of 25.0% as a result of the following factors:

	Year ended December 31,		
	2019	2018 (a)	2017 (a)
		in millions	
Computed "expected" tax benefit	€ 24.1	€ 29.2	€ 164.0
Change in valuation allowances	(70.1)	(50.5)	(146.8)
Non-deductible or non-taxable interest and other expenses	(9.9)	(55.2)	(55.8)
International rate differences	8.7	5.8	(0.9)
Basis and other differences in the treatment of items associated with investments in the UPC Holding Group entities	(1.4)	45.5	33.0
Recognition of previously unrecognized tax benefits	1.9	1.0	—
Other, net	1.2	0.1	1.6
Total income tax expense	€ (45.5)	€ (24.1)	€ (4.9)

(a) As retrospectively revised, see note 5.

On December 27, 2019, changes to the corporate income tax rate in the Netherlands were enacted. The prevailing rate will decrease from the current rate of 25.0% to 21.7% during 2021. This change represents a decrease compared to the previously enacted rate reductions (which were due to lower the prevailing corporate income tax rate to 22.5% in 2020 and 20.5% in 2021). These changes have been reflected by an adjustment to the rate at which deferred tax is recognized at the balance sheet date. The net impact of these income tax rate changes is not significant due to the valuation allowance recorded against these net assets.

The components of our net deferred tax liabilities are as follows:

	December 31, 2019	December 31, 2018
	in millions	
Deferred tax assets (a)	€ 0.7	€ 0.6
Deferred tax liabilities (a)	(33.3)	(30.9)
Net deferred tax liability	€ (32.6)	€ (30.3)

(a) Our deferred tax assets and liabilities are included in other assets, net, and other long-term liabilities, respectively, on our combined balance sheets.

The tax effects of temporary differences that give rise to a significant portion of our deferred tax assets and deferred tax liabilities are presented below:

	December 31, 2019	December 31, 2018 (a)
	in millions	
Deferred tax assets:		
Net operating loss and other carryforwards	€ 1,249.8	€ 1,353.4
Debt	42.4	8.7
Derivative instruments	30.4	8.2
Other future deductible amounts	10.9	11.4
Deferred tax assets	1,333.5	1,381.7
Valuation allowance	(1,315.6)	(1,366.8)
Deferred tax assets, net of valuation allowance	17.9	14.9
Deferred tax liabilities:		
Property and equipment, net	(33.0)	(32.7)
Intangible assets	(4.2)	(6.1)
Other future taxable amounts	(13.3)	(6.4)
Deferred tax liabilities	(50.5)	(45.2)
Net deferred tax liability	€ (32.6)	€ (30.3)

(a) As retrospectively revised, see note 5.

Our deferred income tax valuation allowance, including equity items, decreased €51.2 million during 2019. This decrease reflects the net effect of (i) adjustments in relation to a specific limitation rule, (ii) an increase in deferred tax assets due to changes in enacted corporate income tax rates, (iii) a decrease in deferred tax assets due to the expiration of net operating losses, (iv) operational changes to items generating deferred tax impacts during the year and (v) other individually insignificant items.

The significant components of our tax loss carryforwards and related tax assets at December 31, 2019 are as follows:

Country	Tax loss carryforward	Related tax asset	Expiration date
	in millions		
The Netherlands	€ 5,759.2	€ 1,249.7	2020-2025
Switzerland	0.1	0.1	2026
Total	€ 5,759.3	€ 1,249.8	

Our tax loss carryforwards within each jurisdiction combine all companies' tax losses (both capital and ordinary losses) in that jurisdiction, however, certain tax jurisdictions limit the ability to offset taxable income of a separate company or different tax group with the tax losses associated with another separate company or group. Most of the tax losses shown in the above table are not expected to be realized, including certain losses that are limited in use due to change in control or same business tests. In addition, the pre-fiscal unity losses in the Netherlands of the UPCH Fiscal Unity can only be offset with profits that occur within these groups. Losses that relate to the UPCH Fiscal Unity can also be offset against profits of other entities within the LGH Fiscal Unity.

We and our combined entities file combined 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. 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.

In general, tax returns filed by our company or our combined entities for years prior to 2012 are no longer subject to examination by tax authorities. Certain of our subsidiaries are currently involved in income tax examinations in various jurisdictions in which we operate, including the Netherlands. Any adjustments that might arise from these examinations are not expected to have a material impact on our combined financial position or results of operations.

The changes in our unrecognized tax benefits are summarized below:

	2019	2018	2017
		in millions	
Balance at January 1	€ 3.6	€ 4.8	€ 5.0
Reductions for tax positions of prior years	(1.1)	(1.6)	(0.7)
Lapse of statute of limitations	(0.8)	—	—
Additions based on tax positions related to the current year	0.7	0.4	0.5
Foreign currency translation	0.1	—	—
Balance at December 31	€ 2.5	€ 3.6	€ 4.8

No assurance can be given that any of these tax benefits will be recognized or realized.

As of December 31, 2019, 2018 and 2017, our unrecognized tax benefits included €2.5 million, €3.6 million and €4.8 million, respectively, of tax benefits that would have a favorable impact on our effective income tax rate if ultimately recognized, after considering amounts that we would expect to be offset by valuation allowances and other factors.

Other than the potential impacts of these on-going examinations and the expected expiration of certain statutes of limitation, we do not expect any material changes to our unrecognized tax benefits during 2020. No assurance can be given as to the nature or impact of any changes in our unrecognized tax positions during 2020.

On May 16, 2019, the Dutch government enacted legislation that limits certain tax consolidation provisions that apply to the Dutch entities of the UPC Holding Group. The impact of these changes are not considered to be material on our combined financial statements.

(12) Combined Equity (Deficit)

Distributions

During 2019, we made non-cash capital distributions resulting in (i) a €1,376.1 million decrease to equity related to the Vodafone Group Distribution and the UPC DTH Distribution and (ii) a €1,692.4 million increase to equity related to the net negative carrying value of our investment in the entities that comprise the UPC Transfers, each as described in note 5. During 2018, in connection with the UPC Austria Distribution described in note 5, we (a) converted a related-party receivable to equity resulting in a non-cash capital distribution of €933.6 million and (b) made a non-cash capital distribution resulting in a €562.2 million increase to equity related to the net negative carrying value of our investment in UPC Austria. In addition, during 2018, we made a non-cash capital distribution of €976.7 million to other subsidiaries of Liberty Global in connection with the UPC Transfers.

Contributions

During 2018, we received a capital contribution from LGE Financing of €350.0 million in connection with the UPC Austria Distribution. During 2017, we recorded a non-cash contribution of €135.5 million and a cash contribution of €44.5 million from other subsidiaries of Liberty Global in connection with the Slovakia Transaction, as described in note 1. In addition, we recorded deemed contributions from LG Services B.V. during 2019, 2018 and 2017 of €9.8 million, €10.6 million and €21.3 million, respectively, related to interest accrued in connection with our vendor financing co-obligor relationship, as described in note 9.

As further described in note 13, we recorded charges from another subsidiary of Liberty Global during 2019, 2018 and 2017 of €12.6 million, €9.0 million and €5.7 million, respectively, related to the contribution of technology-related services, which are reflected as deemed contributions in our combined statements of equity (deficit).

(13) Related-party Transactions

Our related-party transactions are as follows:

	Year ended December 31,		
	2019	2018 (a)	2017 (a)
		in millions	
Credits (charges) included in:			
Revenue	€ 2.2	€ 1.5	€ 1.5
Programming and other direct costs of services	(7.0)	(6.8)	(7.6)
Other operating (b)	(31.3)	(33.6)	(29.3)
SG&A (b)	(15.6)	(17.0)	(13.2)
Allocated share-based compensation expense	(20.6)	(12.3)	(7.4)
Fees and allocations, net (b):			
Operating and SG&A (exclusive of depreciation and share-based compensation)	7.2	4.0	(3.1)
Depreciation	(91.6)	(73.2)	(63.8)
Share-based compensation	(31.8)	(11.8)	(9.4)
Management fee	(44.0)	26.9	(132.5)
Total fees and allocations, net	(160.2)	(54.1)	(208.8)
Included in operating income	(232.5)	(122.3)	(264.8)
Interest expense	(47.3)	(391.7)	(713.9)
Interest income	11.1	107.1	150.8
Included in net earnings (loss)	€ (268.7)	€ (406.9)	€ (827.9)
Property and equipment transfers in, net	€ 45.9	€ 74.2	€ 93.4

(a) As retrospectively revised, see note 5.

(b) During the fourth quarter of 2019, Liberty Global changed its segment presentation of certain costs related to its centrally-managed technology and innovation function. These costs, which were previously charged to our company and reflected within the applicable categories of our fees and allocations, net, are now allocated to our company and reflected within (i) other operating expenses and (ii) SG&A expenses in our combined statements of operations and in the table above (the **T&I Allocation**). Amounts presented for all periods have been retrospectively revised to reflect this change. The following table provides a summary of the impact of the T&I Allocation. For information on the impact to our Segment OCF, see note 17.

	Year ended December 31,		
	2019	2018	2017
		in millions	
Increase (decrease) to charges included in:			
Other operating	€ (30.4)	€ (30.6)	€ (27.5)
SG&A	(12.2)	(13.6)	(12.3)
Fees and allocations, net:			
Operating and SG&A	46.6	40.0	60.5
Management fee	(4.0)	4.2	(20.7)
Total impact on operating income	€ —	€ —	€ —

General. The UPC Holding Group charges fees and allocates costs and expenses to certain other Liberty Global subsidiaries and certain Liberty Global subsidiaries outside of the UPC Holding Group charge fees and allocate costs and expenses to the UPC Holding Group. Depending on the nature of these related-party transactions, the amount of the charges or allocations may be based on (i) our estimated share of the underlying costs, (ii) our estimated share of the underlying costs plus a mark-up or (iii) commercially-negotiated rates. The methodology Liberty Global uses to allocate its central and administrative costs to its borrowing groups impacts the calculation of the "EBITDA" metric specified by our debt agreements (**Covenant EBITDA**). In this regard, the components of related-party fees and allocations that are deducted to arrive at our Covenant EBITDA are based on (a) the amount and nature of costs incurred by the allocating Liberty Global subsidiaries during the period, (b) the allocation methodologies in effect during the period and (c) the size of the overall pool of entities that are charged fees and allocated costs, such that changes in any of these factors would likely result in changes to the amount of related-party fees and allocations that will be deducted to arrive at our Covenant EBITDA in future periods. For example, to the extent that a Liberty Global subsidiary borrowing group was to acquire (sell) an operating entity, and assuming no change in the total costs incurred by the allocating entities, the fees charged and the costs allocated to our company would decrease (increase). Although we believe that the related-party charges and allocations described below are reasonable, no assurance can be given that the related-party costs and expenses reflected in our combined statements of operations are reflective of the costs that we would incur on a standalone basis.

Revenue. Amounts primarily relate to B2B related services and network maintenance services provided to certain affiliates outside of the UPC Holding Group.

Programming and other direct costs of services. Amounts represent certain cash settled charges from other Liberty Global subsidiaries and affiliates to the UPC Holding Group for programming-related and interconnect services provided to our company.

Other operating expenses. Amounts include certain charges, which may be cash or loan settled, between Liberty Global subsidiaries and the UPC Holding Group, primarily for network-related services and other items, including costs related to the T&I Allocation.

SG&A expenses. Amounts represent certain charges, which may be cash or loan settled, between Liberty Global subsidiaries and the UPC Holding Group, primarily for information technology-related services and software maintenance services, including costs related to the T&I Allocation.

Allocated share-based compensation expense. Amounts are allocated to our company by Liberty Global subsidiaries and represent share-based compensation expense associated with the Liberty Global share-based incentive awards held by certain employees of our combined entities. Share-based compensation expense is included in SG&A expenses in our combined statements of operations.

Fees and allocations, net. These amounts, which are based on our company's estimated share of the applicable costs (including personnel-related and other costs associated with the services provided) incurred by Liberty Global subsidiaries, represent the aggregate net effect of charges between our company and various Liberty Global subsidiaries that are outside of our company. These charges generally relate to management, finance, legal, technology and other services that support our company's operations. The categories of our fees and allocations, net, are as follows:

- *Operating and SG&A (exclusive of depreciation and share-based compensation).* The amounts included in this category, which are generally loan settled, represent charges between our company and other Liberty Global subsidiaries for certain technology, management, marketing, finance and other operating and SG&A expenses incurred by our company and other Liberty Global subsidiaries, whose activities benefit multiple operations, including operations within and outside of the UPC Holding Group. Amounts represent the charge to or from our company based on our estimated share of the actual costs incurred by our company or other Liberty Global subsidiaries, without a mark-up. Amounts in this category are generally deducted to arrive at our Covenant EBITDA.

- *Depreciation.* The amounts included in this category, which are generally loan settled, represent our estimated share of depreciation of assets not owned by our company. The amounts allocated represent our estimated share of the actual costs incurred by Liberty Global subsidiaries, without a mark-up.

- *Share-based compensation.* The amounts included in this category, which are generally loan settled, represent our estimated share of share-based compensation associated with Liberty Global employees who are not employees of our company. The amounts allocated represent our estimated share of the actual costs incurred by Liberty Global subsidiaries, without a mark-up.

- *Management fee.* The amounts included in this category, which are generally loan settled, represent our estimated allocable share of (i) operating and SG&A expenses related to stewardship services provided by certain Liberty Global subsidiaries and (ii) the mark-up, if any, applicable to each category of the related-party fees and allocations charged to our company.

Liberty Global charges technology-based fees to our company using a royalty-based method. For 2019, 2018 and 2017, our proportional share of the technology-based costs of €163.9 million, €125.2 million and €133.4 million, respectively, was €5.0 million, €2.9 million and €0.4 million, respectively, more than the actual amount charged under the royalty-based method. Accordingly, these excess amounts have been reflected as deemed contributions of technology-related services in our combined statements of equity (deficit). Any excess of these charges over our estimated proportionate share of the underlying technology-based costs will be classified as management fees and added back to arrive at Covenant EBITDA.

The technology fee charged to our company during the third quarter of 2018 includes an €83.8 million credit that arose from the acceptance of a Bilateral Advance Pricing Arrangement (**BAPA**) with the Swiss authorities by a subsidiary of Liberty Global, which is reflected as a reduction to management fees. The BAPA reduced prior year technology fees charged to our Switzerland operations, primarily during the years ended December 31, 2017 and 2016, and accordingly resulted in the issuance of a credit note from a subsidiary of Liberty Global to our Switzerland operations in the amount of such reductions.

Interest expense. Amounts primarily include interest accrued on the Shareholder Loan (as defined and described below). Interest expense is accrued and included in other long-term liabilities during the year, and then added to the Shareholder Loan balance at the end of the year.

Interest income. Amounts primarily include interest income related to receivables from LG Services B.V. and UPC France that, prior to the UPC Transfers, were eliminated in combination. Certain of these related-party balances were settled during 2019, as described below. Beginning in 2019, amounts also include interest accrued on the LGEF Receivable (as defined and described below). Interest income is accrued and included in long-term interest receivable during the year, and then added to the LGEF Receivable balance at the beginning of the following year.

Property and equipment transfers, net. These amounts, which are generally cash settled, represent net carrying values related to (i) customer premises equipment acquired from other Liberty Global subsidiaries outside of the UPC Holding Group, which centrally procure equipment on behalf of our company and various other Liberty Global subsidiaries and (ii) used customer premises and network-related equipment acquired from or transferred to other Liberty Global subsidiaries outside of the UPC Holding Group. During all periods presented, the carrying values of the equipment transferred into the UPC Holding Group exceed the carrying values of the equipment transferred out of the UPC Holding Group. The net cash paid in connection with these transfers is reflected as capital expenditures, net, within our combined statements of cash flows.

The following table provides details of our related-party balances:

	December 31,	
	2019	2018 (a)
	in millions	
Assets:		
Current receivables (b)	€ 411.8	€ 401.3
LGEF Receivable (c)	247.7	173.4
Long-term interest receivable (d)	—	225.0
Other long-term receivables (e)	—	120.4
Total	€ 659.5	€ 920.1
Liabilities:		
Accounts payable	€ 70.4	€ 50.8
Accrued liabilities (f)	52.3	1,428.7
Current portion of related-party debt	—	53.9
Long-term related-party debt (g)	—	597.9
Other long-term liabilities	9.0	6.3
Total	€ 131.7	€ 2,137.6

(a) As retrospectively revised, see note 5.

(b) Amounts primarily include (i) €388.0 million and €378.7 million, respectively, of receivables due from LG Services B.V. related to certain operating expenses and centrally-procured property and equipment vendor financed by LG Services B.V. on behalf of other Liberty Global subsidiaries for which we and LG Services B.V. are co-obligors and (ii) €18.9 million and €18.2 million, respectively, of receivables due from LG B.V. These receivables are non-interest bearing and may be cash or loan settled.

(c) UPC Holding signed a related-party agreement effective January 1, 2019 related to the €173.4 million receivable (the **LGEF Receivable**) due from LGE Financing at December 31, 2018. The LGEF Receivable bears interest at 5.96% and matures on January 1, 2029. Accrued interest on the LGEF Receivable is transferred to the receivable balance at the beginning of each year. The net increase in the LGEF Receivable during 2019 includes (i) cash repayments of €1,822.3 million, (ii) cash advances of €1,599.3 million, (iii) a €292.0 million non-cash increase related to the settlement of certain related-party amounts and (iv) additions of €5.3 million in non-cash accrued interest.

(d) The 2018 amount represents interest income related to receivables from LG Services B.V. that, prior to the UPC Transfers, were eliminated in combination. During 2019, this amount was non-cash equity settled as part of the distribution in connection with the UPC Transfers.

(e) The 2018 amount represents receivables from LG Services B.V. that, prior to the UPC Transfers, were eliminated in combination. During 2019, the change in this balance included (i) a non-cash increase of €80.1 million and (ii) the cash settlement of the €200.5 million outstanding amount.

(f) The 2018 amount primarily includes €1,357.9 million of accrued liabilities owed to LG Services B.V. that, prior to the UPC Transfers, were eliminated in combination. During 2019, €200.5 million of this amount was cash settled and €1,157.4 million of this amount was non-cash equity settled as part of the distribution in connection with the UPC Transfers.

(g) The 2018 amount includes (i) €367.0 million of amounts owed to LG Services B.V. and (ii) €230.9 million of amounts owed to UPC France that, prior to the UPC Transfers, were eliminated in combination. During 2019, changes in these balances included (a) cash advances of €431.9 million, (b) cash payments of €607.5 million and (c) the non-cash equity settlement of the outstanding balances as part of the distribution in connection with the UPC Transfers.

UPC Holding has an unsecured shareholder loan (the **Shareholder Loan**) with LGE Financing, which, as amended, matures in 2030 and is subordinated in right of payment to the prior payment in full of the UPC Holding Senior Notes in the event of (i) a total or partial liquidation, dissolution or winding up of UPC Holding, (ii) a bankruptcy, reorganization, insolvency, receivership or similar proceeding relating to UPC Holding or its property, (iii) an assignment for the benefit of creditors or (iv) any marshaling of UPC Holding's assets or liabilities. The interest rate on the Shareholder Loan is a fixed rate of 9.79% and accrued interest is included in other long-term liabilities until it is transferred to the loan balance at the end of each year. During the 2019 period ended October 21, 2019, changes in the Shareholder Loan included (a) cash advances of €1,791.6 million, (b) cash payments of €267.0 million and (c) a €92.5 million non-cash increase related to the settlement of certain related-party amounts. On October 21, 2019, we non-cash settled €1,617.1 million of the Shareholder Loan and €25.1 million of outstanding accrued interest by converting these amounts to equity. During the remaining 2019 period, there were no changes in the Shareholder Loan, and as of December 31, 2019, there was no outstanding balance on the Shareholder Loan. During the 2018 period ended June 15, 2018, changes in the Shareholder Loan included (1) cash advances of €1,244.1 million, (2) cash payments of €1,043.8 million, (3) additions of €285.8 million in non-cash accrued interest and (4) a €21.0 million non-cash decrease related to the settlement of certain related-party amounts. On June 15, 2018, we non-cash settled €7,240.0 million of the Shareholder Loan by converting this amount to equity. During the remaining 2018 period ended December 31, 2018, changes in the Shareholder Loan included (A) cash advances of €3,129.4 million, (B) cash payments of €2,543.6 million, (C) a €767.6 million non-cash decrease related to the settlement of certain related-party amounts, (D) additions of €34.5 million in non-cash accrued interest and (E) a €173.4 million non-cash transfer of the net asset balance outstanding to the LGEF Receivable (as discussed above). As of December 31, 2018, there was no outstanding balance on the Shareholder Loan. During 2017, changes in the Shareholder Loan included (I) cash advances of €3,293.7 million, (II) cash payments of €2,793.0 million, (III) additions of €629.2 million in non-cash accrued interest, (IV) a €263.5 million non-cash decrease related to the settlement of certain related-party amounts and (V) a decrease of €135.5 million related to the non-cash conversion of related-party loans payable and related accrued interest to equity in connection with the Slovakia Transaction. During 2019, 2018 and 2017 none of our Shareholder Loan repayments represented payments of interest.

During 2019, 2018 and 2017, we recorded aggregate capital charges of €8.6 million, €1.9 million and €4.4 million, respectively, in our combined statements of equity (deficit) in connection with the exercise of Liberty Global share appreciation rights and the vesting of Liberty Global restricted share awards and performance-based restricted share units held by employees of our combined entities. We and Liberty Global have agreed that these capital charges will be based on the fair value of the underlying Liberty Global shares associated with share-based incentive awards that vest or are exercised during the period, subject to any reduction that is necessary to ensure that the capital charge does not exceed the amount of share-based compensation expense recorded by our company with respect to Liberty Global share-based incentive awards.

During 2017, LG B.V. contributed property and equipment to our company, which it acquired on our behalf pursuant to certain vendor financing and finance lease arrangements. LG B.V.'s carrying value in such contributed property and equipment of €14.6 million is reflected as a decrease to our parent entities' deficit in our combined statements of equity (deficit).

(14) Defined Benefit Plans

Certain of our combined entities maintain various funded and unfunded defined benefit plans for their employees. The table below provides summary information on our defined benefit plans:

	Year ended December 31,		
	2019	2018	2017
		in millions	
Projected benefit obligation	€ 373.8	€ 307.6	€ 289.5
Fair value of plan assets (a)	€ 364.9	€ 294.0	€ 283.4
Net liability	€ 8.9	€ 13.6	€ 6.1

(a) The fair value of plan assets is based on Level 1 inputs of the fair value hierarchy (as further described in note 7). Our plan assets comprise investments in debt securities, equity securities, real estate and certain other assets.

Our net periodic pension cost was €4.9 million, €2.2 million and €3.6 million during 2019, 2018 and 2017, respectively, including €10.5 million, €10.5 million and €10.9 million, respectively, representing the service cost component. The 2018 amount excludes aggregate curtailment gains of €1.0 million, which are included in impairment, restructuring and other operating items, net in our combined statement of operations.

During 2019, contributions to our defined benefit plans aggregated €13.3 million. Based on December 31, 2019 exchange rates and information available as of that date, we expect this amount to be €13.7 million in 2020.

(15) Accumulated Other Comprehensive Earnings

Accumulated other comprehensive earnings included on our combined balance sheets and statements of equity (deficit) reflect the aggregate impact of foreign currency translation adjustments and pension-related adjustments and other. The changes in the components of accumulated other comprehensive earnings, net of taxes, are summarized below. Except as noted below, we are not required to provide income taxes on amounts recorded in other comprehensive earnings (loss) for the periods presented.

	Parent entities				
	Foreign currency translation adjustments	Pension-related adjustments and other (a)	Accumulated other comprehensive earnings	Non-controlling interests	Total combined accumulated other comprehensive earnings
			in millions		
Balance at January 1, 2017	€ 779.9	€ (16.4)	€ 763.5	€ 0.8	€ 764.3
Other comprehensive loss	(55.1)	6.6	(48.5)	—	(48.5)
Balance at December 31, 2017	724.8	(9.8)	715.0	0.8	715.8
Other comprehensive earnings	80.8	(12.3)	68.5	—	68.5
Balance at December 31, 2018	805.6	(22.1)	783.5	0.8	784.3
Other comprehensive earnings	92.5	(3.1)	89.4	—	89.4
Balance at December 31, 2019	€ 898.1	€ (25.2)	€ 872.9	€ 0.8	€ 873.7

(a) The pension related adjustments included in other comprehensive earnings (loss) are net of income tax benefit (expense) of €0.7 million, €3.6 million and (€1.6 million) for the years ended December 31, 2019, 2018 and 2017, respectively.

(16) 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 programming contracts, purchases of customer premises and other equipment and services, network and connectivity commitments and other items. The following table sets forth the euro equivalents of such commitments as of December 31, 2019. The commitments included in this table do not reflect any liabilities that are included on our December 31, 2019 combined balance sheet:

	Payments due during:						
	2020	2021	2022	2023	2024	Thereafter	Total
				in millions			
Programming commitments	€ 89.5	€ 58.3	€ 22.7	€ 0.1	€ —	€ —	€ 170.6
Purchase commitments	50.8	6.4	—	—	—	—	57.2
Network and connectivity commitments	14.2	9.6	6.8	5.9	1.3	12.6	50.4
Other commitments	2.7	—	—	—	—	—	2.7
Total	€ 157.2	€ 74.3	€ 29.5	€ 6.0	€ 1.3	€ 12.6	€ 280.9

Programming commitments consist of obligations associated with certain of our programming 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 €141.8 million, €137.1 million and €170.1 million during 2019, 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 information technology and maintenance services, including €9.4 million associated with related-party purchase obligations.

Network and connectivity commitments include commitments associated with (i) network maintenance commitments, (ii) commitments associated with our mobile virtual network operator (**MVNO**) agreements and (iii) fiber leasing agreements. 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.

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 2019, 2018 and 2017, see note 6. For information regarding our defined benefit plans, see note 14.

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 €43.1 million, €41.9 million and €42.1 million during 2019, 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.

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.

Other Regulatory Matters. Video distribution, broadband internet, fixed-line telephony, mobile and content businesses are regulated in each of the countries in which we 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 European Union (**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.

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.

(17) Segment Reporting

We generally identify our reportable segments as those operating entities that represent 10% or more of our revenue, Segment OCF (as defined below) or total assets. 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 Segment OCF. In addition, we review non-financial measures such as subscriber growth, as appropriate.

Segment OCF 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, "**Segment OCF**" is defined as operating income before depreciation and amortization, share-based compensation, related-party fees and allocations, 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 long-lived 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 Segment OCF 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 Segment OCF from continuing operations to loss from continuing operations before income taxes is presented below.

As of December 31, 2019, our reportable segments are as follows:

- Switzerland
- Central and Eastern Europe

During the fourth quarter of 2019, as a result of the T&I Allocation, charges for certain costs which were previously included within our related-party fees and allocations, net, are now included within (i) other operating expenses and (ii) SG&A expenses in our combined statements of operations and included within our Segment OCF metric. This change was made as a result of internal changes at Liberty Global with respect to the way in which its chief operating decision maker evaluates the performance of its operating segments. Segment information for all periods presented has been retrospectively revised to reflect this change. For additional information on the impacts of the T&I Allocation, see note 13. The following table provides a summary of the impact on our Segment OCF as a result of the T&I Allocation:

	Year ended December 31,		
	2019	2018	2017
		in millions	
Decrease to Segment OCF:			
Switzerland	€ (29.5)	€ (31.1)	€ (28.0)
Central and Eastern Europe	(13.1)	(13.1)	(11.8)
Total decrease to Segment OCF	€ (42.6)	€ (44.2)	€ (39.8)

Performance Measures of Our Reportable Segments

	Year ended December 31,					
	2019		2018		2017	
	Revenue	Segment OCF	Revenue	Segment OCF (a)(b)	Revenue	Segment OCF (a)(b)
	in millions					
Switzerland	€ 1,124.4	€ 560.7	€ 1,122.3	€ 603.1	€ 1,214.1	€ 710.4
Central and Eastern Europe	424.7	191.9	416.5	198.0	413.8	194.7
Central and Corporate and intersegment eliminations (c)	(0.1)	(3.1)	(0.4)	(5.4)	(0.1)	(4.1)
Total	€ 1,549.0	€ 749.5	€ 1,538.4	€ 795.7	€ 1,627.8	€ 901.0

(a) As retrospectively revised, see note 5.

(b) Amounts have been revised to reflect the retrospective impact of the T&I Allocation, as described above.

(c) Amounts include 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 OCF from continuing operations to loss from continuing operations before income taxes:

	Year ended December 31,		
	2019	2018 (a)(b)	2017 (a)(b)
	in millions		
Total Segment OCF from continuing operations	€ 749.5	€ 795.7	€ 901.0
Share-based compensation expense	(20.6)	(12.3)	(7.4)
Related-party fees and allocations, net	(160.2)	(54.1)	(208.8)
Depreciation and amortization	(343.3)	(345.0)	(363.7)
Impairment, restructuring and other operating items, net	(12.2)	(5.1)	(6.1)
Operating income	213.2	379.2	315.0
Interest expense:			
Third-party	(222.7)	(258.9)	(297.9)
Related-party	(47.3)	(391.7)	(713.9)
Interest income	12.1	107.2	151.3
Realized and unrealized gains (losses) on derivative instruments, net	28.5	155.0	(165.2)
Foreign currency transaction gains (losses), net	(74.0)	(107.8)	141.3
Losses on debt modification and extinguishment, net	(13.8)	(5.3)	(97.0)
Other income, net	7.5	5.6	10.6
Loss from continuing operations before income taxes	€ (96.5)	€ (116.7)	€ (655.8)

(a) As retrospectively revised, see note 5.

(b) Amounts have been revised to reflect the retrospective impact of the T&I Allocation, as described above.

Balance Sheet Data of our Reportable Segments

Selected balance sheet data of our reportable segments is set forth below:

	Long-lived assets		Total assets	
	December 31,		December 31,	
	2019	2018 (a)	2019	2018 (a)
	in millions			
Switzerland	€ 3,782.8	€ 3,637.3	€ 4,152.6	€ 3,975.1
Central and Eastern Europe	945.9	949.6	1,015.1	988.5
Central and Corporate	—	—	964.7	1,349.9
Total	€ 4,728.7	€ 4,586.9	€ 6,132.4	€ 6,313.5

(a) As retrospectively revised, see note 5.

Property and Equipment Additions of our Reportable Segments

The property and equipment additions of our reportable segments (including capital additions financed under vendor financing or finance lease arrangements) are presented below and reconciled to the capital expenditure amounts included in our combined statements of cash flows. For additional information concerning capital additions financed under vendor financing and finance lease arrangements, see notes 8 and 10.

	Year ended December 31,		
	2019	2018 (a)	2017 (a)
	in millions		
Switzerland	€ 248.3	€ 212.5	€ 214.5
Central and Eastern Europe	95.8	129.9	139.2
Total segment property and equipment additions	344.1	342.4	353.7
Assets acquired under capital-related vendor financing arrangements	(405.4)	(364.3)	(563.1)
Assets contributed by parent entities	—	—	(14.6)
Assets acquired under finance leases	(3.3)	(1.9)	(1.3)
Changes in current liabilities related to capital expenditures (including related-party amounts)	356.9	262.0	463.6
Total capital expenditures, net	€ 292.3	€ 238.2	€ 238.3

(a) As retrospectively revised, see note 5.

Revenue by Major Category

Our revenue by major category is set forth below:

	Year ended December 31,		
	2019	2018	2017
		in millions	
Residential revenue:			
Residential cable revenue (a):			
Subscription revenue (b):			
Video	€ 673.6	€ 702.7	€ 759.4
Broadband internet	391.4	391.3	415.0
Fixed-line telephony	105.3	113.5	129.6
Total subscription revenue	1,170.3	1,207.5	1,304.0
Non-subscription revenue	79.0	77.5	99.7
Total residential cable revenue	1,249.3	1,285.0	1,403.7
Residential mobile revenue (c):			
Subscription revenue (b)	58.9	44.1	32.5
Non-subscription revenue	27.3	14.1	14.1
Total residential mobile revenue	86.2	58.2	46.6
Total residential revenue	1,335.5	1,343.2	1,450.3
B2B revenue (d):			
Subscription revenue	46.5	42.5	37.1
Non-subscription revenue	164.3	149.1	140.4
Total B2B revenue	210.8	191.6	177.5
Other revenue	2.7	3.6	—
Total	€ 1,549.0	€ 1,538.4	€ 1,627.8

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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. As described in note 2, we adopted ASU 2014-09 on January 1, 2018 using the cumulative effect transition method. For periods subsequent to our adoption of ASU 2014-09, installation revenue is generally deferred and recognized over the contractual period as residential cable subscription revenue. For periods prior to the adoption of ASU 2014-09, 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 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.

Geographic Segments

The revenue of our geographic segments is set forth below:

	Year ended December 31,		
	2019	2018	2017
		in millions	
Switzerland	€ 1,124.4	€ 1,122.3	€ 1,214.1
Poland	380.3	372.9	369.8
Slovakia	44.4	43.6	44.0
Other, including intersegment eliminations	(0.1)	(0.4)	(0.1)
Total	€ 1,549.0	€ 1,538.4	€ 1,627.8

The long-lived assets of our geographic segments are set forth below:

	December 31,	
	2019	2018 (a)
	in millions	
Switzerland	€ 3,782.8	€ 3,637.3
Poland	834.4	837.2
Slovakia	111.5	112.4
Total	€ 4,728.7	€ 4,586.9

(a) As retrospectively revised, see note 5.

(18) Subsequent Event

In January 2020, we entered into (i) a $700.0 million (€623.4 million) term loan facility (**UPC Facility AT**) and (ii) a €400.0 million term loan facility (**UPC Facility AU**). UPC Facility AT was issued at 99.75% of par, matures on April 30, 2028 and bears interest at a rate of LIBOR + 2.25%, subject to a LIBOR floor of 0.0%. UPC Facility AU was issued at 99.875% of par, matures on April 30, 2029 and bears interest at a rate of EURIBOR + 2.50%, subject to a EURIBOR floor of 0.0%. The net proceeds from these facilities were used to prepay in full the $1,140.0 million (€1,015.2 million) outstanding principal amount under UPC Facility AL, 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 in full the $1,140.0 million outstanding principal amount of UPCB Finance IV Dollar Notes.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

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

- *Forward-looking Statements.* This section provides a description of certain factors that could cause actual results or events to differ materially from anticipated results or events.
- *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, 2019 and 2018.
- *Liquidity and Capital Resources.* This section provides an analysis of our liquidity, combined 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.

The capitalized terms used below have been defined in the notes to our combined financial statements. In the following text, the terms, "we," "our," "our company" and "us" may refer, as the context requires, to UPC Holding or the UPC Holding Group.

Unless otherwise indicated, convenience translations into euros are calculated, and operational data are presented, as of December 31, 2019.

Included below is an analysis of our results of operations and cash flows for December 31, 2019, as compared to 2018. An analysis of our results of operations and cash flows for 2018, as compared to 2017, can be found in our *Management's Discussion and Analysis of Financial Condition and Results of Operations* in our 2018 combined financial statements.

Forward-looking Statements

Certain statements in this annual report constitute forward-looking statements. To the extent that statements in this annual report are not recitations of historical fact, such statements constitute forward-looking statements, which, by definition, involve risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such statements. In particular, statements under *Management's Discussion and Analysis of Financial Condition and Results of Operations* may contain forward-looking statements, including statements regarding our business, product, foreign currency and finance strategies, subscriber growth and retention rates, competitive, regulatory and economic factors, the timing and impacts of proposed transactions, the maturity of our markets, the anticipated impacts of new legislation (or changes to existing rules and regulations), anticipated changes in our revenue, costs or growth rates, our liquidity, credit risks, foreign currency risks, interest rate risks, target leverage levels, debt covenants, our future projected contractual commitments and cash flows and other information and statements that are not historical fact. Where, in any forward-looking statement, we express an expectation or belief as to future results or events, such expectation or belief is expressed in good faith and believed to have a reasonable basis, but there can be no assurance that the expectation or belief will result or be achieved or accomplished. In evaluating these statements, you should consider the risks and uncertainties in the following list, and those described herein, as some but not all of the factors that could cause actual results or events to differ materially from anticipated results or events:

- economic and business conditions and industry trends in the countries in which we operate;
- the competitive environment in the industries in the countries in which we operate, including competitor responses to our products and services;
- fluctuations in currency exchange rates and interest rates;
- instability in global financial markets, including sovereign debt issues and related fiscal reforms;
- consumer disposable income and spending levels, including the availability and amount of individual consumer debt;
- changes in consumer television viewing and broadband usage preferences and habits;
- consumer acceptance of our existing service offerings, including our cable television, broadband internet, fixed-line telephony, mobile and business service offerings, and of new technology, programming alternatives and other products and services that we may offer in the future;

- our ability to manage rapid technological changes;
- our ability to maintain or increase the number of subscriptions to our cable television, broadband internet, fixed-line telephony and mobile service offerings and our average revenue per household;
- our ability to provide satisfactory customer service, including support for new and evolving products and services;
- our ability to maintain or increase rates to our subscribers or to pass through increased costs to our subscribers;
- the impact of our future financial performance, or market conditions generally, on the availability, terms and deployment of capital;
- changes in, or failure or inability to comply with, government regulations in the countries in which we operate and adverse outcomes from regulatory proceedings;
- government intervention that requires opening our broadband distribution networks to competitors;
- our ability to obtain regulatory approval and satisfy other conditions necessary to close acquisitions and dispositions and the impact of conditions imposed by competition and other regulatory authorities in connection with acquisitions;
- our ability to successfully acquire new businesses and, if acquired, to integrate, realize anticipated efficiencies from and implement our business plan with respect to the businesses we have acquired or that we expect to acquire;
- changes in laws or treaties relating to taxation, or the interpretation thereof, in countries in which we operate;
- changes in laws and government regulations that may impact the availability and cost of capital and the derivative instruments that hedge certain of our financial risks;
- the ability of suppliers and vendors (including our third-party wireless network providers under our MVNO arrangements) to timely deliver quality products, equipment, software, services and access;
- the availability of attractive programming for our video services and the costs associated with such programming, including retransmission and copyright fees payable to public and private broadcasters;
- uncertainties inherent in the development and integration of new business lines and business strategies;
- our ability to adequately forecast and plan future network requirements, including the costs and benefits associated with any planned network extensions;
- the availability of capital for the acquisition and/or development of telecommunications networks and services;
- problems we may discover post-closing with the operations, including the internal controls and financial reporting process, of businesses we acquire;
- the leakage of sensitive customer data;
- the outcome of any pending or threatened litigation;
- the loss of key employees and the availability of qualified personnel;
- changes in the nature of key strategic relationships with partners and joint venturers; and
- events that are outside of our control, such as political unrest in international markets, terrorist attacks, malicious human acts, natural disasters, pandemics or epidemics (such as the coronavirus (COVID-19)) and other similar events.

The broadband distribution and mobile service industries are changing rapidly and, therefore, the forward-looking statements of expectations, plans and intent in this annual report are subject to a significant degree of risk. These forward-looking statements and the above-described risks, uncertainties and other factors speak only as of the date of this annual report, and we expressly disclaim any obligation or undertaking to disseminate any updates or revisions to any forward-looking statement contained herein, to reflect any change in our expectations with regard thereto, or any other change in events, conditions or circumstances on which any such statement is based. Readers are cautioned not to place undue reliance on any forward-looking statement.

Overview

General

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 B2B communications services in Switzerland, Poland and Slovakia.

As further described in note 5 to our combined financial statements, Liberty Global (i) completed the sale of our operations in Romania, Hungary and the Czech Republic (exclusive of our UPC DTH operations) on July 31, 2019, (ii) completed the sale of the operations of UPC DTH on May 2, 2019 and (iii) completed the sale of our operations in Austria on July 31, 2018. Accordingly, our operations in Austria, Romania, Hungary, the Czech Republic and the operations of UPC DTH are presented as discontinued operations for all applicable periods. 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. In addition, during the fourth quarter of 2019, we completed the UPC Transfers, as described in note 5. We have accounted for the UPC Transfers as common control transfers at carryover basis and the applicable prior period information has been retrospectively revised to give effect to these transactions for all periods presented.

Operations

At December 31, 2019, we owned and operated networks that passed 6,539,600 homes and served 5,746,400 revenue generating units (**RGUs**), consisting of 2,446,800 video subscribers, 2,031,600 broadband internet subscribers and 1,268,000 fixed-line telephony subscribers. In addition, at December 31, 2019, we served 209,700 mobile subscribers.

Video services. We provide video services, including various enhanced products that enable our customers to control when they watch their programming. These products range from digital video recorders to multimedia home gateway systems capable of distributing video, voice and data content throughout the home and to multiple devices.

Broadband internet services. We offer multiple tiers of broadband internet service with available maximum download speeds as high as 1 Gbps depending on location. We continue to invest in new technologies that allow us to increase the internet speeds we offer to our customers.

Fixed-line telephony services. We offer fixed-line telephony services via either voice-over-internet-protocol or “VoIP” technology or circuit-switched telephony, depending on location.

Mobile services. We offer voice and data mobile services through third-party MVNO networks in Switzerland and Poland. In addition, we generate revenue from the sale of mobile handsets.

B2B services. Our B2B services include voice, broadband internet, data, video, wireless and cloud services.

Strategy and Management Focus

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.

Competition and Other External Factors

We are experiencing competition in all of the markets in which we operate. This competition, 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**). For additional information regarding the revenue impact of changes in the RGUs and ARPU of our 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 voters approved, on an advisory basis, an exit from the E.U., commonly referred to as "**Brexit**." The U.K. formally exited the E.U. on January 31, 2020, and has now entered into a transition period until December 31, 2020, during which the U.K. and the E.U. will negotiate to formalize the future U.K.-E.U. relationship with respect to a number of matters, most notably trade. Although the U.K. has ceased to be an E.U. member, during the transition period their trading relationship will remain the same and the U.K. will continue to follow the E.U.'s rules, such as accepting rulings from the European Court of Justice, and the U.K. will continue to contribute to the E.U.'s budget. Uncertainty remains as to what specific terms of separation may be agreed during the transition period. It is possible that the U.K. will fail to agree to specific separation terms with the E.U. by the end of the transition period, which, absent extension, may require the U.K. to leave the E.U. under a so-called "hard Brexit" or "no-deal Brexit" without specific agreements on trade, finance and other key elements. The foregoing has caused 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. The effects of Brexit could adversely affect our business, results of operations and financial condition.

Results of Operations

The comparability of our operating results during 2019 and 2018 is affected by acquisitions. 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 most of our operating segments have functional currencies other than the euro. Our primary exposure to foreign exchange (**FX**) risk during the three months ended December 31, 2019 was to the Swiss franc and other local currencies in Europe as 97.1% of our euro revenue during the period was derived from our combined entities whose functional currencies are those other than the euro. 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 Combined Operating Results* below.

Discussion and Analysis of our Reportable Segments

General

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 17 to our combined financial statements.

The tables presented below in this section provide the details of the revenue and Segment OCF of our combined reportable segments for 2019, as compared to 2018. These tables present (i) the amounts reported for the current and comparative periods, (ii) the reported euro and percentage change from period to period and (iii) the organic percentage change from period to period. The comparisons that exclude FX assume that exchange rates remained constant at the prior-year rate during the comparative periods that are included in each table. We also provide a table showing the Segment OCF margins of our combined reportable segments for 2019, 2018 and 2017 at the end of this section.

All 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 Segment OCF and Segment OCF 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 Segment OCF 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 combined reportable segments (**non-functional currency expenses**). 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.

Revenue of our Reportable Segments

General. While not specifically discussed in the below explanations of the changes in the revenue of our reportable segments, we are experiencing 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 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 — 2019 compared to 2018

	Year ended December 31,		Increase		Organic increase (decrease)
	2019	2018	€	%	%
	in millions, except percentages				
Switzerland	€ 1,124.4	€ 1,122.3	€ 2.1	0.2	(3.6)
Central and Eastern Europe	424.7	416.5	8.2	2.0	2.7
Intersegment eliminations	(0.1)	(0.4)	0.3	N.M.	N.M.
Total	€ 1,549.0	€ 1,538.4	€ 10.6	0.7	(1.8)

N.M. — Not Meaningful.

Switzerland. The details of the increase in Switzerland's revenue during 2019, as compared to 2018, 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)	€ (59.3)	€ —	€ (59.3)
ARPU (b)	(11.4)	—	(11.4)
Decrease in residential cable non-subscription revenue (c)	—	(0.2)	(0.2)
Total decrease in residential cable revenue	(70.7)	(0.2)	(70.9)
Increase in residential mobile revenue (d)	12.6	11.9	24.5
Increase in B2B revenue (e)	1.1	6.6	7.7
Decrease in other revenue	—	(1.4)	(1.4)
Total organic increase (decrease)	(57.0)	16.9	(40.1)
Impact of acquisitions	0.9	—	0.9
Impact of FX	32.2	9.1	41.3
Total	€ (23.9)	€ 26.0	€ 2.1

(a) The decrease in residential cable subscription revenue related to a change in the average number of RGUs is primarily attributable to a decline in the average number of video and broadband internet RGUs.

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

(c) The decrease in residential cable non-subscription revenue is primarily attributable to the net effect of (i) a decrease in revenue associated with our Swiss sports channels and (ii) higher revenue from construction services provided to our partner networks.

(d) The increase in residential mobile subscription revenue is primarily due to an increase in the average number of mobile subscribers. The increase in residential mobile non-subscription revenue is primarily attributable to an increase in revenue from mobile handset sales.

(e) The increase in B2B non-subscription revenue is primarily due to higher revenue from wholesale fixed-line telephony services.

Central and Eastern Europe. The details of the increase in Central and Eastern Europe's revenue during 2019, as compared to 2018, 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)	€ 11.4	€ —	€ 11.4
ARPU (b)	(5.1)	—	(5.1)
Decrease in residential cable non-subscription revenue	—	(1.1)	(1.1)
Total increase (decrease) in residential cable revenue	6.3	(1.1)	5.2
Increase in residential mobile revenue	—	0.1	0.1
Increase in B2B revenue (c)	2.5	3.0	5.5
Increase in other revenue	—	0.6	0.6
Total organic increase	8.8	2.6	11.4
Impact of FX	(3.3)	0.1	(3.2)
Total	€ 5.5	€ 2.7	€ 8.2

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

(b) The decrease in residential cable subscription revenue related to a change in ARPU is primarily due to our operations in Poland, including (i) a net decrease due to (a) lower ARPU from video services and (b) higher ARPU from broadband internet services and (ii) an adverse change in RGU mix.

(c) The increase in B2B subscription revenue is largely attributable to an increase in the average number of SOHO subscribers. The increase in B2B non-subscription revenue is primarily due to an increase in revenue from wholesale services in Poland.

Revenue — 2018 compared to 2017

For discussion and analysis of the revenue of our combined reportable segments during 2018, as compared to 2017, see *Management's Discussion and Analysis of Financial Condition and Results of Operations* in our 2018 combined financial statements.

Programming and Other Direct Costs of Services of our Reportable Segments

Programming and other direct costs of services include programming and copyright costs, interconnect and access costs, costs of mobile handsets and other devices and other direct costs related to our operations. Programming and copyright costs represent a significant portion of our operating costs and are subject to rise in future periods due to various factors, including (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 and (ii) rate increases.

	Year ended December 31,		Increase		Organic increase
	2019	2018	€	%	%
	in millions, except percentages				
Switzerland	€ 237.7	€ 213.9	€ 23.8	11.1	7.1
Central and Eastern Europe	103.7	94.1	9.6	10.2	11.2
Central and Corporate and intersegment eliminations	—	(0.4)	0.4	N.M.	N.M.
Total	€ 341.4	€ 307.6	€ 33.8	11.0	8.5

N.M. — Not Meaningful.

Our programming and other direct costs of services increased €33.8 million or 11.0% during 2019, as compared to 2018. On an organic basis, our programming and other direct costs of services increased €26.0 million or 8.5%. This increase includes the following factors:

- An increase in mobile handset and other device costs of €10.0 million or 99.5%, primarily due to higher sales volumes in Switzerland;
- An increase in interconnect and access costs of €9.5 million or 12.1%, primarily due to increases in Switzerland related to (i) higher interconnect and roaming costs, (ii) higher lease and B2B data costs and (iii) higher MVNO costs; and
- An increase in programming and copyright costs of €1.2 million or 0.7% due to higher costs for certain premium and/or basic content, primarily due to an increase in Poland that was only partially offset by a decrease in Switzerland.

Other Operating Expenses of our Reportable Segments

Other operating expenses include network operations, customer operations, customer care and other costs related to our operations.

	Year ended December 31,		Increase (decrease)		Organic increase (decrease)
	2019	2018 (a)(b)	€	%	%
	in millions, except percentages				
Switzerland	€ 159.8	€ 157.5	€ 2.3	1.5	(3.0)
Central and Eastern Europe	63.4	61.5	1.9	3.1	4.0
Central and Corporate and intersegment eliminations	0.8	1.2	(0.4)	N.M.	N.M
Total	€ 224.0	€ 220.2	€ 3.8	1.7	(1.3)

N.M. — Not Meaningful.

(a) As retrospectively revised, see note 5.

(b) Amounts have been revised to reflect the retrospective impact of the T&I Allocation, as further described in note 17 to our combined financial statements.

Our other operating expenses increased €3.8 million or 1.7% during 2019, as compared to 2018. On an organic basis, our other operating expenses decreased €2.8 million or 1.3%. This decrease includes the following factors:

- An increase in core network and information technology-related expenses of €7.3 million or 16.4%, primarily due to increases in (i) network maintenance and energy costs, primarily in Switzerland and Poland, (ii) information technology-related expenses in Switzerland and (iii) leased bandwidth and outsourced data center costs, primarily in Switzerland and Poland;

- A decrease in outsourced labor costs of €5.3 million or 26.0%, primarily associated with customer-facing activities in Switzerland; and

- A decrease in customer service costs of €4.8 million or 13.9%, primarily due to a decrease in customer premises equipment refurbishment costs in Switzerland.

SG&A Expenses of our Reportable Segments

SG&A expenses include human resources, information technology, general services, management, finance, legal, external sales and marketing costs, share-based compensation and other general expenses. We do not include share-based compensation in the following discussion and analysis of the SG&A expenses of our reportable segments as share-based compensation expense is not included in the performance measures of our reportable segments. Share-based compensation expense is discussed under *Discussion and Analysis of Our Combined Operating Results* below.

	Year ended December 31,		Increase (decrease)		Organic increase
	2019	2018 (a)(b)	€	%	%
	in millions, except percentages				
Switzerland	€ 166.2	€ 147.8	€ 18.4	12.4	8.0
Central and Eastern Europe	65.7	62.9	2.8	4.5	4.8
Central and Corporate and intersegment eliminations	2.2	4.2	(2.0)	N.M.	N.M.
Total SG&A expenses excluding share-based compensation expense	234.1	214.9	19.2	8.9	6.0
Share-based compensation expense	20.6	12.3	8.3	67.5	
Total	€ 254.7	€ 227.2	€ 27.5	12.1	

N.M. — Not Meaningful.

(a) As retrospectively revised, see note 5.

(b) Amounts have been revised to reflect the retrospective impact of the T&I Allocation, as further described in note 17 to our combined financial statements.

Our SG&A expenses (exclusive of share-based compensation expense) increased €19.2 million or 8.9% during 2019, as compared to 2018. On an organic basis, our SG&A expenses increased €13.0 million or 6.0%. This increase includes the following:

- An increase in personnel costs of €15.1 million or 14.7%, primarily due to (i) higher staffing levels, primarily in Switzerland, (ii) higher average costs per employee, primarily in Poland, (iii) lower capitalizable labor activities, primarily in Switzerland, (iv) higher incentive compensation costs, primarily in Switzerland, and (v) an increase in temporary personnel costs in Switzerland.

Segment OCF of our Reportable Segments

Segment OCF 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 total Segment OCF from continuing operations to loss from continuing operations before income taxes, see note 17 to our combined financial statements.

Segment OCF — 2019 compared to 2018

	Year ended December 31,		Increase (decrease)		Organic decrease
	2019	2018 (a)(b)	€	%	%
	in millions, except percentages				
Switzerland	€ 560.7	€ 603.1	€ (42.4)	(7.0)	(10.4)
Central and Eastern Europe	191.9	198.0	(6.1)	(3.1)	(2.3)
Central and Corporate and intersegment eliminations	(3.1)	(5.4)	2.3	N.M.	N.M.
Total	€ 749.5	€ 795.7	€ (46.2)	(5.8)	(8.1)

Segment OCF — 2018 compared to 2017

	Year ended December 31,		Increase (decrease)		Organic increase (decrease)
	2018 (a)(b)	2017 (a)(b)(c)	€	%	%
	in millions, except percentages				
Switzerland	€ 603.1	€ 707.8	€ (104.7)	(14.8)	(11.3)
Central and Eastern Europe	198.0	195.4	2.6	1.3	1.4
Central and Corporate and intersegment eliminations	(5.4)	(4.1)	(1.3)	N.M.	N.M.
Total	€ 795.7	€ 899.1	€ (103.4)	(11.5)	(8.8)

N.M. — Not Meaningful.

(a) As retrospectively revised, see note 5.

(b) Amounts have been revised to reflect the retrospective impact of the T&I Allocation, as further described in note 17 to our combined financial statements.

(c) As further described in note 2 to our combined financial statements, we adopted ASU 2014-09 on January 1, 2018 using the cumulative effect transition method. In order to provide a more meaningful comparison, Segment OCF for 2017 is presented on a pro forma basis that gives effect to the adoption of ASU 2014-09 as if such adoption had occurred on January 1, 2017.

Segment OCF Margin — 2019, 2018 and 2017

The following table sets forth the Segment OCF margins (Segment OCF divided by revenue) of each of our reportable segments:

	Year ended December 31,		
	2019	2018 (a)(b)	2017 (a)(b)(c)
		%	
Switzerland	49.9	53.7	58.4
Central and Eastern Europe	45.2	47.5	47.4
Total, including other	48.4	51.7	55.4

(a) As retrospectively revised, see note 5.

(b) Amounts have been revised to reflect the retrospective impact of the T&I Allocation, as further described in note 17 to our combined financial statements.

(c) As further described in note 2 to our combined financial statements, we adopted ASU 2014-09 on January 1, 2018 using the cumulative effect transition method. In order to provide a more meaningful comparison, Segment OCF for 2017 is presented on a pro forma basis that gives effect to the adoption of ASU 2014-09 as if such adoption had occurred on January 1, 2017.

In addition to organic changes in the revenue, operating and SG&A of our reportable segments, the Segment OCF margins presented above include the impact of acquisitions. For discussion of the factors contributing to the changes in the Segment OCF margins of our reportable segments, see the above analyses of the revenue and expenses of our reportable segments.

Discussion and Analysis of our Combined Operating Results

General

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

2019 compared to 2018

Revenue

Our revenue by major category is set forth below:

	Year ended December 31,		Increase (decrease)		Organic increase (decrease)
	2019	2018	€	%	%
	in millions, except percentages				
Residential revenue:					
Residential cable revenue (a):					
Subscription revenue (b):					
Video	€ 673.6	€ 702.7	€ (29.1)	(4.1)	(6.2)
Broadband internet	391.4	391.3	0.1	—	(2.5)
Fixed-line telephony	105.3	113.5	(8.2)	(7.2)	(10.0)
Total subscription revenue	1,170.3	1,207.5	(37.2)	(3.1)	(5.3)
Non-subscription revenue	79.0	77.5	1.5	1.9	(1.5)
Total residential cable revenue	1,249.3	1,285.0	(35.7)	(2.8)	(5.1)
Residential mobile revenue (c):					
Subscription revenue (b)	58.9	44.1	14.8	33.6	28.6
Non-subscription revenue	27.3	14.1	13.2	93.6	85.8
Total residential mobile revenue	86.2	58.2	28.0	48.1	42.4
Total residential revenue	1,335.5	1,343.2	(7.7)	(0.6)	(3.0)
B2B revenue (d):					
Subscription revenue	46.5	42.5	4.0	9.4	8.5
Non-subscription revenue	164.3	149.1	15.2	10.2	6.6
Total B2B revenue	210.8	191.6	19.2	10.0	7.0
Other revenue	2.7	3.6	(0.9)	(25.0)	N.M.
Total	€ 1,549.0	€ 1,538.4	€ 10.6	0.7	(1.8)

N.M. — Not Meaningful.

(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 €6.6 million and €4.8 million during 2019 and 2018, 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.

Total revenue. Our combined revenue increased €10.6 million or 0.7% during 2019, as compared to 2018. On an organic basis, our combined revenue decreased €28.4 million or 1.8%.

Residential revenue. The details of the decrease in our combined residential revenue for 2019, as compared to 2018, are as follows (in millions):

Decrease in residential cable subscription revenue due to change in:		
Average number of RGUs	€	(13.8)
ARPU		(50.6)
Decrease in residential cable non-subscription revenue		(1.2)
Total decrease in residential cable revenue		(65.6)
Increase in residential mobile subscription revenue		12.6
Increase in residential mobile non-subscription revenue		12.1
Total organic decrease in residential revenue		(40.9)
Impact of acquisitions		0.9
Impact of FX		32.3
Total decrease in residential revenue	€	(7.7)

On an organic basis, our combined residential cable subscription revenue decreased €64.4 million or 5.3% during 2019, as compared to 2018. This decrease is due to (i) a decrease from video services of €43.3 million or 6.2%, attributable to a decrease in the average number of video RGUs and lower ARPU, (ii) a decrease from fixed-line telephony services of €11.3 million or 10.0%, attributable to the net effect of lower ARPU and an increase in the average number of RGUs, and (iii) a decrease from broadband internet services of €9.8 million or 2.5%, primarily due to lower ARPU.

On an organic basis, our combined residential cable non-subscription revenue decreased €1.2 million or 1.5% during 2019, as compared to 2018. This decrease is primarily attributable decreases in Switzerland and Poland.

On an organic basis, our combined residential mobile subscription revenue increased €12.6 million or 28.6% during 2019, as compared to 2018. This increase is primarily due to an increase in Switzerland.

On an organic basis, our combined residential mobile non-subscription revenue increased €12.1 million or 85.8% during 2019, as compared to 2018. This increase is due to an increase in revenue from sales of mobile handsets in Switzerland.

B2B revenue. On an organic basis, our combined B2B subscription revenue increased €3.6 million or 8.5% during 2019, as compared to 2018. This increase is primarily due to increases in SOHO revenue in Poland and Switzerland.

On an organic basis, our combined B2B non-subscription revenue increased €9.9 million or 6.6% during 2019, as compared to 2018. This increase is primarily due to increases in Switzerland and Poland.

For additional information concerning the changes in our residential and B2B revenue, see *Discussion and Analysis of our Reportable Segments — Revenue — 2019 compared to 2018* above. For information regarding the competitive environment in certain of our markets, see *Overview* above.

Programming and other direct costs of services

Our programming and other direct costs of services increased €33.8 million during 2019, as compared to 2018. On an organic basis, our programming and other direct costs of services increased €26.0 million or 8.5% during 2019, as compared to 2018. For additional information regarding the changes in our programming and other direct costs of services, see *Discussion and Analysis of our Reportable Segments — Programming and Other Direct Costs of Services of our Reportable Segments* above.

Other operating expenses

Our other operating expenses increased €3.8 million during 2019, as compared to 2018. On an organic basis, our other operating expenses decreased €2.8 million or 1.3% during 2019, as compared to 2018. For additional information regarding the changes in our other operating expenses, see *Discussion and Analysis of our Reportable Segments — Other Operating Expenses of our Reportable Segments* above.

SG&A expenses

Our SG&A expenses increased €27.5 million during 2019, as compared to 2018. Our SG&A expenses include share-based compensation expense, which increased €8.3 million during 2019, as compared to 2018. For additional information, see the discussion in the following paragraph. Excluding share-based compensation expense, on an organic basis our SG&A expenses increased €13.0 million or 6.0% during 2019, as compared to 2018. For additional information regarding the changes in our SG&A expenses, see *Discussion and Analysis of our Reportable Segments — SG&A Expenses of our Reportable Segments* above.

Share-based compensation expense

The amounts allocated by Liberty Global to our company represent the share-based compensation associated with the Liberty Global share-based incentive awards held by certain employees of our combined entities. A summary of the aggregate share-based compensation expense that is included in our SG&A expenses is set forth below:

	Year ended December 31,	
	2019	**2018**
	in millions	
Performance-based incentive awards	€ 12.8	€ 3.3
Other share-based incentive awards	7.8	9.0
Total	€ 20.6	€ 12.3

Related-party fees and allocations, net

We recorded related-party fees and allocations, net, related to our estimated share of the applicable costs incurred by Liberty Global subsidiaries of €160.2 million during 2019, as compared to €54.1 million during 2018. These charges generally relate to management, finance, legal, technology and other corporate and administrative services provided to or by our combined entities. For additional information, including the impact of the T&I Allocation on our related-party fees and allocations, net, see notes 13 and 17 to our combined financial statements.

Depreciation and amortization expense

Our depreciation and amortization expense was €343.3 million and €345.0 million during 2019 and 2018, respectively. Excluding the effects of FX, depreciation and amortization expense decreased €9.2 million or 2.7%, primarily due to the net effect of (i) 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, primarily in Poland and Switzerland, (ii) a decrease associated with certain assets becoming fully depreciated, primarily in Poland, and (iii) a decrease associated with certain intangibles becoming fully amortized in Poland.

Impairment, restructuring and other operating items, net

We recognized impairment, restructuring and other operating items, net, of €12.2 million during 2019, as compared to €5.1 million during 2018. The 2019 amount is primarily related to employee and severance and termination costs related to certain reorganization activities in Switzerland. The 2018 amount is primarily related to (i) employee severance and termination costs related to certain reorganization activities in Poland, Switzerland and Slovakia and (ii) office closures in Switzerland.

If, among other factors, (i) our enterprise value or Liberty Global's equity value were to decline 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 long-lived assets. Any such impairment charges could be significant. For additional information, see *Critical Accounting Policies, Judgments and Estimates — Impairment of Property and Equipment and Intangible Assets* below.

Interest expense – third-party

Our third-party interest expense decreased €36.2 million during 2019, as compared to 2018. This decrease is primarily attributable to the net effect of (i) lower average outstanding third-party debt balances and (ii) higher weighter average interest rates. For additional information regarding our outstanding indebtedness, see note 9 to our combined 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 6 to our combined financial statements, we use derivative instruments to manage our interest rate risks.

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. Additionally, the European Money Markets Institute (the authority that administers EURIBOR) has announced that measures will need to be undertaken by the end of 2021 to reform EURIBOR to ensure compliance with E.U. Benchmarks Regulation. 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 and EURIBOR-indexed debt to the extent LIBOR or EURIBOR (as applicable) are not available, which alternative calculations we do not anticipate will be materially different from what would have been calculated under LIBOR or EURIBOR (as applicable). Additionally, no mandatory prepayment or redemption provisions would be triggered under our loan documents in the event that either the LIBOR rate or the EURIBOR rate is not available. It is possible, however, that any new reference rate that applies to our LIBOR-indexed or EURIBOR-indexed debt could be different than any new reference rate that applies to our LIBOR-indexed or EURIBOR-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 the company may incur significant associated costs.

Interest expense – related-party

Our related-party interest expense primarily relates to interest expense on the Shareholder Loan. Our related-party interest expense decreased €344.4 million during 2019, as compared to 2018. This decrease is primarily due to the non-cash settlement of the Shareholder Loan during the second quarter of 2018. For additional information regarding the Shareholder Loan, see note 13 to our combined financial statements.

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,	
	2019	2018
	in millions	
Cross-currency and interest rate derivative contracts (a)	€ 30.1	€ 153.1
Foreign currency forward and option contracts	(2.8)	2.0
Other	1.2	(0.1)
Total	€ 28.5	€ 155.0

(a) The gain during 2019 is primarily attributable to the net effect of (i) a net gain associated with changes in certain market interest rates and (ii) a net loss associated with changes in the relative value of certain currencies. In addition, the gain during 2019 includes a net loss of €21.7 million resulting from changes in our credit risk valuation adjustments. The gain during 2018 is primarily attributable the net effect of (a) a net gain associated with changes in the relative value of certain currencies and (b) a net loss associated with changes in certain market interest rates. In addition, the gain during 2018 includes a net loss of €11.5 million resulting from changes in our credit risk valuation adjustments.

For additional information regarding our derivative instruments, see notes 6 and 7 to our combined financial statements.

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,	
	2019	2018 (a)
	in millions	
U.S. dollar denominated debt issued by euro functional currency entities	€ (47.7)	€ (69.7)
Intercompany payables and receivables denominated in a currency other than the entity's functional currency (b)	(29.0)	(33.8)
Cash and restricted cash denominated in a currency other than the entity's functional currency	5.0	(4.3)
Other	(2.3)	—
Total	€ (74.0)	€ (107.8)

(a) As retrospectively revised, see note 5.

(b) Amounts primarily relate to (i) loans between certain of our non-operating and operating entities, which generally are denominated in the currency of the applicable operating entity, and (ii) loans between certain of our non-operating entities.

Losses on debt modification and extinguishment, net

We recognized net losses on debt modification and extinguishment of €13.8 million and €5.3 million during 2019 and 2018, respectively. The loss during 2019 is attributable to the write-off of unamortized deferred financing costs and discounts. The loss during 2018 is primarily attributable to (i) the write-off of €5.9 million of unamortized deferred financing costs and discounts and (ii) the payment of €1.8 million of redemption premiums. For additional information concerning our losses on debt modification and extinguishment, net, see note 9 to our combined financial statements.

Income tax expense

We recognized income tax expense of €45.5 million and €24.1 million during 2019 and 2018, respectively.

The income tax expense during 2019 and 2018 differs from the expected income tax benefit of €24.1 million and €29.2 million, respectively, (based on the Dutch 25.0% income tax rate) primarily due to the net negative impact of (i) an increase in valuation allowances and (ii) certain permanent differences between the financial and tax accounting treatment of interest and other items.

For additional information concerning our income taxes, see note 11 to our combined financial statements.

Loss from continuing operations

During 2019 and 2018, we reported losses from continuing operations of €142.0 million and €140.8 million, respectively, consisting of (i) operating income of €213.2 million and €379.2 million, respectively, (ii) net non-operating expense of €309.7 million and €495.9 million, respectively, and (iii) income tax expense of €45.5 million and €24.1 million, respectively.

Gains or losses associated with (i) changes in the fair values of derivative instruments and (ii) movements in foreign currency exchange rates 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 achieve earnings from operations is largely dependent on our ability to increase our aggregate Segment OCF to a level that more than offsets the aggregate amount of our (a) share-based compensation expense, (b) related-party fees and allocations, net, (c) depreciation and amortization, (d) impairment, restructuring and other operating items, (e) interest expense, (f) other non-operating expenses and (g) income tax expense.

Subject to the limitations included in our various debt instruments, we expect that Liberty Global will cause our company to maintain our debt at current levels relative to our Covenant EBITDA. As a result, 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 combined statements of operations, see the discussion under *Discussion and Analysis of our Reportable Segments* and *Discussion and Analysis of our Combined Operating Results* above.

Earnings from discontinued operations

We reported earnings from discontinued operations, net of taxes, of €79.6 million and €166.5 million during 2019 and 2018, respectively, related to the operations of the Vodafone Disposal Group, UPC DTH and, for 2018, UPC Austria. For additional information, see note 5 to our combined financial statements.

Net earnings attributable to noncontrolling interests

Net earnings attributable to noncontrolling interests includes the noncontrolling interest' share of the results of our continuing and discontinued operations. Net earnings attributable to noncontrolling interests decreased €3.6 million during 2019, as compared to 2018. This decrease is primarily attributable to the UPC Austria Distribution, which occurred during 2018. For additional information, see note 5 to our combined financial statements.

2018 compared to 2017

For information regarding the discussion and analysis of our combined operating results during 2018, as compared to 2017, see *Management's Discussion and Analysis of Financial Condition and Results of Operations* in our 2018 combined financial statements.

Liquidity and Capital Resources

Sources and Uses of Cash

The UPC Holding Group's primary assets are its investments in its combined entities, and the majority of our operating entities are owned by UPC Broadband Holding. Although our combined operating entities generate cash from operating activities, the terms of the instruments governing the indebtedness of UPC Broadband Holding may restrict our ability to access the liquidity of these entities. These entities accounted for substantially all of our €22.1 million of combined cash and cash equivalents at December 31, 2019. In addition, our ability to access the liquidity of these and other combined entities may be limited by tax and legal considerations, the presence of noncontrolling interests and other factors.

Corporate Liquidity of the UPC Holding Group

As the UPC Holding Group typically does not hold significant amounts of cash and cash equivalents at the corporate level, the UPC Holding Group's primary source of corporate liquidity is proceeds received from UPC Broadband Holding (and indirectly from UPC Broadband Holding's combined entities) in the form of loans or distributions. As noted above, various factors may limit the ability of the UPC Holding Group's combined entities to loan or distribute cash. From time to time, the UPC Holding Group may also supplement its sources of corporate liquidity with net proceeds received in connection with the issuance of debt instruments and/or loans or contributions from LGE Financing (and ultimately Liberty Global and other Liberty Global subsidiaries). No assurance can be given that any external funding would be available on favorable terms, or at all.

The UPC Holding Group's corporate liquidity requirements include (i) corporate general and administrative expenses and (ii) interest payments on the UPC Holding Senior Notes. From time to time, UPC Holding may also require cash in connection with (a) the repayment of third-party and related-party debt (including the repurchase or exchange of outstanding debt securities in the open market or privately-negotiated transactions and net repayments to LGE Financing pursuant to the Shareholder Loan, as described in note 13 to our combined financial statements), (b) the funding of loans or distributions to LGE Financing (and ultimately Liberty Global and other Liberty Global subsidiaries), (c) the satisfaction of contingent liabilities, (d) acquisitions, (e) other investment opportunities or (f) income tax payments.

Liquidity of Combined Operating Entities

In addition to cash and cash equivalents, the primary source of liquidity of our combined operating entities is cash provided by operations and, in the case of UPC Broadband Holding, borrowing availability under the UPC Holding Bank Facility. For the details of the borrowing availability under the UPC Holding Bank Facility at December 31, 2019, see note 9 to our combined financial statements. Our combined operating entities' liquidity generally is used to fund property and equipment additions, debt service requirements and payments required by the UPC Holding Group's derivative instruments. From time to time, our combined operating entities may also require liquidity in connection with (i) acquisitions and other investment opportunities, (ii) loans to UPC Holding or other Liberty Global subsidiaries, (iii) capital distributions to UPC Holding or (iv) the satisfaction of contingent liabilities. No assurance can be given that any external funding would be available to our combined operating entities on favorable terms, or at all. For information regarding our commitments and contingencies, see note 16 to our combined financial statements.

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

Capitalization

At December 31, 2019, the outstanding principal amount of our combined third-party debt, together with our finance lease obligations, aggregated €3,806.3 million, including €563.4 million that is classified as current on our combined balance sheet and €3,232.5 million that is not due until 2025 or thereafter. For additional information regarding our current debt maturities, see note 9 to our combined financial statements.

Our ability to service or refinance our debt and to maintain compliance with the leverage covenants in the credit agreements and indentures of the UPC Holding Group is dependent primarily on our ability to maintain or increase the Covenant EBITDA of our operating entities 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 UPC Holding Group's debt instruments. For example, if our Covenant EBITDA were to decline, our ability to obtain additional debt could be limited.

At December 31, 2019, the UPC Holding Group was in compliance with its respective debt covenants. In addition, we do not anticipate any instances of non-compliance with respect to any of our debt covenants that would have a material adverse impact on our liquidity during the next 12 months.

Notwithstanding our negative working capital position at December 31, 2019, we believe 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 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 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, sustained or increased competition, particularly in combination with adverse economic or regulatory developments, could have an unfavorable impact on our cash flows and liquidity.

With the exception of the UPC Holding Senior Notes, all of our combined third-party debt and finance lease obligations had been borrowed or incurred by our combined entities at December 31, 2019.

For additional information regarding our debt and finance lease obligations, see notes 9 and 10, respectively, to our combined financial statements.

Combined Statements of Cash Flows

General. Our cash flows are subject to significant variations due to FX.

Combined Statements of Cash Flows — 2019 compared to 2018

Summary. Our combined statements of cash flows of our continuing operations for 2019 and 2018 are summarized as follows:

	Year ended December 31,		
	2019	**2018 (a)**	**Change**
		in millions	
Net cash provided by operating activities	€ 596.0	€ 442.1	€ 153.9
Net cash provided (used) by investing activities	(342.5)	360.6	(703.1)
Net cash used by financing activities	(238.1)	(882.3)	644.2
Effect of exchange rate changes on cash and cash equivalents and restricted cash	5.7	(4.3)	10.0
Net increase (decrease) in cash and cash equivalents and restricted cash	€ 21.1	€ (83.9)	€ 105.0

(a) As retrospectively revised, see note 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 due to lower cash payments for third-party interest, (ii) a decrease in cash provided due to lower receipts of related-party interest income, (iii) an increase in cash provided by our Segment OCF and related working capital changes and (iv) a decrease in cash provided due to lower cash receipts related to derivative instruments.

Investing Activities. The change in net cash provided (used) by our investing activities is primarily attributable to the net effect of (i) a decrease in cash of €805.0 million associated with higher advances to related parties, (ii) an increase in cash of €200.5 million due to the settlement of a related-party receivable and (iii) a decrease in cash of €54.1 million associated with higher capital expenditures.

The capital expenditures we report in our combined statements of cash flows do not include (i) amounts that are financed under capital-related vendor financing or finance lease arrangements or (ii) purchased assets transferred to our company by another entity under the common control of Liberty Global in exchange for non-cash increases to the Shareholder Loan or non-cash decreases to the LGEF Receivable or non-cash contributions from our parent entities (non-cash related-party capital additions). Instead, these amounts are reflected as non-cash additions to our property and equipment when the underlying assets are delivered, and in the case of capital-related vendor financing and finance lease arrangements and non-cash related-party capital additions that are settled through increases to the Shareholder Loan, as repayments of debt when the principal is repaid. In this discussion, we refer to (a) our capital expenditures as reported in our combined statements of cash flows, which exclude non-cash related-party capital additions and amounts financed under capital-related vendor financing or finance lease arrangements, and (b) our total property and equipment additions, which include our capital expenditures on an accrual basis, non-cash related-party capital additions and amounts financed under capital-related vendor financing or finance lease arrangements. For additional information, see notes 8, 9 and 10 to our combined financial statements. For further details on property and equipment additions, see note 17 to our combined financial statements.

A reconciliation of our combined property and equipment additions to our combined capital expenditures as reported in our combined statements of cash flows is set forth below:

	Year ended December 31,	
	2019	**2018 (a)**
	in millions	
Property and equipment additions	€ 344.1	€ 342.4
Assets acquired under capital-related vendor financing arrangements	(405.4)	(364.3)
Assets acquired under finance leases	(3.3)	(1.9)
Changes in current liabilities related to capital expenditures (including related-party amounts)	356.9	262.0
Total capital expenditures, net	€ 292.3	€ 238.2

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(a) As retrospectively revised, see note 5.

Our segment property and equipment additions increased during 2019, as compared to 2018, primarily due to the net effect of (i) an increase due to FX and (ii) a decrease in local currency expenditures of our combined entities, primarily due to the net effect of (a) an increase in expenditures related to products and enablers, (b) a decrease in expenditures for new build and upgrade projects, (c) a decrease in baseline expenditures, including network improvements and expenditures for property and facilities and information technology systems, and (d) an increase in expenditures for the purchase and installation of customer premises equipment. During 2019 and 2018, our segment property and equipment additions represented 22.2% and 22.3% of our revenue, respectively.

Financing Activities. The decrease in net cash used by our financing activities is primarily attributable to the net effect of (i) a decrease in cash used of €1,216.2 million due to higher net borrowings of related-party debt, (ii) an increase in cash used of €591.4 million due to higher net repayments of third-party debt and finance lease obligations, (iii) an increase in cash used of €200.5 million associated with advances to related parties and (iv) a decrease in cash used of €137.8 million due to higher receipts related to derivative instruments.

Combined Statements of Cash Flows — 2018 compared to 2017

For information regarding the combined statements of cash flows of our continuing operations for 2018, as compared to 2017, see *Management's Discussion and Analysis of Financial Condition and Results of Operations* in our 2018 combined financial statements.

Contractual Commitments

The euro equivalents of our commitments as of December 31, 2019, are presented below:

	Payments due during:						
	2020	2021	2022	2023	2024	Thereafter	Total
				in millions			
Debt (excluding interest)	€ 560.1	€ —	€ —	€ —	€ —	€ 3,225.9	€ 3,786.0
Finance leases (excluding interest)	3.3	2.8	2.7	3.0	1.9	6.6	20.3
Operating leases	23.2	18.5	16.8	15.0	14.0	70.0	157.5
Programming commitments	89.5	58.3	22.7	0.1	—	—	170.6
Purchase commitments (a)	50.8	6.4	—	—	—	—	57.2
Network and connectivity commitments	14.2	9.6	6.8	5.9	1.3	12.6	50.4
Other commitments	2.7	—	—	—	—	—	2.7
Total (b)	€ 743.8	€ 95.6	€ 49.0	€ 24.0	€ 17.2	€ 3,315.1	€ 4,244.7
Projected cash interest payments on debt and finance lease obligations (c)	€ 162.6	€ 159.0	€ 148.0	€ 147.9	€ 147.7	€ 392.3	€ 1,157.5

(a) Includes €9.4 million of related-party purchase obligations due during 2020.

(b) The commitments included in this table do not reflect any liabilities that are included on our December 31, 2019 combined balance sheet other than debt and lease obligations. Our liability for uncertain tax positions in the various jurisdictions in which we operate (€2.5 million at December 31, 2019) has been excluded from this table as the amount and timing of any related payments are not subject to reasonable estimation.

(c) Amounts are based on interest rates, interest payment dates, commitment fees and contractual maturities in effect as of December 31, 2019. 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 obligations, finance and operating lease liabilities and commitments, see notes 9, 10 and 16, respectively, to our combined 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 *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 2019, 2018 and 2017, see note 6 to our combined financial statements. For information regarding our defined benefit plans, see note 14 to our combined financial statements.

Projected Cash Flows Associated with Derivative Instruments

The following table provides information regarding the projected cash flows associated with our derivative instruments at December 31, 2019. The euro equivalents presented below are based on interest rate projections and exchange rates as of December 31, 2019. These amounts are presented for illustrative purposes only and will likely differ from the actual cash payments or receipts required in future periods. For additional information regarding our derivative instruments, including our counterparty credit risk, see note 6 to our combined financial statements.

	Payments (receipts) due during:						
	2020	2021	2022	2023	2024	Thereafter	Total
				in millions			
Projected derivative cash payments (receipts), net:							
Interest-related (a)	€ 4.5	€ (2.6)	€ (12.0)	€ (23.0)	€ (19.9)	€ (22.6)	€ (75.6)
Principal-related (b)	41.0	(10.0)	(2.3)	43.0	—	(35.8)	35.9
Other	—	(2.5)	—	—	—	—	(2.5)
Total	€ 45.5	€ (15.1)	€ (14.3)	€ 20.0	€ (19.9)	€ (58.4)	€ (42.2)

(a) Includes (i) the cash flows of our interest rate swaptions 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.

Critical Accounting Policies, Judgments and Estimates

In connection with the preparation of our combined 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 our combined 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.

For additional information concerning our significant accounting policies, see note 3 to our combined 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 77% of our total assets at December 31, 2019.

When circumstances warrant, we review the carrying amounts of our property and equipment and our intangible assets (other than goodwill) 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 long-lived 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, long-lived 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 for impairment at least annually on October 1 and whenever facts and circumstances indicate that the carrying amount of goodwill may not be recoverable. For impairment evaluations, we first make a qualitative assessment to determine if the goodwill may be impaired. If it is more-likely-than-not that 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"). If the carrying value of a reporting unit were to exceed its fair value, we would then compare the implied fair value of the reporting unit's goodwill to its carrying amount, and any excess of the carrying amount over the fair value would be charged to operations as an impairment loss.

When required, considerable management judgment is necessary to estimate the fair value of reporting units and underlying long-lived assets. 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 Segment OCF 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 2019 qualitative assessment of our reporting unit carrying values, we determined that it was more-likely-than-not that fair value exceeded carrying value for all of our reporting units.

During the three years ended December 31, 2019, we did not record any significant impairment charges with respect to our property and equipment and intangible assets. For additional information regarding our long-lived assets, see note 8 to our combined financial statements.

If, among other factors, (i) our enterprise value or Liberty Global's equity values were to decline 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 long-lived 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. 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

GAAP 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. We use cash flow valuation models to determine the fair values of our interest rate and foreign currency derivative instruments. For a detailed discussion of the inputs we use to determine the fair value of our derivative instruments, see note 7 to our combined financial statements. See also note 6 to our combined financial statements for information concerning our derivative instruments.

Changes in the fair values of our derivative instruments have had, and we believe will continue to have, a significant and volatile impact on our results of operations. During 2019, 2018 and 2017, we recognized net gains (losses) of €28.5 million, €155.0 million and (€165.2 million), respectively, attributable to changes in the fair values of our derivative instruments.

As further described in note 7 to our combined financial statements, actual amounts received or paid upon the settlement or disposition of our derivative instruments may differ materially from the recorded fair values at December 31, 2019.

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 long-lived 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 long-lived assets were initially recorded through the application of acquisition accounting and all of our long-lived assets are subject to impairment assessments. For additional information, see notes 5, 7 and 8 to our combined financial statements.

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 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 reduced by a valuation allowance if we believe it more-likely-than-not such net deferred tax assets will not be realized. Establishing or reducing a tax valuation allowance 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, 2019, the aggregate valuation allowance provided against deferred tax assets was €1,315.6 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, 2019 combined 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 our combined 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 more-likely-than-not, based on technical merits, that the position will be sustained upon examination. The determination of whether the tax position meets the more-likely-than-not threshold requires a facts-based judgment using all information available. In a number of cases, we have concluded that the more-likely-than-not threshold is not met, and accordingly, the amount of tax benefit recognized in our combined financial statements is different than the amount taken or expected to be taken in our tax returns. As of December 31, 2019, the amount of unrecognized tax benefits for financial reporting purposes, but taken or expected to be taken in our tax returns, was €2.5 million all of which would have a favorable impact on our effective income tax rate if ultimately recognized, after considering amounts that we would expect to be offset by valuation allowances.

We are required to continually assess our tax positions, and the results of tax examinations or changes in judgment can result in substantial changes to our unrecognized tax benefits.

For additional information concerning our income taxes, see note 11 to our combined financial statements.

Management and Principal Shareholder

The managing director of the UPC Holding Group is Liberty Global Europe Management B.V., which is also an indirect subsidiary of Liberty Global. The managing director is authorized to conduct the day to day business of the relevant entities within the governance of Liberty Global and its subsidiaries.