2016
Liberty Global Group Investor Call

February 16, 2017 *(Amended on March 28, 2017)*

“Safe Harbor”

Forward-Looking Statements

This presentation contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including statements with respect to our strategies, future growth prospects and opportunities; expected RGU additions; expected growth with respect to revenue, OCF and adjusted FCF; expectations with respect to the development, enhancement and expansion of our superior networks and innovative and advanced products and services, including the roll-out of our 4G mobile product and cloud-based products; plans and expectations relating to new build and network extension opportunities; the timing of proposed acquisitions and the anticipated benefits, costs and synergies in connection with acquisitions, including the proposed acquisition of Multimedia Polska; expectations with respect to our joint venture in the Netherlands; expectations regarding our share buyback program; the strength of our balance sheet and tenor of our third-party debt; and other information and statements that are not historical fact. These forward-looking statements involve certain risks and uncertainties that could cause actual results to differ materially from those expressed or implied by these statements. These risks and uncertainties include the continued use by subscribers and potential subscribers of our services and their willingness to upgrade to our more advanced offerings; our ability to meet challenges from competition, to manage rapid technological change or to maintain or increase rates to our subscribers or to pass through increased costs to our subscribers; the effects of changes in laws or regulation; general economic factors; our ability to obtain regulatory approval and satisfy regulatory conditions associated with acquisitions and dispositions; our ability to successfully acquire and integrate new businesses and realize anticipated efficiencies from businesses we acquire; the availability of attractive programming for our video services and the costs associated with such programming; our ability to achieve forecasted financial and operating targets; the outcome of any pending or threatened litigation; the ability of our operating companies to access cash of their respective subsidiaries; the impact of our operating companies' future financial performance, or market conditions generally, on the availability, terms and deployment of capital; fluctuations in currency exchange and interest rates; 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; our ability to adequately forecast and plan future network requirements including the costs and benefits associated with network expansions; and other factors detailed from time to time in our filings with the Securities and Exchange Commission, including our most recently filed Form 10-K. These forward-looking statements speak only as of the date of this presentation. 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 change in events, conditions or circumstances on which any such statement is based.

Additional Information Relating to Defined Terms:

Please refer to the Appendix at the end of this presentation, as well as our press release dated February 15, 2017 and our SEC filings, for the definitions of the following terms which may be used herein including: Rebased Growth, Operating Cash Flow (“OCF”), Free Cash Flow (“FCF”), Revenue Generating Units (“RGUs”), Average Revenue per Unit (“ARPU”), as well as GAAP reconciliations, where applicable.


EXECUTIVE SUMMARY
FINANCIAL RESULTS
APPENDIX

Amended

Key European Highlights[1]

Achieved FY financial guidance; RGU growth, innovation & efficiencies power results

Growth Accelerating	New Build Increasing	Enhancing Connect & Play Bundles	Solid FCF & Balance Sheet	Buyback and M&A
Q4 rebased OCF growth of 7.5%; FY16 at 4.3%, in-line with our guidance (all excl. Ziggo)	1.3 million new build premises in 2016, incl. 314,000 at Virgin Media	Horizon now live across Europe; *V6* STB launched in UK during Q4	Delivered $2.0bn of FCF in 2016, exceeding FY target and including $1.0bn in Q4	Upsizing buyback program by $1bn to $3bn before YE2017
2016 RGU adds of 946,000, up 24% YoY, including solid 324k in Q4	Lightning ARPU & penetration broadly on track; build to ramp in 2017	Expanded Replay TV, Netflix & Connect Boxes; launched 4G in the UK	$6+ bn of liquidity with ~90% of debt coming due in 2021 & after	Vodafone JV in the Netherlands closed Dec. 31st; Mgmt in place, best from both teams

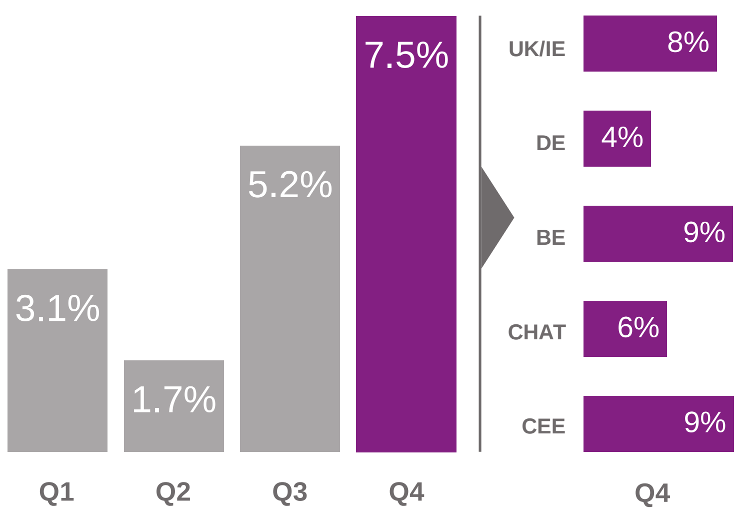
(1) Please see Appendix for definitions and additional information.

Rebased OCF Growth & Net Adds Accelerating[1]

Began reaping Liberty Go benefits in H2 following early 2016 investments

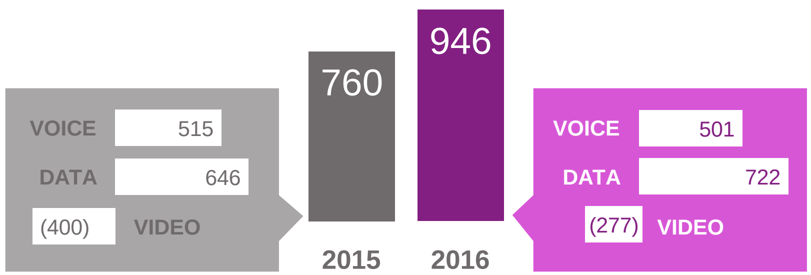
2016 Rebased OCF Growth

(Excludes Netherlands)



Organic Net Adds Up 24% YoY

(in '000, includes Netherlands)



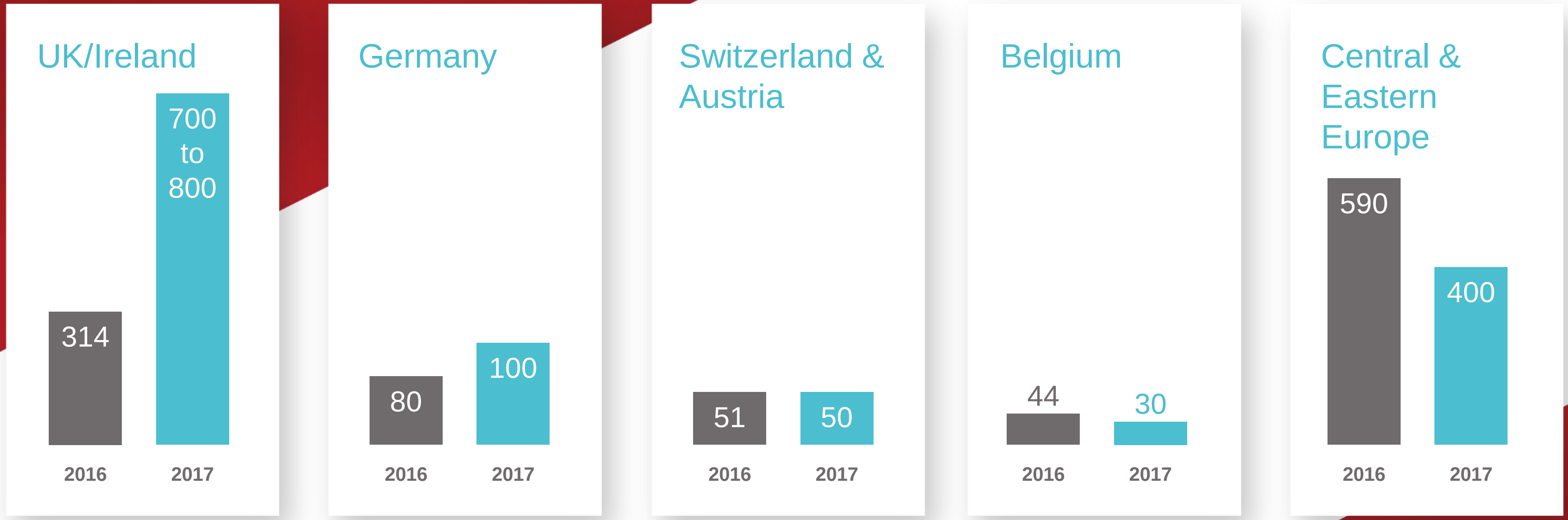
- Broadband additions up 12% versus 2015
- Video performance improved 31% year-over-year
- Growth in Net Additions supported by our pan-European new build program
- Ziggo's investment in improved products & service has paid off

(1) Please see Appendix for definitions and additional information.

Amended

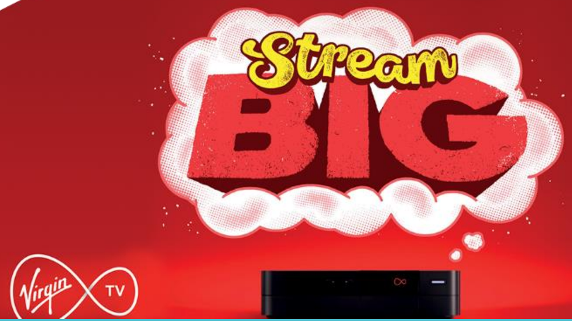
European New Build Program Delivering[1]

Delivered 1.3 million homes in 2016; forecasting 1.3 to 1.4 million new homes in 2017



- Delivered 1.3 million homes in 2016[2]: spent ~$800 million on construction, CPE and install costs. All-in build cost per home at ~$505 (excl. CPE and install)
- Increasing new build in 2017 year-over-year on a like-for-like basis[1]
- Projected to spend ~$1.0 billion[3] in 2017 on construction, CPE and install costs. All-in build cost per home at ~$660 (excl. CPE and install)

(1) The numbers in the graphs are the number of homes in thousands.
(2) 1.3m new homes built in 2016 included 58k new build in the Netherlands and approx. 139k German upgrades, both of which are excluded from 2017 target.
(3) 2017 New Build spend is based on FX rates as of February 12, 2017.



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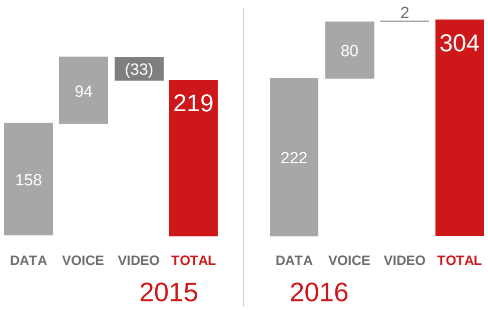
UK | Investing to Accelerate RGU Growth in 2017[1,2]

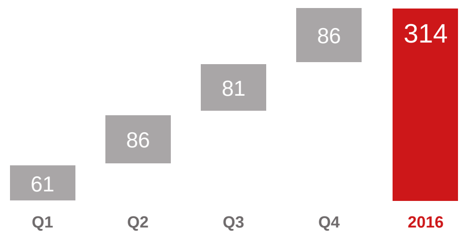
2016 net adds up 39% YoY boosted by Lightning & RGU growth on existing footprint

U.K. Net Adds Ramping



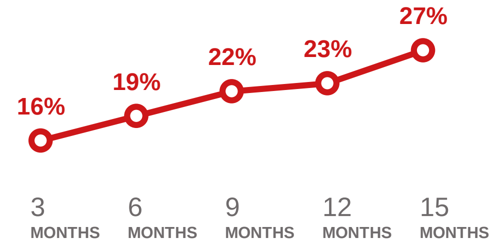
- Broadband & video results driven by marketing focus, superior speeds & new build
- *V6* box rollout began in December; enhanced UI on TiVo boxes
- Q4 U.K. net adds of 36,000 impacted by November 2016 price increase of ~5%

Project Lightning Accelerating



- Build costs were in-line with budgeted expectations; ARPUs slightly ahead
- Targeting larger turnkey projects going forward; 50% of Lightning will utilize FTTP
- We identified 28,000 premises that required no construction work in 2016

Project Lightning U.K. Customer Penetration



- Active customer penetration[3] continues to broadly track according to internal plan
- Continue to expect ~40% customer penetration, three years after premises released for marketing
- Actively connecting B2B / SME locations, leveraging Project Lightning build

(1) Please see Appendix for definitions and additional information.
(2) Net Adds and New Build numbers in graphs are in thousands.
(3) Active Customer Penetration is calculated as the number of active customers at the end of the timeframe presented divided by the total number of added homes that were connected to our network for the entire respective timeframe

Expanding FMC Across Our Footprint[1]

Market-by-market convergence strategy in Europe is working

Virgin Media
(U.K.)

- Announced five-year full-MVNO extension with BT Group in January 2017
- Migration to full-MVNO underway; greater control to deliver innovative services
- Successful 4G launch in U.K. in Nov. ‘16 with 5% of mobile sub base taking 4G at YE 2016

2016 Mobile Revenue	$869m
Mobile Subscribers	3.0m
FMC penetration	20%

Telenet

- Ubiquitous connectivity via superior fixed network, 4G mobile platform & WiFi spots
- Launched first all-in-one truly converged offering “WIGO” in the summer of 2016
- FMC packages resonating; >150,000 WIGO subscribers at year-end 2016

2016 Mobile Revenue	$813m
Mobile Subscribers	3.0m
FMC penetration	38%

VodafoneZiggo

- Creation of most innovative national provider of converged B2C and B2B services
- Begin cross-selling of Vodafone mobile and Ziggo fixed products in spring 2017
- Introduce entertainment features with enriched connectivity

2016 Mobile Revenue	~$1.7bn[2]
Mobile Subscribers	5.1m[3]
FMC penetration	~20%

Other Markets

- Switzerland | full-MVNO; solid mobile momentum, offering compelling 4G packages (“MegaDeal”)
- Austria | full-MVNO; launched new mobile proposition in Q4 with up to 100GB
- CEE | Full-MVNO in place in Hungary, more markets to be added
- Germany still nascent 4p market, working on mobile proposition and launched wifispots

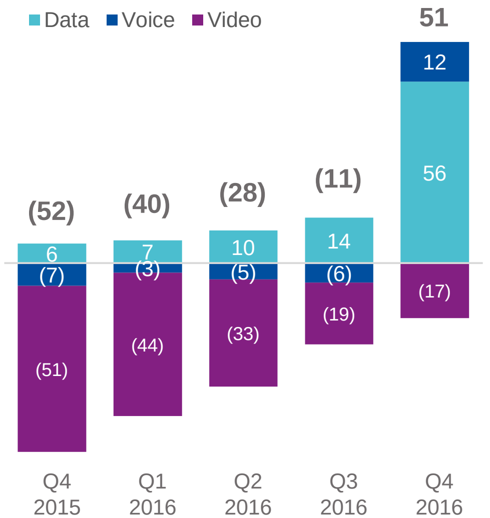
2016 Mobile Revenue	$96m
Mobile Subscribers	0.5 m
FMC penetration	DE 6% | CH 8% | AT 3% | CEE 2%

(1) Please see Appendix for definitions and additional information. Mobile revenue on this slide includes interconnect revenue and handset sales.
(2) Represents the combined revenue of Vodafone and Ziggo. Vodafone Netherlands revenue (translated to USD at year-end FX) as reported under Vodafone’s IFRS accounting policies and Ziggo under US GAAP.
(3) Represents postpaid mobile subscriber bases of Ziggo and Vodafone Netherlands (see Appendix for further information). Vodafone Netherlands as reported by Vodafone for 2016.

Ziggo | Building Blocks for Growth in Place[1]

Subscriber turnaround spurred by investments in customer experience; JV underway

Net Adds Turnaround



- Step-up in Q4 driven by higher sales and lower churn YoY
- Product investments, focus on upsell and ATL marketing drove Q4 result

Superior Proposition

- Ziggo Sport most watched sports channel in NL; celebrated first anniversary
- Horizon TV subs and active Horizon Go app users neared the one million mark at YE'16
- Enhancing video experience by adding Netflix to Horizon TV & exclusive "Home of HBO"

Joint Venture Insights

- JV closed at YE'16; confirmed NPV of synergies at €3.5bn & key management in place
- Quad-play centered around superior connectivity & leading entertainment
- Great cooperation and collaboration between LBTY & VOD across all divisions

(1) Please see Appendix for definitions and additional information.

2017 Operating Game Plan[1]

Investing to accelerate our revenue and rebased OCF growth

- Delivering great entertainment through superior connectivity
- Executing on our FMC strategy
- Continued ramping of New Build
- Leveraging our B2B platform: SME & SoHo
- Focusing on scale & efficiencies

2017 Guidance

- 6-7% rebased OCF growth in 2017
- Stepping up to 7-8% annual rebased OCF growth over the medium-term, with upside in 2018
- P&E additions as a % of sales expected to range between 29-31%, including ~$1.0 billion of total new build related P&E spend[2]
- $1.5bn of Adjusted FCF[1] on 2017
- Increasing buyback program by $1bn to $3bn by YE 2017

(1) Please see Appendix for definitions and additional information.
(2) Home construction cost plus success-based installation and CPE cost.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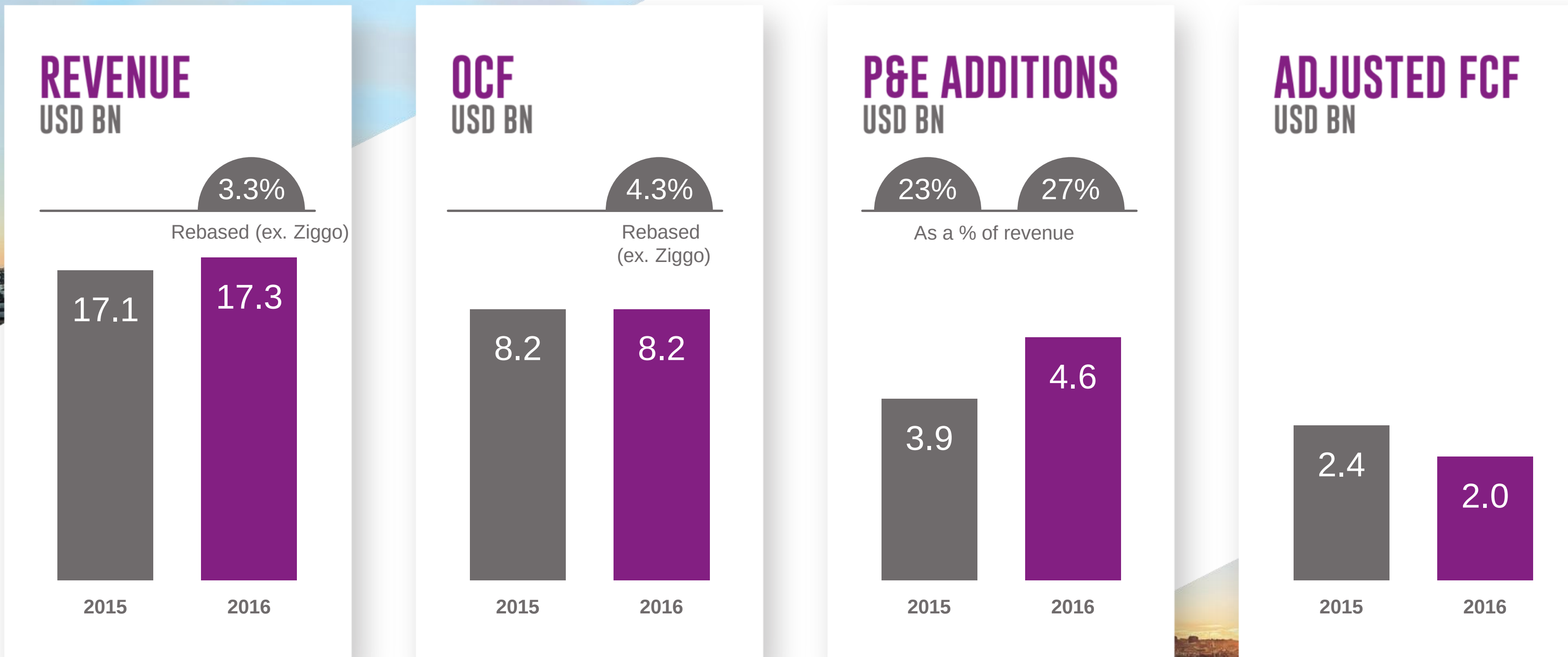
Full-Year 2016 Financial Results[1,2]

2016 rebased OCF performance of 4.3% (excluding NL) powered by solid H2 2016

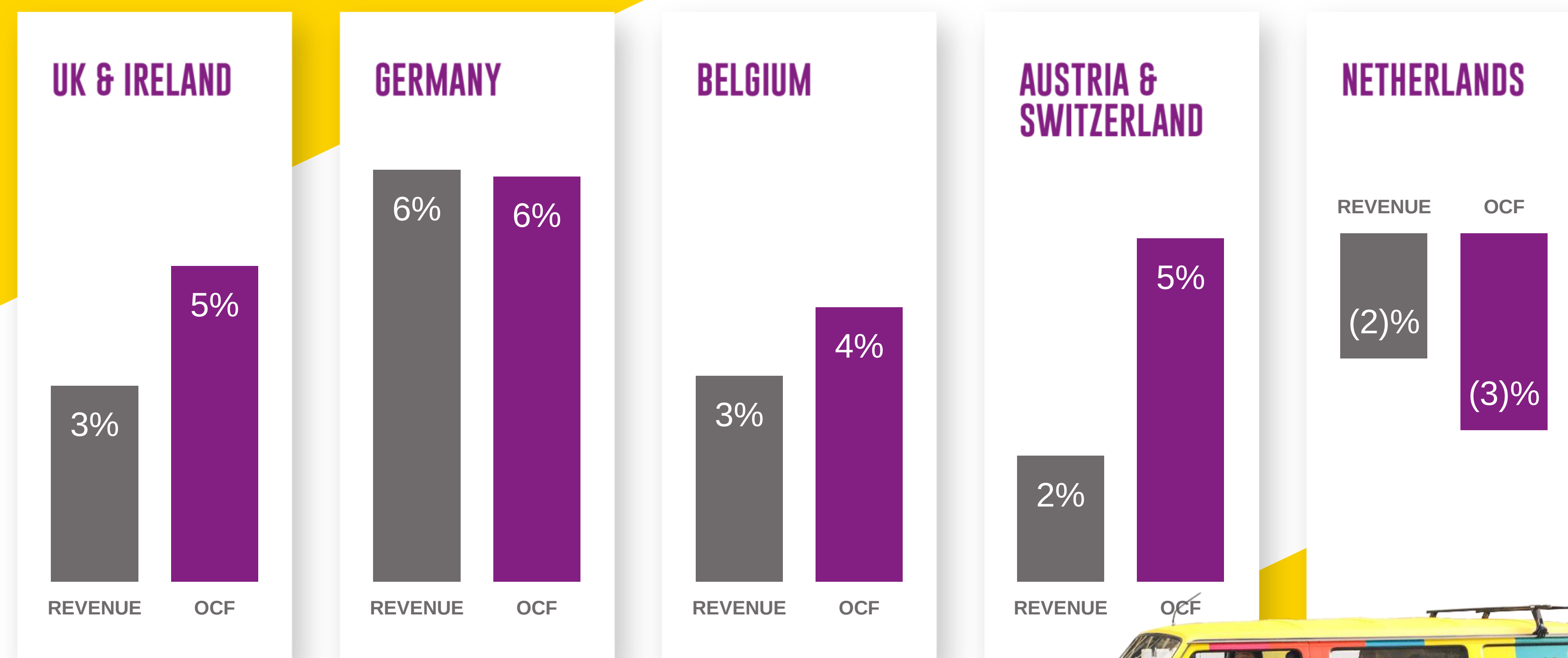


(1) Amounts are in billions, except for % amounts. Growth rate figures are rebased, except for Property and Equipment additions, which are as a percentage of revenue.

(2) Please see Appendix for definitions and additional information.

Full-Year 2016 Rebased Results by Segment[1,2]

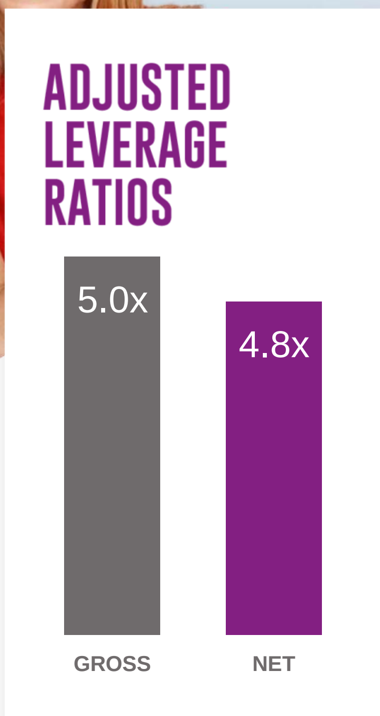
Key drivers of our Liberty Go program are kicking in across our platform

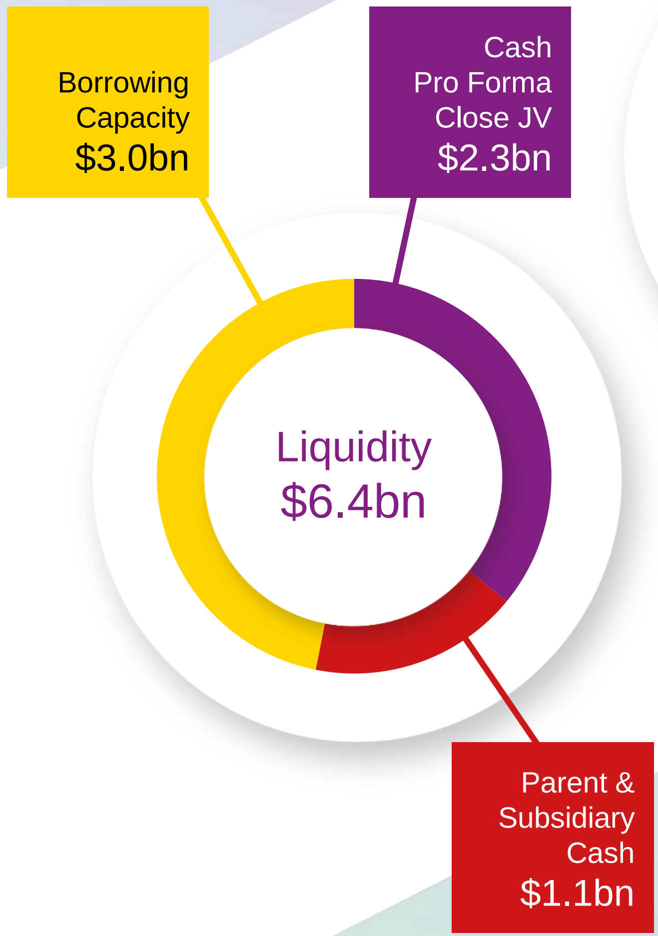


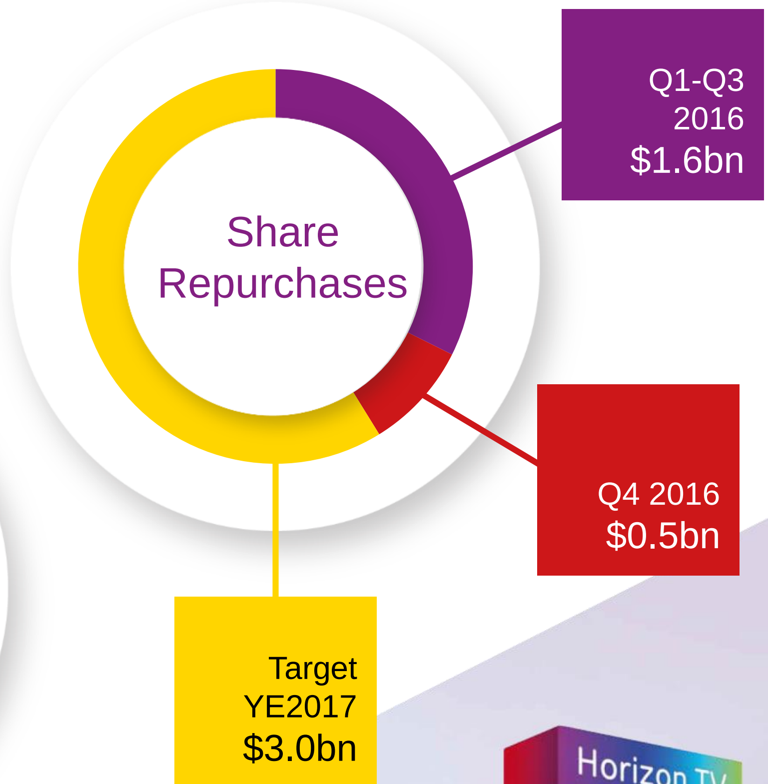
(1) Please see Appendix for definitions and additional information.
(2) Growth rate figures are rebased.

Leverage & Buybacks(1)

$2.3 billion of cash proceeds from JV deal significantly improves financial fire power







(1) Please see Appendix for definitions and additional information.

Conclusions

New build & product differentiation fuel RGU performance

Continued focus on enhancing the customer experience

Liberty Go program beginning to bear fruit

Step-up in Q4 results setting the stage for 2017 plan

On-track to deliver 6-7% rebased OCF growth in 2017
and 7-8% annually over the medium-term, with upside in 2018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Definitions and Additional Information

GAAP are accounting principles generally accepted in the United States.

Revenue Generating Unit "RGU" is separately a Basic Video Subscriber, Enhanced Video Subscriber, DTH Subscriber, Internet Subscriber or Telephony Subscriber (each as defined and described below). A home, residential multiple dwelling unit, or commercial unit may contain one or more RGUs. For example, if a residential customer in our Austrian market subscribed to our enhanced video service, fixed-line telephony service and broadband internet service, the customer would constitute three RGUs. Total RGUs is the sum of Basic Video, Enhanced Video, DTH, Internet and Telephony Subscribers. RGUs generally are counted on a unique premises basis such that a given premises does not count as more than one RGU for any given service. On the other hand, if an individual receives one of our services in two premises (e.g., a primary home and a vacation home), that individual will count as two RGUs for that service. Each bundled cable, internet or telephony service is counted as a separate RGU regardless of the nature of any bundling discount or promotion. Non-paying subscribers are counted as subscribers during their free promotional service period. Some of these subscribers may choose to disconnect after their free service period. Services offered without charge on a long-term basis (e.g., VIP subscribers, free service to employees) generally are not counted as RGUs. We do not include subscriptions to mobile services in our externally reported RGU counts. In this regard, our December 31, 2016 RGU counts exclude our separately reported postpaid and prepaid mobile subscribers.

Organic RGU additions exclude RGUs of acquired entities at the date of acquisition, but include the impact of changes in RGUs from the date of acquisition. All subscriber/RGU additions or losses refer to net organic changes, unless otherwise noted.

Subscription Revenue includes amounts received from subscribers for ongoing services, excluding installation fees and late fees.

Liberty 3.0 (“Liberty GO”) During 2015, we initiated our “Liberty Go” program, which is a comprehensive plan to drive top-line growth while maintaining tight cost controls. The Liberty Go program seeks to capitalize on revenue opportunities associated with the Network Extensions, mobile and B2B, together with the realization of greater efficiencies by leveraging our scale more effectively. Underpinning this program is a commitment to customer centricity, which we believe is key to succeeding in an ever more demanding consumer market. We expect this program to continue through 2018 and that the successful implementation of Liberty Go will lead to consolidated organic growth rates for revenue and Adjusted OIBDA that are meaningfully higher than our recent consolidated organic growth rates.

2017 FCF Guidance Our Liberty Global Group adjusted FCF guidance is based on FX rates as of February 12, 2017. Reconciliations of our FCF guidance for 2017 to a GAAP measure are not provided as not all elements of the reconciliation are projected as part of our forecasting process, as certain items may vary significantly from one period to another. For example, direct acquisition costs and excess benefits from share-based compensation are contingent upon the underlying activity, which cannot be reasonably forecasted.

Medium-Term Rebased OCF Growth Our medium-term OCF guidance of 7% to 8% is intended to guide for the annual rebased growth range for the years 2018 and beyond, with upside in 2018, after adjusting for acquisitions, dispositions, FX and other factors that may affect the comparability.

Definitions and Additional Information

Total B2B includes subscription (SOHO) and non-subscription revenue. Non-subscription revenue includes the amortization of deferred upfront installation fees and deferred nonrecurring fees received on B2B contracts where we maintain ownership of the installed equipment. Most of this deferred revenue relates to Virgin Media's B2B contracts, and in connection with the application of the Virgin Media acquisition accounting, we eliminated all of Virgin Media's B2B deferred revenue as of the June 7, 2013 acquisition date. Due primarily to this acquisition accounting, the amortization of Virgin Media's B2B deferred revenue is accounting for $1.5 million and $13.1 million of the increase in Liberty Global Group's total B2B revenue for the three months and year ended December 31, 2016, respectively.

Basic Video Subscriber Basic Video Subscriber is a home, residential multiple dwelling unit or commercial unit that receives our video service over our broadband network either via an analog video signal or via a digital video signal without subscribing to any recurring monthly service that requires the use of encryption-enabling technology. Encryption-enabling technology includes smart cards, or other integrated or virtual technologies that we use to provide our enhanced service offerings. With the exception of RGUs that we count on an EBU basis, we count RGUs on a unique premises basis. In other words, a subscriber with multiple outlets in one premises is counted as one RGU and a subscriber with two homes and a subscription to our video service at each home is counted as two RGUs. In Europe, we have approximately 164,900 “lifeline” customers that are counted on a per connection basis, representing the least expensive regulated tier of video cable service, with only a few channels.

Enhanced Video Subscriber is a home, residential multiple dwelling unit or commercial unit that receives our video service over our broadband network or through a partner network via a digital video signal while subscribing to any recurring monthly service that requires the use of encryption-enabling technology. Enhanced Video Subscribers that are not counted on an EBU basis are counted on a unique premises basis. For example, a subscriber with one or more set-top boxes that receives our video service in one premises is generally counted as just one subscriber. An Enhanced Video Subscriber is not counted as a Basic Video Subscriber. As we migrate customers from basic to enhanced video services, we report a decrease in our Basic Video Subscribers equal to the increase in our Enhanced Video Subscribers. Subscribers to enhanced video services provided by our operations in Switzerland over partner networks receive basic video services from the partner networks as opposed to our operations.

DTH Subscriber is a home, residential multiple dwelling unit or commercial unit that receives our video programming broadcast directly via a geosynchronous satellite.

Internet Subscriber is a home, residential multiple dwelling unit or commercial unit that receives internet services over our networks, or that we service through a partner network. Our Internet Subscribers exclude 45,700 and 45,600 digital subscriber line (“DSL”) subscribers within Belgium and Austria, respectively, who are not serviced over our networks. Our Internet Subscribers do not include customers that receive services from dial-up connections. In Switzerland, we offer a 2 Mbps internet service to our Basic and Enhanced Video Subscribers without an incremental recurring fee. Our Internet Subscribers in Switzerland include 97,400 subscribers who have requested and received this service.

Telephony Subscriber is a home, residential multiple dwelling unit or commercial unit that receives voice services over our networks, or that we service through a partner network. Telephony Subscribers exclude mobile telephony subscribers. Our Telephony Subscribers exclude 34,900 subscribers within Austria that are not serviced over our networks. In Switzerland, we offer a basic phone service to our Basic and Enhanced Video Subscribers without an incremental recurring fee. Our Telephony Subscribers in Switzerland include 88,900 subscribers who have requested and received this service.

Mobile Subscriber represents the number of active subscriber identification module (“SIM”) cards in service rather than services provided. For example, if a mobile subscriber has both a data and voice plan on a smartphone this would equate to one mobile subscriber. Alternatively, a subscriber who has a voice and data plan for a mobile handset and a data plan for a laptop (via a dongle) would be counted as two mobile subscribers. Customers who do not pay a recurring monthly fee are excluded from our mobile telephony subscriber counts after periods of inactivity ranging from 30 to 90 days, based on industry standards within the respective country.

Fixed-Mobile Convergence (“FMC”) penetration represents the number of customers who subscribe to both our internet service and our postpaid mobile telephony service, divided by the number of customers who subscribe to our internet service.

Definitions and Additional Information

Homes Passed are homes, residential multiple dwelling units or commercial units that can be connected to our networks without materially extending the distribution plant, except for DTH homes. Our Homes Passed counts are based on census data that can change based on either revisions to the data or from new census results. We do not count homes passed for DTH. Due to the fact that we do not own the partner networks (defined below) used in Switzerland (see note 10) we do not report homes passed for Switzerland's partner networks.

Information on Rebased Growth For purposes of calculating rebased growth rates on a comparable basis for all businesses that we owned during 2016, we have adjusted our historical revenue and OCF for the three months and year ended December 31, 2015 to (i) include the pre-acquisition revenue and OCF of certain entities acquired during 2015 and 2016 in our rebased amounts for the three months and year ended December 31, 2015 to the same extent that the revenue and OCF of such entities are included in our results for the three months and year ended December 31, 2016, (ii) exclude the pre-disposition revenue and OCF of "offnet" subscribers in the U.K. that were disposed in the fourth quarter of 2014 and the first half of 2015 from our rebased amounts for the year ended December 31, 2015 to the same extent that the revenue and OCF of these disposed subscribers is excluded from our results for the year ended December 31, 2016, (iii) exclude the revenue and OCF related to a partner network agreement that was terminated shortly after the Ziggo acquisition from our rebased amounts for the year ended December 31, 2015 to the same extent that the revenue and OCF from this partner network is excluded from our results for the year ended December 31, 2016, (iv) exclude the pre-disposition revenue, OCF and associated intercompany eliminations of Film1, which was disposed in the third quarter of 2015, from our rebased amounts for the year ended December 31, 2015 to the same extent that the revenue, OCF and associated intercompany eliminations are excluded from our results for the year ended December 31, 2016, (v) exclude the revenue and OCF of multi-channel multi-point (microwave) distribution system subscribers in Ireland that have disconnected since we announced the switch-off of this service effective April 2016 for the three months and year ended December 31, 2015 to the same extent that the revenue and OCF of these subscribers is excluded from our results for the three months and year ended December 31, 2016 and (vi) reflect the translation of our rebased amounts for the three months and year ended December 31, 2015 at the applicable average foreign currency exchange rates that were used to translate our results for the three months and year ended December 31, 2016. We have included BASE and five small entities in whole or in part in the determination of our rebased revenue and OCF for the three months and year ended December 31, 2015. We have reflected the revenue and OCF of the acquired entities in our 2015 rebased amounts based on what we believe to be the most reliable information that is currently available to us (generally pre-acquisition financial statements), as adjusted for the estimated effects of (a) any significant differences between Generally Accepted Accounting Principles in the United States ("U.S. GAAP") and local generally accepted accounting principles, (b) any significant effects of acquisition accounting adjustments, (c) any significant differences between our accounting policies and those of the acquired entities and (d) other items we deem appropriate. We do not adjust pre-acquisition periods to eliminate nonrecurring items or to give retroactive effect to any changes in estimates that might be implemented during post-acquisition periods. As we did not own or operate the acquired businesses during the pre-acquisition periods, no assurance can be given that we have identified all adjustments necessary to present the revenue and OCF of these entities on a basis that is comparable to the corresponding post-acquisition amounts that are included in our historical results or that the pre-acquisition financial statements we have relied upon do not contain undetected errors. The adjustments reflected in our rebased amounts have not been prepared with a view towards complying with Article 11 of Regulation S-X. In addition, the rebased growth percentages are not necessarily indicative of the revenue and OCF that would have occurred if these transactions had occurred on the dates assumed for purposes of calculating our rebased amounts or the revenue and OCF that will occur in the future. The rebased growth percentages have been presented as a basis for assessing growth rates on a comparable basis, and are not presented as a measure of our pro forma financial performance.

Please see next slide for additional information on Rebased Growth

Definitions and Additional Information

Information on Rebased Growth The following table provides adjustments made to the 2015 amounts to derive our rebased growth rates for the Liberty Global Group:

	Revenue		OCF	
	Three months ended December 31, 2015	Year ended December 31, 2015	Three months ended December 31, 2015	Year ended December 31, 2015
Liberty Global Group	in millions			
Acquisitions	$ 192.9	$ 667.4	$ 36.1	$ 136.2
Dispositions	(3.1)	(22.6)	(2.0)	(6.4)
Foreign Currency	(352.7)	(839.3)	(160.6)	(380.4)
Total decrease	$ (162.9)	$ (194.5)	$ (126.5)	$ (250.6)

Operating Cash Flow Definition and Reconciliation

As used herein, OCF has the same meaning as the term "Adjusted OIBDA" that is referenced in our 10-K. OCF is the primary measure used by our chief operating decision maker to evaluate segment operating performance. OCF 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, OCF is defined as operating income before depreciation and amortization, share-based compensation, provisions and provision releases related to significant litigation and impairment, restructuring and other operating items. Other operating items include (a) gains and losses on the disposition of 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 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. We believe our OCF measure is useful to investors because it is one of the bases for comparing our performance with the performance of other companies in the same or similar industries, although our measure may not be directly comparable to similar measures used by other public companies. OCF should be viewed as a measure of operating performance that is a supplement to, and not a substitute for, operating income, net earnings or loss, cash flow from operating activities and other U.S. GAAP measures of income or cash flows. A reconciliation of operating income to total segment OCF is presented below.

	Three months ended December 31,		Year ended December 31,	
	2016	2015	2016	2015
	in millions		in millions	
Consolidated Liberty Global				
Operating income	$ 824.2	$ 621.3	$ 2,801.3	$ 2,349.2
Share-based compensation expense	90.5	65.2	296.9	318.2
Depreciation and amortization	1,395.7	1,438.2	5,801.1	5,825.8
Impairment, restructuring and other operating items, net	101.6	68.4	348.5	174.1
Total segment OCF	$ 2,412.0	$ 2,193.1	$ 9,247.8	$ 8,667.3
Liberty Global Group				
Operating income	$ 683.0	$ 558.0	$ 2,482.2	$ 2,101.1
Share-based compensation expense	85.8	65.0	281.5	315.8
Inter-group fees and allocations	(2.1)	(2.2)	(8.5)	(4.3)
Depreciation and amortization	1,187.5	1,382.6	5,213.8	5,609.4
Impairment, restructuring and other operating items, net	81.3	62.3	194.7	154.3
Total segment OCF	$ 2,035.5	$ 2,065.7	$ 8,163.7	$ 8,176.3

Adjusted Free Cash Flow Definition and Reconciliations(*)

We define adjusted free cash flow as net cash provided by our operating activities, plus (i) excess tax benefits related to the exercise of share-based incentive awards, (ii) cash payments for third-party costs directly associated with successful and unsuccessful acquisitions and dispositions and (iii) expenses financed by an intermediary, less (a) capital expenditures, as reported in our consolidated statements of cash flows, (b) principal payments on amounts financed by vendors and intermediaries and (c) principal payments on capital leases (exclusive of the portions of the network lease in Belgium and the duct leases in Germany that we assumed in connection with certain acquisitions), with each item excluding any cash provided or used by our discontinued operations. We believe that our presentation of adjusted free cash flow provides useful information to our investors because this measure can be used to gauge our ability to service debt and fund new investment opportunities. Adjusted free cash flow should not be understood to represent our ability to fund discretionary amounts, as we have various mandatory and contractual obligations, including debt repayments, which are not deducted to arrive at this amount. Investors should view adjusted free cash flow as a supplement to, and not a substitute for, U.S. GAAP measures of liquidity included in our consolidated statements of cash flows. Beginning with the third quarter of 2016, we changed the name of this metric from "free cash flow" to "adjusted free cash flow." We have not changed how we calculate this metric. The following table provides the reconciliation of our net cash provided by operating activities to adjusted FCF for the indicated periods:

	Three months ended December 31,		Year ended December 31,	
	2016	2015	2016	2015
	in millions			
Consolidated Liberty Global				
Net cash provided by operating activities	$ 1,894.0	$ 1,546.5	$ 5,935.5	$ 5,705.8
Excess tax benefits from share-based compensation[1]	0.4	(0.3)	4.4	26.7
Cash payments for direct acquisition and disposition costs	25.8	14.7	115.3	264.2
Expenses financed by an intermediary[2]	208.0	161.4	815.0	294.2
Capital expenditures	(699.3)	(648.0)	(2,644.3)	(2,499.5)
Principal payments on amounts financed by vendors and intermediaries	(278.5)	(215.7)	(2,074.7)	(1,125.4)
Principal payments on certain capital leases	(25.0)	(32.0)	(110.7)	(146.8)
Adjusted FCF	$ 1,125.4	$ 826.6	$ 2,040.5	$ 2,519.2
Liberty Global Group				
Net cash provided by operating activities	$ 1,653.3	$ 1,441.6	$ 5,467.3	$ 5,399.3
Excess tax benefits from share-based compensation	0.4	(0.3)	4.4	23.0
Cash payments for direct acquisition and disposition costs	2.5	14.4	29.3	259.3
Expenses financed by an intermediary	206.1	161.4	812.0	294.2
Capital expenditures	(551.4)	(590.6)	(2,153.9)	(2,272.3)
Principal payments on amounts financed by vendors and intermediaries	(278.5)	(215.7)	(2,074.7)	(1,125.4)
Principal payments on certain capital leases	(23.3)	(31.8)	(105.5)	(146.0)
Adjusted FCF	$ 1,009.1	$ 779.0	$ 1,978.9	$ 2,432.1

(*) Please see next slide for accompanying footnotes.

Definitions and Additional Information

Adjusted Free Cash Flow

1. Excess tax benefits from share-based compensation represent the excess of tax deductions over the related financial reporting share-based compensation expense. The hypothetical cash flows associated with these excess tax benefits are reported as an increase to cash flows from financing activities and a corresponding decrease to cash flows from operating activities in our consolidated statements of cash flows.

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

Property & Equipment Additions and Capex

Our property and equipment additions include our capital expenditures on an accrual basis and amounts financed under vendor financing or capital lease arrangements.

The capital expenditures that we report in our consolidated statements of cash flows do not include amounts that are financed under vendor financing or capital lease arrangements. Instead, these amounts are reflected as non-cash additions to our property and equipment when the underlying assets are delivered, and as repayments of debt when the related principal is repaid.

Leverage and Liquidity

Our gross and net debt ratios are defined as total debt and net debt to annualized OCF of the latest quarter. Net debt is defined as total debt less cash and cash equivalents. For purposes of these calculations, debt is measured using swapped foreign currency rates, consistent with the covenant calculation requirements of our subsidiary debt agreements, and, in the case of the Liberty Global Group, excludes the loans backed or secured by the shares we hold in ITV plc, Sumitomo Corporation and Lions Gate Entertainment Corp. For Liberty Global Group, our ratios are adjusted to exclude debt and OCF of Ziggo and Ziggo Sport and its subsidiaries.

Liquidity refers to cash and cash equivalents plus the maximum undrawn commitments under subsidiary borrowing facilities, without regard to covenant compliance calculations.

Definitions and Additional Information

LiLAC Transaction

The Liberty Global ordinary shares and the LiLAC ordinary shares are tracking shares. Tracking shares are intended by the issuing company to reflect or “track” the economic performance of a particular business or “group,” rather than the economic performance of the company as a whole. The Liberty Global ordinary shares and the LiLAC ordinary shares are intended to reflect or “track” the economic performance of the Liberty Global Group and the LiLAC Group (each as defined and described below), respectively. For more information regarding the tracking shares, see note 1 to our consolidated financial statements included in our annual report on Form 10-K filed on February 15, 2017 (the "10-K").

“Liberty Global Group” does not represent a separate legal entity, rather it represents those businesses, assets and liabilities that have been attributed to that group. The Liberty Global Group comprises our businesses, assets and liabilities not attributed to the LiLAC Group, including Virgin Media, Unitymedia, UPC Holding BV, Telenet and, through December 31, 2016, Ziggo Group Holding. The consolidated financial statements of Liberty Global are included in our 10-K. For attributed financial information of the Liberty Global Group see Exhibit 99.1 to our 10-K.