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Master's Thesis

Mergers and Acquisitions:

A Case Study on Liberty Global Inc. and Virgin Media Inc.

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drawn.*

The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself. Therefore, all progress depends on the unreasonable man.

- George Barnard Shaw-

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Abstract

M&A deals have increased with time as a result of ease of access to information, market liberalization and globalization as a whole. On a broader note, Cross-border M&A may also be seen as a current trend, one which is still to expand in the next few years. The benefits of Cross-border M&A extend to the economy in which the acquiring firm expands to and this can therefore be seen as a form of Foreign Direct Investment.

The liberalization of markets overall makes them integrated to some extent therefore imposing more pressure on the competitiveness of each firm. The Technology, Media & Telecommunications industry is one of the most competitive industries with rapid changes in technology which if not quickly adopted may cost firms in the industry their value and existence on the market. This work studies a real-life deal that occurred this year, 2013 between Liberty Global Inc. and Virgin Media Inc. The acquirer Liberty Global Inc. like many firms, had the motive of expansion to its existing empire which is mainly across Europe.

This work assesses the worthiness of implementing the deal and prospects after the deal is made. After thorough assessment, it is then discovered that the deal and 24% premium paid are worthy as the target firm proves to be currently undervalued with great potential in the next five years. Cost synergies given the efficiency of operations mainly by the target firm are also a possibility. However, it is worth noting that all the discovered benefits are only to be realized provided that the merged firm is managed efficiently with great caution of the risks at hand.

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List of Abbreviations

%SynC	Percentage Cost Synergy
%SynR	Percentage Revenue Synergy
$\pi_{default}$	Probability of default
APV	Adjusted Present Value
ARPU	Average Revenue Per User
CAGR	Compound Annual Growth Rate
CAPEX/CapEx	Capital Expenditure
CBMA	Cross Border Mergers and Acquisitions
CFD	Cost of Financial Distress
CoGS	Cost of Goods Sold
DCF	Discounted Cash Flows
EBIT	Earnings Before Interest and Tax
EBITDA	Earnings Before Interest, Tax, Depreciation and Amortization
ERP	Equity Risk Premium
FCF	Free Cash Flows
FDI	Foreign Direct Investment
FV	Future Value
IT	Information and Technology
LGI	Liberty Global Inc.
LLU	Local Loop Unbundling
M&A	Mergers and Acquisitions
MVNO	Mobile Virtual Network Operator
PV	Present Value
RGU	Revenue Generating Unit
SG&A	Selling, General and Administrative

SVAR	Shareholder Value at Risk
TMT	Technology, Media and Telecommunications
VMED	Virgin Media Inc.
WACC	Weighted Average Cost of Capital
yoy	year over year

1. Introduction

Over the past two decades, there has been a rapid volume increase in Mergers and Acquisitions (M&A) activity as a result of deregulation, corporate integration and globalization. Cross-border M&A (CBMA) have since become a norm, with industries seizing investment opportunities and expanding operations on a global scale. This paper will define Cross-border M&A as that which occurs between firms with operations and headquarters in different countries and will study the case of a recently announced merger between Liberty Global Inc. and Virgin Media Inc. of which, both are prestigious and well governed firms in the telecommunications and television industry in their respective countries- the U.S and U.K. The prime objective is to analyze the impact of Cross-border M&A activity on both parties by valuation in order to realize any benefits and/or openings of any sort. The expansion of Liberty Global Inc. which will be further discussed is another essential to the study in order to see the effect of the newly added firm on the shareholders of its many others within and outside the US.

This paper will firstly discuss the different academic views, arguments, advances and contributions to the study of M&A activity, the valuation and its many influences and outcomes, with its main focus being in specific relation to Cross-border M&A. The methodology will then be based on these past arguments raised in the theoretical framework, of which valuation techniques are efficient, given the characteristics of the transaction at hand.

The second part of the paper will explore each of the firms and industry in detail including their corporate culture, performance and capital structure policy. The essence of this exploration is to use a well-tailored valuation procedure so as to obtain precision and a clearer understanding of what impacts the transaction will have on either or both firms.

Thereafter, individual valuation of both firms will be implemented with forecasts incorporating any firm-specific data in order to have a precise view of both firms'

capacities. Lastly, the impact of the merger between the two firms will be analyzed by bringing together, the findings from separate valuation as well as assessing the worthiness of the merger consideration.

2. Literature Review

Cross-border M&A similar to domestic M&A, are driven mainly by the need for expansion and profitability strategies. Moeller and Schlingemann (2005) provide clearer distinctions between cross-border and domestic transactions in that cross-border M&A usually involve large acquirers, higher free cash flow, public targets, relative deal size, cash payments, tender offers and hostile takeovers. Mantecon (2009) finds that in terms of volume, cross-border M&A have increased to nearly three times as much as that of domestic M&A. Although the year 2011 had a plunge in M&A activity due to an economic downturn, the Grant Thornton International Business Report (2012) after a survey of 12,000 businesses in 40 economies established that 34% continue to stand significantly interested in the activity compared to 2010 which only represented 26% of businesses globally.

Branching from early schools of thought on International Production, using an eclectic approach (Dunning, 1980), striking growth opportunities abroad induce participation in international investments, provided the right incentives. The company then markets its ownership-specific qualities such as organizational, technological or financial, among others, to foreign firms which are used to its advantage as entry modes (Pan and Tse, 2000). Recent studies in addition, also reveal that firms with high stock prices are more acquisitive both for the reason of growth and an extension to easier liquidity access (Mago, Marks, Matthews and Zenner, 2008); not forgetting the importance of technological innovation as the core of many strategies (Kim, Suh and You, 2013).

Participation in CBMA can however, be more challenging than domestic M&A as usually, international market forces or drivers may be unknown. The acquiring firms may face a legal system that supports property rights different from that of its home which may be a threat to future cash flows (Rossi and Volpin, 2004); this type of uncertainty also known as "liability of foreignness" (Zaheer, 1995). Additionally, more

disclosure of information or unfamiliar accounting practices may be encountered during the due diligence process (Mantecon, 2009). Past academic research dated back to the 70s, studied CBMA in an economic framework as a form of Foreign Direct Investment (FDI) with examples of Dunning (1993) and Williamson (1975). Put this way, Froot and Stein (1991) establish that with information asymmetry, there is a significant correlation between FDI and foreign exchange rates. On the other hand, Hitt, Shimizu, Vaidyanath and Vincenzo (2004) dispute the economic framework stating its limited insight for M&A implementation processes and therefore argue that there's need for additional insights as well as wide-ranging emphases.

Akin to other transactions, M&A players incur costs during the process such as contracting, auditing and legal advice fees. However, CBMA have higher information asymmetry leading to costs higher than would be in a domestic transaction (Luo, Suh and Zhao, 2004). Many academics argue on whether on average, CBMA yield positive or negative returns regarding expectations of corporate managers and analysts. The first argument of information asymmetry and resulting costs has been recently tackled by Ragazzino, Reur and Shenker (2004) who suggest that the risk may be reduced by simply changing the deal structure during the evaluation process. Unsurprisingly, Williamson (1975, 1979) on the notion of Transaction Costs Economics (TCE) which basically relates entry mode choice as a macroeconomic threat to company governance, had earlier argued in a similar manner by recommending an organizational structure designed in a way such that risks are minimized. Developing aforementioned literature on reduction in asymmetric information, Boeh (2011) studies a sample of over 3,000 M&A deals of both types- domestic and cross-border in which he incorporates contracting costs borne and time taken to execute the deals.

From this assessment, it is concluded that CBMA compared to domestic are more costly yet take shorter execution time. This is probably due to the level of asymmetry involved in CBMA transactions as stated by Luo et al. (2004). It is worth noting however, that the given literature so far proposes further research on cost reduction mechanisms implemented in CBMA transactions (Boeh, 2011).

Given the main motives and the greatest risk faced in CBMAs as noted by academics, the following section which will discuss in detail M&A procedure, expectations, valuation and outcome from previous studies.

2.1. An insight on M&A

In order to understand an outcome of any transaction, one must closely analyze the whole procedure from motives, considerations of the transaction and the valuation procedure. M&A usually take the following categories: i) horizontal where competitors or same industry level firms combine; ii) vertical where firms have a buyer-seller relationship, for example, a distribution firm can merge with its main supplier; and iii) conglomerate where firms neither have an industrial nor buyer-seller relationship. The latter is often associated with diversification.

2.2. Motives of M&A

As stated earlier, the board, management and its shareholders usually feel the need to extend their knowledge base, productivity and competitiveness for returns of growth in different aspects. Görg, Hijzen and Manchin (2008) using a sample of OECD countries, find that the number of mergers increases in both the market size of the acquisition and the target country; and that mergers are positively affected by the size of financial markets in both countries.

Synergy

In all transactions, the one word that management have in mind is Synergy; which is “...the additional value that is generated by combining two firms, creating opportunities that would not been available to these firms operating independently.” (Damodaran, 2005). Damodaran (2005) further classifies this additional value into two groups: operational and financial. Operational synergy involves the value added by combination of firms in terms of cost efficiency, profitability, higher growth and market power. While, financial synergy captures tax benefits, increase in value, debt capacity and diversification. Synergies imply that the value of the merged firms after the merger announcement should be actually greater than that during consideration.

Realized synergies should however be split among the parties and in order to be done fairly the strengths brought forth by each firm are considered as the underlying measure. This therefore means the larger proportion is allocated to the firm which contributes the most in order to realize the determined synergies (Damodaran, 2005).

Academics have closely studied the types of synergy, creating empirical evidence such as the likes of Berger and Ofek (1995) and Maquiera, Megginson, and Nail (1998) who find that diversification is only beneficial if the deals have related fields of business or operation. Devos, Kadapakkan and Krishnamurthy (2009) study a set of 264 large mergers and find that operational synergies are higher in focused mergers while tax savings generate a larger portion of gains in diversifying mergers.

The main evidence drawn by the authors is that gains are well derived from mergers with improvement in resource allocation. The other motives are true depending on either sides of the parties involved whether the bidder, or the target. This will be explained further after understanding the nature of the case study.

2.3. The due-diligence process

Similar to domestic M&A, CBMA have to examine their target and all its operational activities in order to have a definite background and information on the overall value and risk. Earlier work by Kish, Madura and Vasconcellos (1991) branch their findings from capital budget theory concluding that CBMA decisions are based on an asset valuation model. Recently, Erel, Liao and Weisbach (2012) established that valuation plays a major role in rousing mergers; firms that tend to be acquirers are usually those that have experienced a rise in stock market value, have currency appreciation and relatively high book-to-market values, while those with weaker economic performance tend to be targets.

However, CBMA as seen in the theoretical framework is more complex and involves more factors, hence resulting in crucial considerations. Angwin (2001) points out corporate and national cultural differences and how they can affect perception of the parties involved and the value of the deal. Corporate cultural differences include organizational routines, managerial practices and styles, communication systems; while national imply on a large scale: individual values, risk propensity, acceptance of

uncertainty, among others (Hitt et al., 2004). Influence of the aforementioned should therefore be closely considered in valuation.

2.4. Valuation Techniques

The assessment of how much an investment is actually worth is very essential in every form of transaction. In M&A, as mentioned earlier, firms are valued in order to give precise information to decision-makers on their investment. Overtime, a number of valuation techniques have developed, with improvements in some. Pandian and Woodlock (2013) point out three types of valuation; the asset method, guideline method and income method. In detail, the *asset method* values a firm on its net assets which is the difference between the market value of assets and liabilities. On the other hand, the *guideline method* uses market prices of comparable firms in order to obtain a price for the firm being valued while the *income method* uses estimates of a firm's future cash flows incorporating the risk associated with them. The Discounted Cash Flow model (DCF) , established in the 70s may be seen as the core of valuation as other methods rely on it directly or indirectly to obtain the present value of assets, so as to have better insight on the deal. Of the three types of valuation, the *income method* is popularly used and is can be comprehended as a development of the DCF model. It is therefore important to study the developments of this model and the different parameters it captures.

2.5. The Discounted Cash Flow (DCF) Model

Traditional valuation theory defines valuation as a function of three prime factors, which are cash, timing and risk. The DCF approach implies that the value of a business is the sum of its expected future free cash flows, discounted at an appropriate rate that reflects the cost of capital. Luehrman (1997a) shows how the model is built from a simple relationship between the present and future values branching from the following basic financial concept:

$FV = PV(1 + r)$; Which then yields the relationship:

$$PV = \frac{FV}{(1 + r)}$$

Where; FV is the Future value, PV is the present value and r is the interest rate.

When applying the fundamental relationship to a business, the present value equals the sum of the future cash flows adjusted for timing and risk:

$$PV = \sum_{t=0}^T \frac{E(CF)_t}{(1 + k)^t}$$

Where; FV in this case corresponds to $E(CF)_t$ which are expected cash flows or future cash flows and k is a discount rate which incorporates a risk premium.

The expected future cash flows are discounted at a rate with a risk premium because the cash flow pattern is uncertain and to compensate for the risk, investors demand a higher return. The DCF model requires short and long-term cash flow projection (usually 4 to 10 years) in order to execute valuation of the firm. The cash flows include new investments, revenues and expenses. To be more precise, Free Cash Flows to the firm (FCF or FCFE) are used which are earnings after tax, including depreciation net of capital expenditure and working capital. The estimates of short and long-term growth and return on invested capital should be essential to the FCFs being projected as a firm is expected to grow over time or renovate via occurring reinvestments. In addition to that, forecasted FCFs should be made considering any changes such as synergies, economies of scale, expected overhead reductions and changes in strategy.

Projection of FCFs cannot be made on a large time scale which thus explains why it is usually between four to ten years. A terminal value is therefore required to denote the present value after the forecast period of all FCFs generated by a firm. This can be written as:

$$TV = \frac{FCF_{T+1}}{k - g}$$

Where; FCF_{T+1} is the terminal value and g being the growth rate; the terminal value can be obtained by estimating the future value of the last projected FCF at time T, FCF_T , using the expected growth rate after the forecast period i.e.

$$FCF_{T+1} = FCF_T(1 + g)$$

Note: assuming that, g , the growth rate after the forecast period, is perpetual.

2.6. The Cost of Capital and risk parameters

The DCF model although widely used has academic dispute concerning what discount rate to use. From this arise two different DCF valuation methods which are the Weighted Average Cost of Capital (WACC)-based DCF and Adjusted Present Value (APV) which uses the unlevered cost of equity and the cost of financing separately.

WACC is a tax-adjusted discount rate that is meant to capture the value of tax benefits that are gained from debt financing, subsequently reducing the discount rate (Luehrman, 1997a). It is denoted as follows:

$$\text{WACC} = \frac{E}{V} k_E + \frac{D}{V} k_D(1 - t_c)$$

Where; $\frac{E}{V}$ is the equity-firm value ratio, $\frac{D}{V}$ the debt-firm value ratio, k_E the cost of equity, k_D the cost of debt and t_c is the marginal corporate tax rate.

The opportunity costs, k_E and k_D , are each comprised of a risk premium and time value. The time value is the return one earns for not bearing any risk over time. This implies that they are both risk adjusted. It is important to note that the costs should be current, reflecting current financial market conditions and not sunk or historical costs. In addition to that, they should equal investors' expected internal rates of return on future cash flows respective of each form of capital and weights should be based on market-value mixes of debt and equity (Bruner, Eades, Harris, and Higgins, 1998).

The cost of debt, k_D , the rate at which funding was borrowed can be decomposed simply yielding the sum of the current risk-free rate and a default spread. Where the default spread is obtained from the corresponding credit rating set. In a case where bonds have different ratings, the median rating may be used (Damodaran, 2013).

The cost of equity k_E is denoted as follows when using the Capital Asset Pricing Model (CAPM):

$$k_E = r_f + \beta_E(r_m - r_f)$$

Where; r_f is the risk-free rate, β_E the equity beta which is the sensitivity of the firm's equity to market patterns and $(r_m - r_f)$ is the equity risk premium- the difference between the expected return and the risk-free rate. The risk-free rates are obtained from Government securities. An investment is risk-free if it neither has default risk nor reinvestment risk (Damodaran, 2013) or as stated by CAPM, if it has a zero β . It further implies that an expected return with a β of one is equal to the market return. The beta is estimated by regressing returns against market returns while historical risk premiums are used. Collectively, the CAPM can be defined as a linear model used to assess the cost of capital centered around the expected return on its assets, incorporating the firm's risk in relation to that of the market and its underlying assumption being that investors hold a well-diversified portfolio.

The CAPM, developed by Sharpe (1964) and Lintner (1965) still stands, for almost half a century, as the most common method in cost of capital estimation and portfolio performance evaluation. Conversely, academia have overtime, developed faults in the use of the model. Faults include; imperfect measures of the market portfolio, non-normality of returns, deviating borrowing and lending rates, tax effects and the lack of existence of a pure riskless asset. Of all arguments, one still stands- Roll (1977) disputes the possibility of observing the Market Portfolio and concludes that it's thus impossible to test the validity of the CAPM, and opts for the Arbitrage Pricing Theory (APT) established by Ross (1976) which allows additional factors; mostly macroeconomic with factor specific betas for a fair estimation of discount rates. Dayala (2012) finds Roll's critique significant in that CAPM still reflects invalidity and suggests further investigation. However, Roll's critique can also be used as a guideline to determine whether the portfolio market is Mean-Variance Efficient (MVE) depending on whether CAPM tests hold or not.

Basu (1977) additionally points out strong evidence that the beta misses variation in expected return captured by other variables. Scholars of behavioural finance question the assumptions of homogeneity in investor rationality and market efficiency in the face of future uncertainty (Miller, 1977; Kahneman and Tversky 1979; Daniel, Hirshleifer and Subrahmanyam, 1997). Fama and French have in their work (1992, 1996 and 2004), have since found stronger evidence against the CAPM and have

modified the model according to the average-return anomalies missed by it. The model is a three-factor model of which, excess market return is one of the added factors. The inclusion proves its importance and is crucial as it captures robust common time-series variation in returns. They further advise using the CAPM as an introduction to Portfolio Theory because of its simplicity and from there, more complex and extensive models may be used such as the Intertemporal Capital Asset Pricing Model (ICAPM) by Merton (1973) which incorporates more variability factors such as state variables and wealth and can provide a better description of average returns. Nevertheless, it is important to note that the perceived limitations of the CAPM are mostly a result of the way in which the model is applied; mainly in estimating the risk premium and the beta (Pettit, 1999). Despite the many disputes of the model, CAPM is still fundamental in understanding Performance Evaluation and Portfolio Management, can be used as a benchmark and is also a foundation of the alternative models that have been established overtime.

Risk-free rate and the Equity Risk Premium (ERP)

ERP implies that the expected return on a portfolio exceeds the risk-free rate. Finance theory states intuitively the relationship between investment returns and risk- the riskier the investment, the higher return expected or demanded by investors (Damodaran, 2012). The choice of the risk-free rate to be used is essential as it determines the size of the ERP included in the cost of equity (Pandian and Woodlock, 2012). Bruner et al (1998) after a survey of leading corporations and financial advisors in the US, recommend that the risk-free should be well-tailored with the cash flows being valued and conclude that for most corporate acquisitions and projects, the yield on the US government bond with maturity of at least ten years would be appropriate. However, the use of current yields on US Treasuries as a proxy measure of risk-free rates of return has been highly doubted after the Standard & Poor's (S&P) recent debt downgrade. Booth (1999) measured total bond risk using standard deviation of returns over 20 years and from this discovered that over time, there has been a significant increase and at times has almost equaled that of equity. The demand for the use of the US Treasuries still stands relatively high thus suggesting it being a haven or "risk-free" if so, although longer-term average yields should be used until the current unrest

stabilizes (Pandian and Woodlock, 2012). Failure to adjust risk-free rates may result in overvaluation when measured from historical norms. In order to obtain a risk-free rate for CBMA valuation, forward rates and the riskless rate are used in an index currency to estimate the riskless rate in the local currency, taking into account the inflation rate as the analysis should be in real terms.

The standard approach for ERP estimation is by use of historical data where actual returns earned on equity over a period of time are obtained as well as returns on a risk-free asset from which the difference between the two is computed to yield a historical risk premium (Damodaran, 2012). Damodaran questions the efficiency of this model and further suggests an alternative way which adjusts for country-specific risk. Grabowski (2009) in concurrence with Damodaran, point out that ERP is cyclical during the business cycle and therefore rename ERP as 'conditional ERP', implying it changing according to whether there's a boom or recession in the cycle. Bruner et al (1998) add that the choice of an ERP is a subject of controversy concerning its value and estimation. From their survey, most of the best-practice companies were found to use a premium of 6% or lower while financial advisors and many texts were seen to use higher rates. Prospective equity risk premiums which can be derived by use of expected future, dividend yields, analyst consensus, estimates of future growth in nominal and real earnings, average payout ratios, and current stock market valuations as well as surveys (as seen by Bruner et al, 1998) can be used as an alternative (Pandian and Woodlock, 2012).

Applying this to CBMA valuation with the risks faced, it should be taken into account that historical premiums vary across economic cycles and the difference between estimation techniques of ERP will yield different results. If the risks in question are non-diversifiable and not captured by the beta used in the cross-border project, then a risk premium should be incorporated in the discount rate. For practicality's sake, it is safer to adjust the discount rate by adding a premium in order to reduce any distortions of the true value of the project (Froot and Kester, 1995).

Beta Estimation

Beta measures the relative movement of the business' excess returns on equity with that of the market. The market returns are normally measured using indices such as

S&P 500, NASDAQ, FTSE, CAC40 etc., respective of where equity is being invested and listed. The standard procedure for beta estimation involves regression of stock returns on market returns. However, this is usually associated with a high standard error, the firm's business mix that's reflected is not the current one but that of the period of the regression and the average leverage shown is not the current one but, as with the business mix, is over the period of regression (Damodaran, 2013). In order to correct this, Bruner et al (1998) suggest practical compromise such as an increase in the number of time periods used so as to improve the statistical reliability of the estimate yet caution should be taken as '*stale and irrelevant*' information may be included. Shortening the observation period from monthly to weekly or daily on the other hand, will increase the sample size but result in observations that are not normally distributed and additionally, unwanted random noise. The choice of a market index is also a practical compromise in that it is an '*unobservable portfolio*' consisting of all risky assets. Kaplan and Peterson (1998) recommend the use of a cluster of firms in the industry similar to that being evaluated so as to obtain a more precise beta as individual firm beta estimation as established by academia, has a high concentration of statistical noise. It is important to note nonetheless that for firms that operate on a large scale, it is more difficult to collect well-matched clusters.

Financial theory decomposes a firm's beta defining it as a composition of operating risk and financial risk. Financial risk is faced when a firm is levered and an increase in leverage results in a high beta. Hamada's (1972) denotation of the levered beta is popularly used and written as follows:

$$\beta_L = \beta_U \left[1 + (1 - t_c) \frac{D}{E} \right]$$

Where; β_L is the levered beta, β_U the unlevered beta (also known as the Asset beta), t_c is the marginal corporate tax and $\frac{D}{E}$ is the ratio of debt to equity. Inferring from the given formula, the unlevered beta is always lower than the levered beta complying with the traditional notion of higher risk being associated with higher leverage.

Applying this to M&A valuation, beta decompositions should be routinely performed during the due-diligence process. CBMA have overall, a lower beta given that country-

specific non-diversifiable risk may prove diversifiable in the context of a global market portfolio. The beta differs according to the market portfolio used in estimation (Froot and Kester, 1995).

Drawing from the derivations discussed thus far, the two types of DCF valuation will now be reviewed.

2.6.1. WACC-based DCF vs. Adjusted Present Value (APV)

WACC-based DCF

The standard financial firm valuation technique has been the WACC-based DCF. Like other discount rates, it is adjusted in order to capture any value generated or destroyed by the financing of a project (Luehrman, 1997a). The value, V_0 , of a project or firm using this valuation technique is calculated in two steps as follows:

- i) *PV of Planning Period*- this is the present value of the cash flows during the projection, year t to T .

$$PV = \sum_{t=0}^T \frac{FCF_t}{(1 + WACC)^t}$$

- ii) *Value of Residual Cash flows (Terminal Value)*- this is the value of the residual cash flows in year T , which begin in year $T+1$.

$$TV = \frac{FCF_{T+1}}{k - g}$$

The present value of the TV is estimated as follows:

$$PV_{TV} = \frac{TV}{(1 + WACC)^T}$$

The value is then: $V_0 = PV + PV_{TV}$

This technique has fewer computations yet with current computing software, is only suitable for the simplest and most static of structures. Ezzell and Miles (1980) argue in favor of WACC provided that the firm maintains a constant debt-to-equity ratio in market value, of which Inselbag and Kaufold (1997) prove. Luehrman

(1997a) advises that the application of WACC to firms with complex tax positions will yield poor results and is more unrealistic in cases such as cross-border capital budgeting problems. Since WACC by computation assumes the capital structure of the project or firm being valued i.e. the target, will be constant over time, Froot and Kester (1995) recommend re-estimation of the WACC for each period to account for the changes in the target's capital structure. This in earlier years of the field of Finance would have been a tedious procedure nevertheless given sophisticated software it can be used if still preferred although it then defeats its purpose. However, if the patterns are known in advance, it may be better to implement the APV method.

APV (or Valuation in Parts)

This technique separates the effects of the capital structure on value from the estimation of asset values. This very useful for complex investments so as to decompose cash flows in order to have precision on what effects each financial maneuver has. The valuation is as follows:

- i) *Base Case Value*- the firm is valued as though it were 100% equity financed. To do this, the firm's equity beta, β_E is unlevered to obtain the asset beta, β_A as shown below:

$$\beta_A = \beta_E \frac{E}{V} \quad \text{or} \quad \beta_A = \beta_E \frac{E}{E+(1-t_c)D}$$

The asset beta is then used to obtain the cost of assets, k_A using CAPM:

$$k_A = r_f + \beta_A(r_m - r_f)$$

Given the cost of assets, the FCFs can be discounted by it using the traditional DCF model to obtain the value, V_U , which is the all-equity value of the firm.

- ii) *Financing Side Effects*- these include interest tax shields, costs of financial distress, subsidies, hedges, issue costs and any other costs that may exclusively have an impact on the value, V_U . Expected tax savings are denoted as: $t_c k_D D$. The present value of tax shields is estimated according to the debt scenario given.

If absolute debt, D is expected to remain stable, then the expected tax savings, $t_c k_D D$ are discounted by the cost of debt, k_D , yielding;

$$PV_{ITS} = t_c D.$$

If relative debt, $\frac{D}{V}$ is expected to be stable, then the expected tax savings, $t_c k_D D$ are discounted by the cost of assets, k_A therefore yielding;

$$PV_{ITS} = \frac{t_c k_D D}{k_A}$$

Therefore, APV is the sum of the separate valuation:

$$APV = V_U + PV_{ITS} \pm PV(\text{of other possible effects})$$

Deducing from the valuation, it is seen that APV is more informative as it gives a clear picture of where the value comes from. The discount rates used contain nothing but time value and a risk premium respective of the cash flows being discounted (Luehrman, 1997b). Inselbag and Kaulfold (1997) suggest that it is more practical to apply the APV technique when firms target absolute levels of debt outstanding in the future while the WACC is more efficient when firms plan to maintain the relative level of debt in the future.

Valuation of CBMA

Applying both techniques to cross-border valuation require caution because of the differences in currency which can have a weighty impact on the NPV of the deal, cost of capital, and the level and volatility of future financial performance (Pettit, 2004). Therefore, differentials between long-term riskless interest rates in the countries being valued should be used to convert discount rates in order to match the respective denomination, whether home or foreign. The use of this implies the difference in the time value of money between the two currencies Froot and Kester (1995). The cost of capital will then be calculated as follows:

$$(1 + k_{\text{foreign}}) = (1 + k_{\text{home}}) \cdot \frac{(1 + R_{\text{foreign}})}{(1 + R_{\text{home}})}$$

Where k_{foreign} is the foreign-denominated cost of capital, k_{home} the home-denominated cost of capital and $\frac{(1+R_{\text{foreign}})}{(1+R_{\text{home}})}$ is the interest differential.

R_{foreign} and R_{home} are the nominal yields during the investment period on comparable-risk home- and foreign-denominated debt respectively (Froot and Kester, 1995). The cost of capital computed captures any currency risk associated with the given forex rate. Given a risky currency, while the other is constant means interest rates denominated in the risky currency will be higher than the comparable currency.

If given the case of foreign-denominated cash flows and there is need to discount them to home-denominated cash flows, the interest differential is used once more in order to generate the exchange rate to be used for cash flow conversion. This approach is useful in cases where the foreign investment's value in home currency is sensitive to exchange rates and a sensitivity analysis is required. It can also be used in cases where the computation of the cost of capital is more complex to determine than future exchange rates, and is computed as follows:

$$E(S_{t+1}) = S_t \times \left[\frac{(1 + R_{\text{home}})}{(1 + R_{\text{foreign}})} \right]^n$$

Where; $E(S_{t+1})$ is the expected exchange rate in the next period(s), S_t the spot rate, n the number of years forward and $\frac{(1+R_{\text{home}})}{(1+R_{\text{foreign}})}$ is the factor that determines the annual change in the exchange rate.

Quoted interbank forward rates may be used in conversion yet are problematic as reliable quotes for most currencies are usually only available for a limited number of periods into the future (Froot and Kester, 1995).

It is important to note that this paper will not showcase the asset method and the guideline method in detail as with mere M&A procedure, the DCF technique still stands as the most convenient and efficient. However, the additional use of the guideline method is considered handy in performance analysis provided that the

comparable is well-matched within the industry (Kaplan and Ruback, 1996). Goedhart, Koller and Wessels (2005) nonetheless advise that finding firms with the right criteria for comparable values is challenging as industries are loosely identified and conclude that the DCF method stands the most reliable. Given the case of cross-border valuation, more parameters are involved- the more the expansion of firms, the larger the variation in growth rates, capital structure and other returns therefore making valuation complex, requiring close and informative valuation.

After the costs pointed out under the insight on M&A, and the valuation techniques are shown, the question still stands- whether M&A are worth the current global hype and how the transactions are paid for.

2.7. M&A, CBMA Consideration and the price they pay

M&A transactions may be paid for wholly with cash or securities- stock or debentures, or a combination of both cash and securities. Payment with use of stock may use a fixed or floating exchange rate; where the use of a floating rate involves an offer of stock value in absolute currency terms while the fixed rate an offer of a number of shares by made by the bidder. Most M&A are fixed exchange transactions where the number of acquirer shares to be exchanged for a target shares is revealed during the merger announcement. The release of new information has an impact on stock prices depending on investors' sentiments. In the case of floating exchange rates, the number of shares to be exchanged is determined three months, after the announcement of the deal, known as the pricing period (Mitchell, Pulvino and Stafford, 2004). Mitchell et al (2004) with a sample of 2,130 announced M&A between 1994 and 2000, further establish that the reaction to floating exchange rate deals is positive upon announcement yet drifts to an average of -3.2% during the pricing period as it is indeterminate whether the deal consideration is approved or not. Securities-only transactions may, however bring about uncertainty on the seller's end and therefore, a mix of both cash and securities is optimal. Additionally, there is over-payment and a strong link between negative price shocks when M&A deals are security-financed due to portfolio rebalancing as opposed to cash-financed deals. This destroys shareholder value for the acquiring firm (Mitchell et al, 2004). Andrade, Mitchell and Stafford (2001)

after studying a sample of publicly-traded US-based firms, find that acquiring firms that use at least some stock to finance their deals significantly have three-day average abnormal returns of -1.5% while those that don't use stock have abnormal returns of 0.4%.

Moreover, target firms' shareholders are better-off when there is no stock-financing in the transaction with three-day average abnormal returns slightly over 20% and 13% for stock-financed transactions. In addition, Hazelkorn and Zenner (2004) from their empirical analysis of 1,500 non-US financial transactions, conclude that the market reacted more positively to cash-financed acquisitions than to stock-financed acquisitions in both the short and long run as this shows more confidence in the acquiring firm's future cash flows. However, use of cash leaves the acquiring firm's shareholders bearing all the risk than with use of stock. Christofferson, McNish, and Sias (2004) prove that mergers achieve cost synergies more often than revenue synergies and sequential acquirers have a higher chance of succeeding than first-time acquirers.

In accordance with payment, the acquiring firm has to pay a premium over the price to settle the deal. Premiums are based on historical market values, strategic considerations and estimated synergies. Premiums are said to be worth it provided that the value of synergies realized is greater. Sahni and Sirower (2006) come up with a benchmark which shows how much of the firm's is at risk assuming no synergies are realized after the acquisition, which they call Shareholder Value at Risk (SVAR). The SVAR is simply computed as follows:

$$SVAR = \frac{\textit{Acquisition Premium}}{\textit{Acquirer's pre - announcement market value}}$$

Concluding with Hazelkorn and Zenner's (2004) drawings; *'acquisitions of foreign companies and assets created more shareholder value than domestic acquisitions, suggesting that the synergies and benefits underlying overseas expansion have been a source of significant strategic value.'*

2.8. Conclusion

Different perspectives have been highlighted in this chapter from different academics and researchers with the main motive explaining the essence of M&A deals and why firms are highly driven to participate. However, the realization of pre-deal expectations are proven based on the structure of the parties involved in the deal and what type of deal whether vertical or horizontal. It's nevertheless important to emphasize the conclusion of Devos et al (2009) which is that regardless of the structure or nature of the deal, given efficient resource allocation by management, synergies may actually be realized reducing the SVAR.

M&A deals are all expected to add value or maintain that which exists. In the same way, CBMA may also be looked at not only beneficial to the firms involved, but the economy in which the deal is made, as a type of FDI. Cross Border M&A have more sophisticated details in contrast to domestic deals therefore making the valuation process more involving with a call for vigilance. Provided this, the aforementioned APV valuation when applied in this work will carry a greater weight regardless of the results the other valuations yield.

Given the literature and overview of M&A and CBMA, the following section analyses the firms involved in one of the pronounced biggest deals in the cable industry between the US and the UK.

3. Firm and Industry Review

Telecommunications, Technology and Media (TTM) Industry is currently highly concentrated yet large media/telecommunications firms known over the past decade(s) still stand as the strongest, most influential and most competitive. The industry demands for many factors with consistent improvement over time in order to maintain competitiveness and client loyalty and credibility. Given the firms at hand, this section will give an insight on the firms involved and the industry of operation in their respective countries/regions.

3.1. Liberty Global Inc. (LGI), (Ticker: LBTY)

Liberty Global Inc., US-based and established in 2005 as a merger between Liberty Media and UGC, is an international provider of video, broadband internet and telephony services, serving 19.8 million customers, both residential- and business-based across 13 countries, primarily in Europe and Chile. Its business strategy has a higher weight of emphasis on superior organic growth, opportunistic M&A activity and commitment to superior equity returns which is done through an appropriate leverage mix and constant equity repurchases. It is listed on NASDAQ and its operations are run through its wholly-owned subsidiary, Liberty Global Europe Holding BV (Liberty Global Europe) where European countries include; Austria, Belgium, Czech Republic, Germany, Hungary, Ireland, Netherlands, Poland, Romania, Slovakia and Switzerland; while other countries of operation are from Latin America- Chile and Puerto Rico (Liberty Global Inc., 2012).

The cable-provider multinational firm's services to European countries cover broadband networks and leads in most of the markets of operation. Under Liberty Global Europe is a wholly-owned subsidiary, UPC BV Holding, which provides the aforementioned services to nine European countries; Austria, Czech Republic, Hungary, Ireland, Netherlands, Poland, Romania, Slovakia, and Switzerland; and Chile. Other subsidiaries are wholly-owned Unitymedia KabelBW in Germany, and majority-owned Telenet in Belgium. Services provided to countries of operation in Latin America are under VTR Global Com SA, a subsidiary that is 80%-owned in Chile, and Liberty Global Puerto Rico a 60%-owned subsidiary in Puerto Rico. Liberty Global's consolidated programming interests in both Europe and Latin America are primarily

held by another wholly-owned Liberty Global Europe subsidiary, Chellomedia BV, which also owns or manages investments in other businesses mainly in Europe (Liberty Global Inc., 2012).

3.1.1. Financials

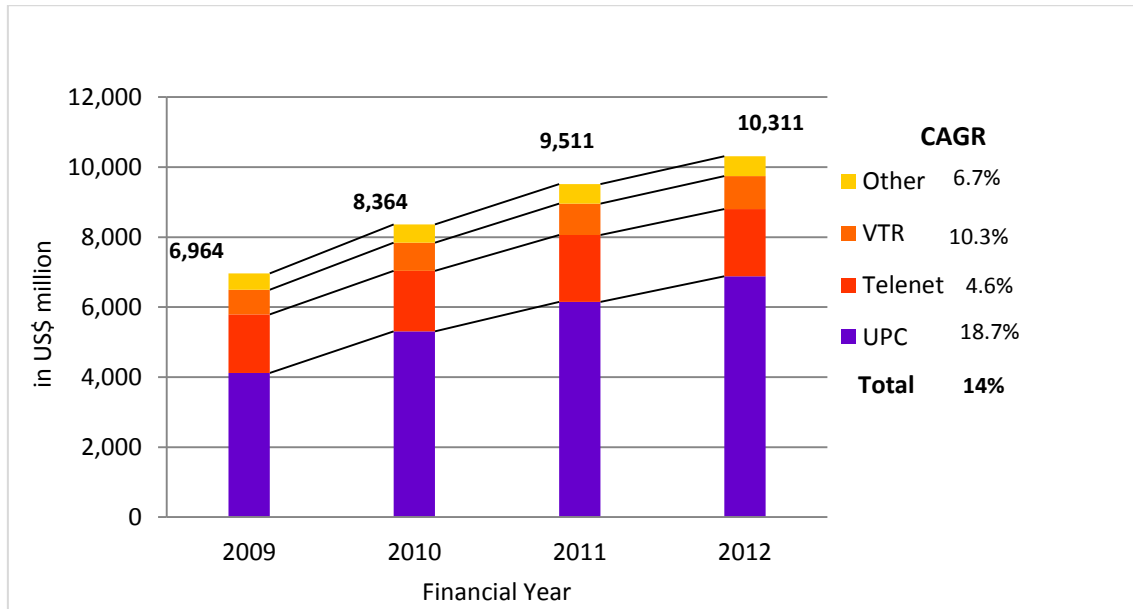
Liberty Global Inc. is a highly leveraged firm with an increase in the year 2012 resulting in a debt-to-capital ratio of 93.55% (Bloomberg, 2013), of which most is at subsidiary level and is not liable to LGI as the parent. LGI has 85% of its total debt due 2017 and thereafter and managed to reduce fully-swapped borrowing costs by 80 basis points dropping to a year-over-year of 7.2%. The increase in debt in the preceding year was mainly due to the closing of its Puerto Rican OneLink transaction. In order to suffice attractive equity returns without incorporating unexpected risk, LGI targets a consolidated leverage level between four to five times of its consolidated operating cash flow. It is important to note however that timing of acquisitions and financing transactions may drift the level from the target. The year 2012 ended with the adjusted ratio of consolidated debt to that of annualized consolidated operating cash flows being 5.3x, while the ratio of consolidated net debt (which is total debt less cash and cash equivalents) to annualized consolidated operating cash flows was 4.7x (Liberty Global Inc., 2012a).

LGI's consolidated liquidity at the end of the financial year 2012, was approximately \$5.3 billion, including adjusted cash of \$3.1 billion (of which \$1.8 billion was at the parent level) and \$2.2 billion in aggregate borrowing capacity as per credit facility. The firm's ability to service or refinance debt and to maintain compliance with leverage covenants in credit agreements and indentures of its subsidiaries predominantly rests on its capacity to sustain or increase the operating cash flow of its operating subsidiaries, and achievement of sufficient returns on capital expenditure and acquisitions (Liberty Global Inc., 2012b).

Liberty Global's financial year ended 31st December 2012 had recorded consolidated revenue of \$10.3 billion with an 8.4% year-over-year growth rate of which, as shown in Figure 1, UPC maintained its place as the highest in growth and revenue generation over the 4- year trend. The surge of revenue from the firm's preceding financial year was mainly due to the positive contributions of acquisitions, primarily KabelBW as well

as the Revenue Generating Units' (RGU) organic growth of 34%. Adjusting for impacts of foreign exchange and acquisition, the rebased year-over-year revenue growth rate of the year 2012 was at 5.8%, which is seen to have increased by 1% compared to the year 2011, making it the best top-line performance in five years.

Figure 1. LGI Revenue: Segment Information



Source: Liberty Global Annual Report, 2011; 2012.

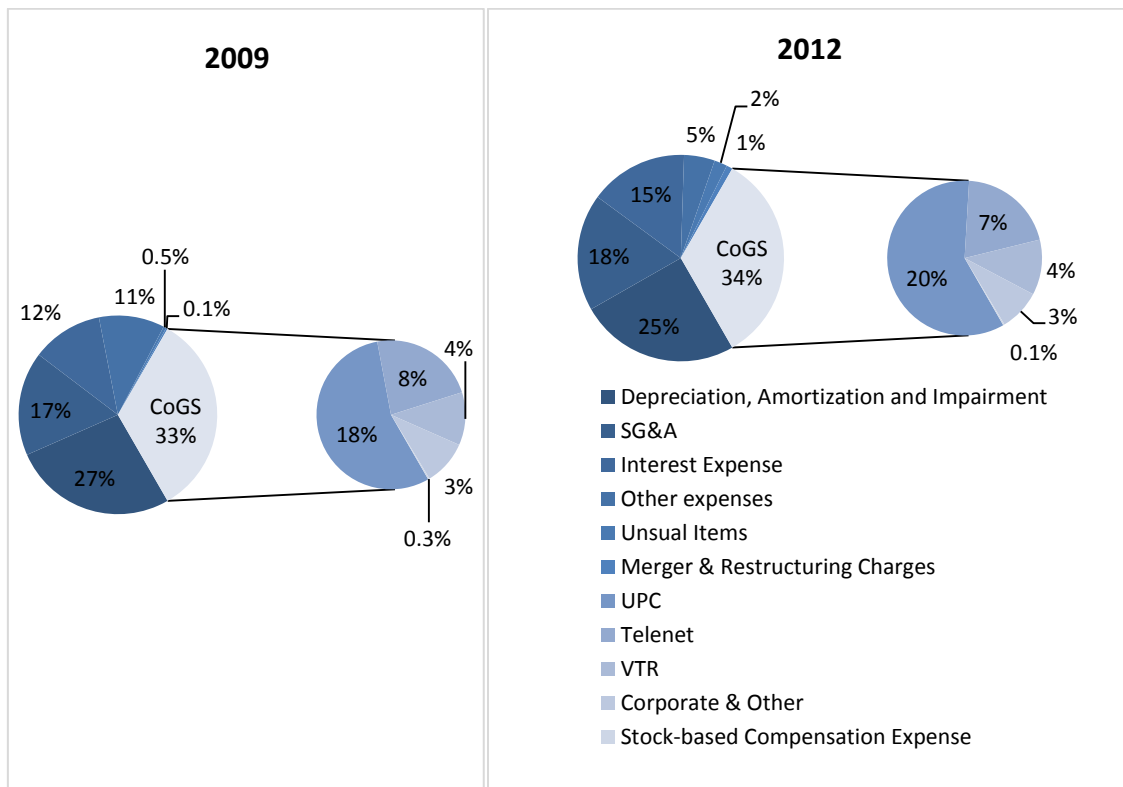
The firm's products have, overall increased total organic additions i.e. RGU organic additions (see appendix), of which over the trend, the television unit has performed the worst in video subscription although improving by 7% as a result of the launch of Horizon TV in 2012, the unit is still yielding losses at net additional success level. The telephony and broadband units on the other hand, have maintained upright growth over the trend and reveal year-over-year growth of 32% and 19% respectively (Liberty Global, 2012b).

Liberty Global's operating cash flow had an upward growth in the same manner as its revenue of 4% after adjustments made of acquisition and foreign exchange effects and operating cash flow margin 10 basis points up to 42.7% compared to the previous year. The year over year growth increase was mainly from Western Europe operations as a result of its consolidation of Kabel BW of which businesses in Germany, Ireland and the Netherlands contributed largely.

The increase in revenue year by year has a corresponding expense of marketing its products i.e. advertising, delivery of mobile handsets to retail locations and third-party sales commissions. The cost of goods sold (CoGS) includes programming, network operations, interconnect, customer operations, customer care, stock-based compensation expense and other direct costs, while SG&A include human resources, information technology, general services, management, finance, legal and sales and marketing costs, stock-based compensation and other general expenses. CoGS have over the trend, only increased by 1% relative to its respective revenue in the corresponding financial year, as shown in *Figure 2*. Interest expenses have, compared to 2009 increased due to higher average outstanding debt of which some costs of borrowing have reduced by 80 basis points as stated earlier. Liberty Global has however, currently issued €500 million (\$660 million) of 5.125% senior secured notes in Germany with the proceeds to be used to refinance its existing 8.125% senior secured notes. The slight increase in other expenses reflects the impact of the firm's M&A activity including stock-based compensation (Liberty Global, 2012b).

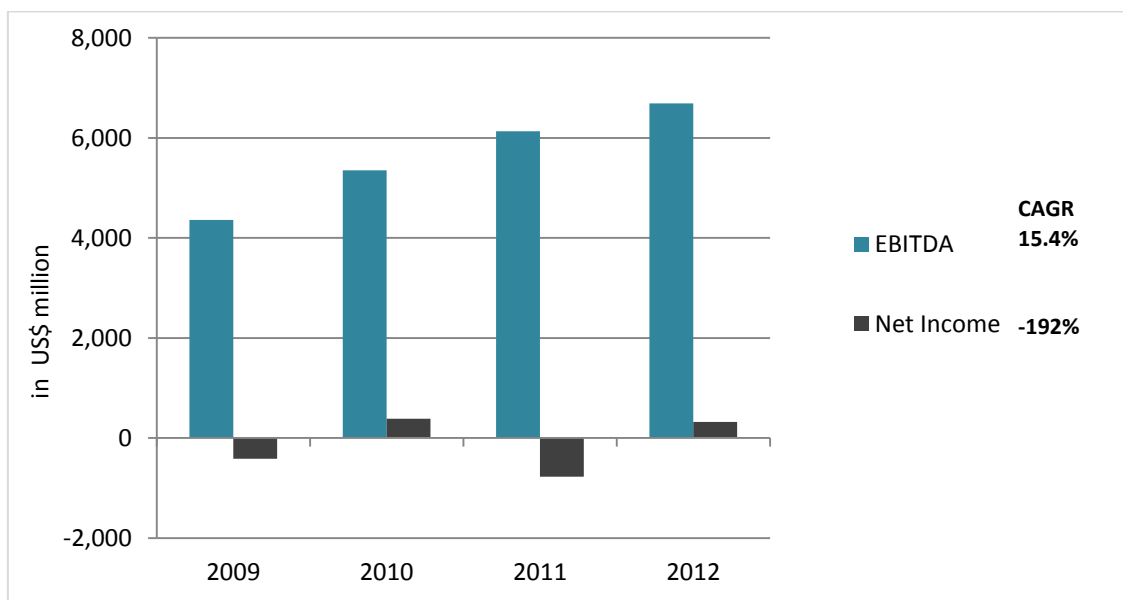
Although Liberty Global has had an upward-oriented revenue growth rate and EBITDA with a CAGR of 11% over the 4-year trend, *Figure 3* shows that net income has been relatively low with losses in years 2009 and the most in 2011 which was a result of interest payments on its high leverage and foreign exchange risk. The financial year ended 2012 brought forth, close to a 200% growth in net income making it positive primarily due to progressive acquisition impacts and better foreign transactions (Liberty Global; 2011, 2012b).

Figure 2. LGI Expenses/Revenue comparison: 2009 and 2012



Source: Liberty Global Annual Report, 2009; 2012.

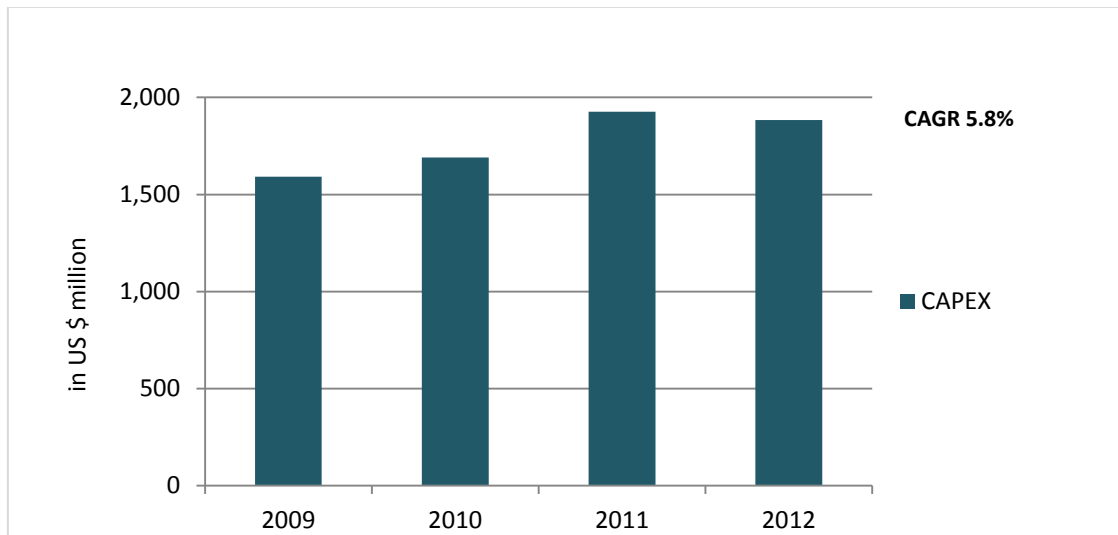
Figure 3. LGI Consolidated Financial Performance



Source: Liberty Global Annual Report, 2011;2012.

The financial year 2012 for LGI reported a decrease in CAPEX of \$43 million compared to the corresponding prior year due to working capital efforts as non-cash vendor financing and capital lease arrangements were \$170 million higher year-over-year.

Figure 4. LGI Capital Expenditure



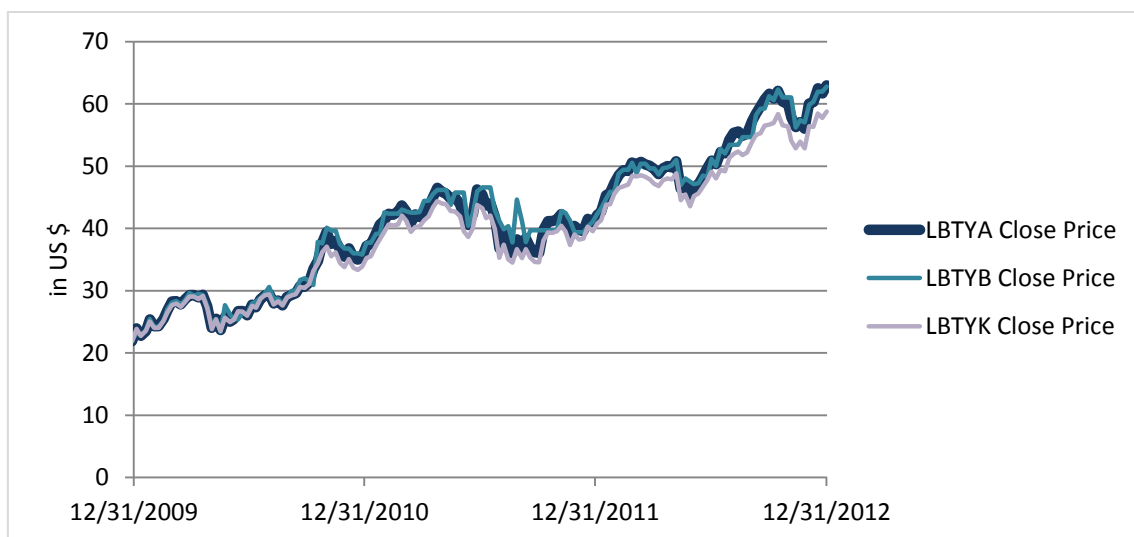
Source: Liberty Global Annual Report, 2011;2012.

Given the financials, Liberty Global with its borrowing capacity, liquidity, access to capital markets and operating momentum expects a continuation in growth of RGUs, improvement in its products, potential use of excess capital including primarily, M&A activity and stock buybacks. The firm continues to incorporate competitive and economic factors in its markets of operation and the availability of accretive M&A opportunities and the impact of M&A activity on its operations and financial performance, and other updated information and statements. It is worth noting however that activities and operations are exposed to a level of risk and may not yield results as expected in forth-coming years. The risks include most importantly, subscription of customers which may be maintained by technological improvement of products and advanced offerings in order to capture potential subscription subsequently increasing RGUs over time. Other risks include law and regulation of which can be minimized by compliance in order to close acquisitions and dispositions (Liberty Global, 2012b).

3.1.2. Stock Market Performance

Liberty Global has its stock listed and traded on the NASDAQ Global Select Market with three classes of common stock namely; LGI Series A with ticker LBTYA, LGI Series B with ticker LBTYB and LGI Series C with ticker LBTYK. The transaction basis is that each share of LGI Series A and Series B Common Stock held on the record date for the distribution will receive 1 share of LGI Series C Common Stock. The transaction is generally intended to be tax-free to holders of LGI Series A and Series B Common Stock for U.S. federal income tax purposes (Liberty Global, 2005). *Figure 5* shows the evolution of the respective stocks' close price over the 4-year trend.

Figure 5. LGI Close Price Evolution



Source: Bloomberg Data.

3.1.3. Industry Review in Countries/Regions of Operation

Most of Liberty Global's footprint is across Europe of which it manages its operations across 11 countries bound by EU Regulation which includes *Communication Regulation* and *Broadcasting Law*. These cover formalities such as registration and licensing, distribution of media, data protection, retention and electronic commerce. Its European operating firms are also subject to both national and European level regulations on competition and on consumer protection, which are broadly harmonized at the EU level. The most influential of these countries including Chile will

be briefly analyzed to have a better understanding of the markets Liberty Global Inc. operates in and under what regulations.

Germany

Germany has altered the EU laws into national laws although under the German legal system competency is split between the Federal State (telecommunication law) and the German federal states (Bundesländer) (media law). As of December, 2011, The Federal Cartel Office approved the KBW Acquisition under conditions such as distribution of basic digital television channels (as opposed to channels marketed in premium subscription packages) on its entire network in unencrypted form commencing January 1, 2013 (Liberty Global, 2012a).

The Netherlands

The Netherlands has an electronic communications law that broadly transposes the Regulatory Framework. According to this electronic communications law, Onafhankelijke Post en Telecommunicatie Autoriteit (OPTA), the Netherlands NRA, should perform a market analysis to determine which, if any, operator or service provider has Significant Market Power. However, after several analyses, the television market proved to be independent of regulation as competition had increased over time leaving clients/consumers free to choose across providers (Liberty Global, 2012a).

Switzerland

Switzerland has a regulatory system which partially reflects the principles of the EU, yet it is different from the European regulatory system of telecommunications. The Telecommunications Act (Fernmeldegesetz) regulates, in general, the transmission of information, including the transmission of radio and television signals. Swisscom is a dominant provider and as per restrictions, is the only one with unbundled access to the local circle of third parties. This leaves LCI's UPC Cablecom and other cable providers have no such access. UPC Cablecom's retail customer prices are subject to review by the Swiss Price Regulator. In October 2012, UPC Cablecom announced an agreement with the Swiss Price Regulator pursuant to which UPC Cablecom would make certain changes to its service offerings in exchange for progressive increases in

the price of its basic cable connection over the next two years. In this regard, effective November 1, 2012, UPC Cablecom began offering a basic tier of digital television channels on an unencrypted basis (Liberty Global, 2012a).

Belgium

Belgium has broadly transformed the Regulatory Framework into law. According to the electronic communications law of June 13, 2005, the BIPT and the Belgian NRA, should perform market analyses to determine which, if any, operator or service provider has Significant Market Power. LGI's Telenet was pronounced as one regarding the market for call termination on an individual fixed public telephone network with the incumbent Belgacom as its competitor (Liberty Global, 2012a).

Chile

LGI's VTR is subject to certain regulatory conditions which were imposed by the Chilean Antitrust Court in connection with VTR's combination with Metrópolis Intercom SA in April 2005. These conditions include, among others; prohibiting VTR and its control group from participating, directly or indirectly through a related person, in Chilean satellite or microwave television businesses, obtaining exclusive broadcast rights, except for specific events, and requiring VTR to offer its broadband capacity for resale of internet services on a wholesale basis. Internet services are considered complementary telecommunication services and, therefore, do not require concessions, permits, or licenses and wire line cable television permits are granted for an indefinite term and are non-exclusive (Liberty Global, 2012a).

Liberty Global operates in increasingly competitive markets which, if not considered may leave it at a loss of capacity to compete and be at par or higher than competitors. However, its products and services in markets of operation are actually highly competitive facing competition from DTT service providers, video provided over satellite platforms and networks using DSL technology in the video services sector.

In the provision of telephony and broadband internet services, there is increasing competition from the binding telecommunications operators and other service providers in each countries of operation as well as mobile providers of voice and data.

The incumbent telecommunications operators typically dominate the market for these services and have the advantage of nationwide networks and greater resources than Liberty Global to devote to the provision of these services (Liberty Global, 2012a).

3.2. Virgin Media Inc. (ticker VMED)

Virgin Media Inc., a UK-based firm established in 2006 as a merger between NTL and Telewest, is a 'quadplay' provider of broadband internet, television, mobile telephony and fixed line telephony services to commercial and residential customers across the UK. The firm's executive headquarters are based in the US and it is listed primarily on NASDAQ and secondarily on the London Stock Exchange. It is the UK's largest provider of residential broadband internet, pay television and fixed line telephony services by number of customers. The company has two segments of operation namely; Consumer segment and Business segment, and currently aims to use its network, people and creativity to go beyond traditional IT in order to help businesses transform despite their challenges (Virgin Media, 2012).

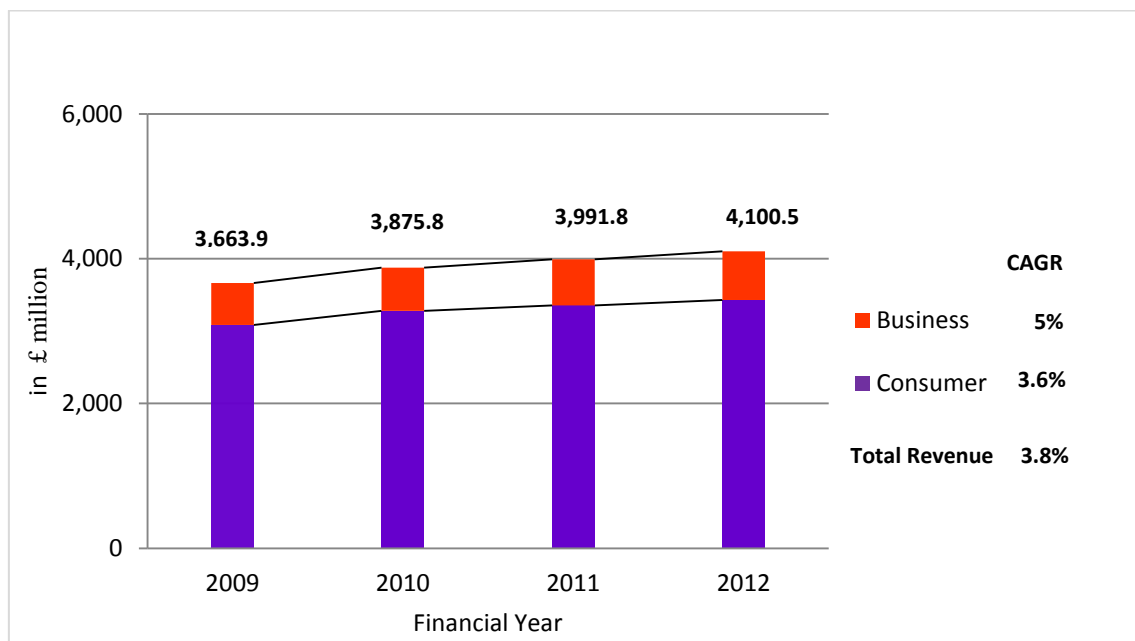
The Consumer segment distributes television programming over its cable network and provides broadband and fixed line telephone services to residential consumers, both on and off its cable network. It also includes mobile telephony and mobile broadband operations provided over third party mobile network. All cable broadband internet, television and fixed line telephone services to residential customers in the UK are under the Virgin Media brand and its cable services are distributed through its wholly-owned local access cable network covering many metropolitan areas in England, Wales, Scotland and Northern Ireland. The Business segment on the other hand, offers a collection of voice, data and internet solutions to commercial and public sector organizations in the UK, ranging from analogue telephony to managed data networks and applications. It provides services to approximately 50,000 businesses and almost 250 public sector organizations, while supplying communications services to around three quarters of the UK's health and emergency service providers and close to half of the police forces (Reuters, 2013).

3.2.1. Financials

Compared to Liberty Global, Virgin Media ended the year 2012 with a debt to capital ratio of 65.67%. Although this was a decrease compared to its prior year, it still falls in line with characteristics of Media-domiciled firms being highly leveraged. The firm as per covenant tries to maintain a leverage ratio of 3.75x each year and currently has long-term debt payable from 2016 onward.

Virgin Media, in the financial year ended 2012 had recorded total revenue of £4.1 billion with a year-over-year rate of 2.7% from the preceding year as a result of consumer revenue growth from the demand for superfast broadband and TiVo, a digital video recorder. The Consumer segment each year generates slightly over 80% of the firm's revenue. *Figure 6* shows Virgin Media's revenue growth by segment over the 4-year-trend of analysis.

Figure 6. Virgin Media Revenue by Segment

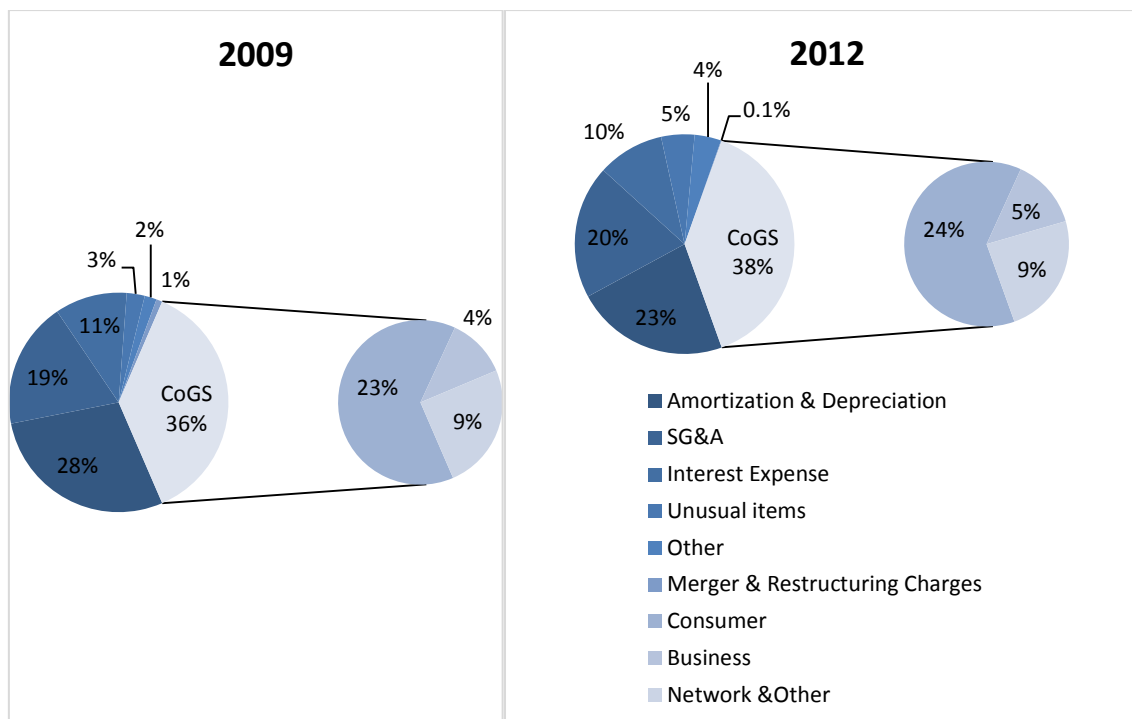


Source: Virgin Media Inc., 2010; 2012.

Virgin Media faced an increase of 1.5% in costs as compared to its prior corresponding financial year, and the years before as shown in *Figure 7*, as a result of an increase in the Business Segment cost of sales and network and other operating costs, which were partially offset by a decrease in consumer cost of sales due to a decrease in demand for fixed line telephony. The cost of sales has however, since

2009, increased in terms of programming. SG&A was highly induced by marketing and advertisement which begun in the year 2011 featuring influential celebrities and the Virgin Brand founder, Sir Richard Branson of which thereafter, increased sales remarkably. Interest expense was seen to have reduced as a result of reduction in the level of debt and lower borrowing costs along with the effect of interest and cross currency interest rate swaps chosen as accounting hedges.

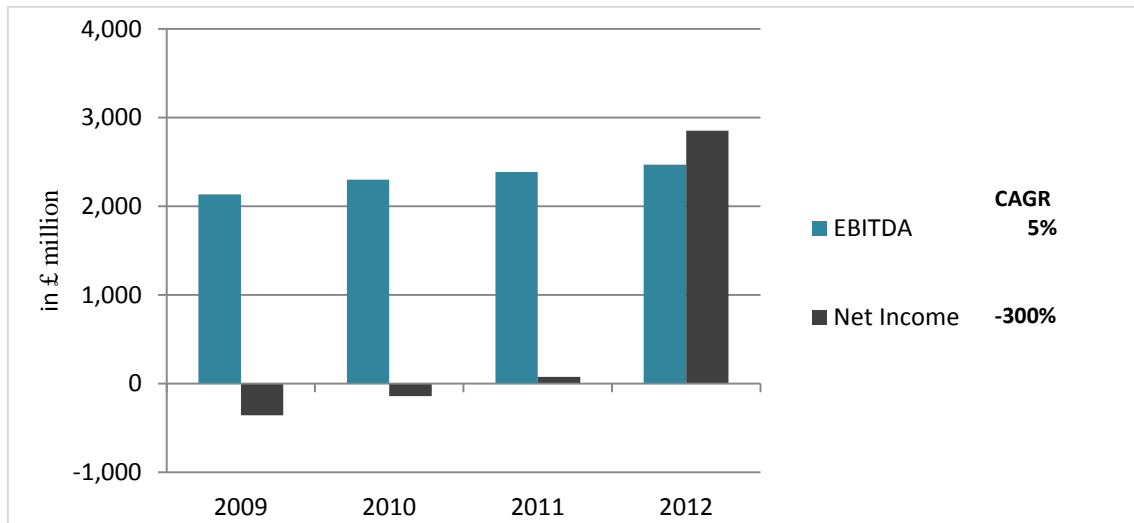
Figure 7. Virgin Media Expenses/Revenue Comparison: 2009 and 2012



Source: Virgin Media Annual Report, 2009;2012.

Virgin Media's Net Income as shown in *Figure 8* had remarkably increased from £75.9million in 2011 to £2,852.60 million in 2012, as well as compared to prior years which depicted losses over the 4-year trend, as a result of reduction in the deferred tax asset valuation as per UK tax law, which resulted in a non-cash income tax benefit of £2.6billion.

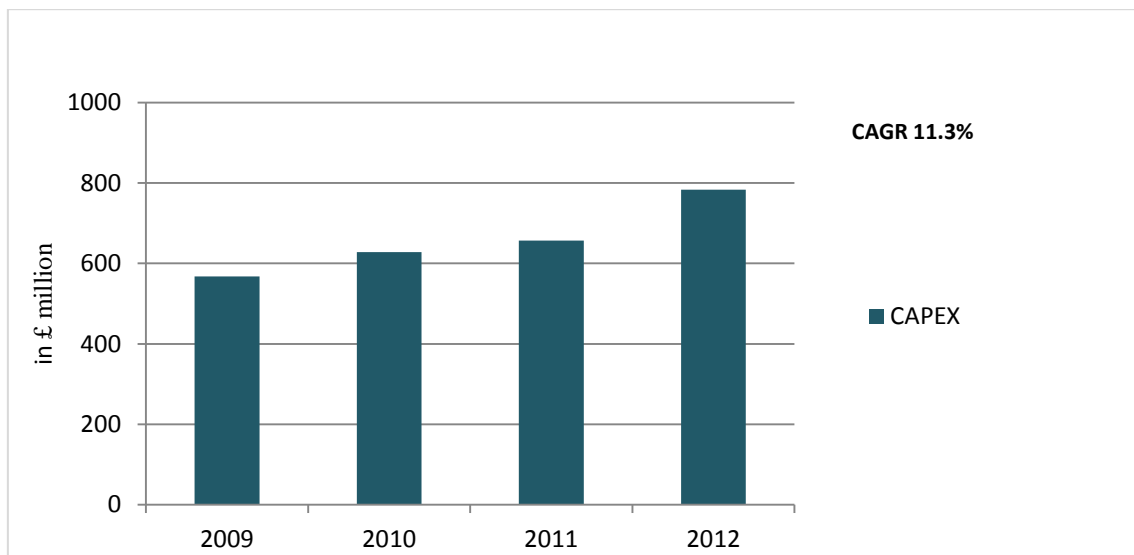
Figure 8. Virgin Media’s Financial Performance



Source: Virgin Media Annual Report, 2009;2012.

Virgin Media’s CAPEX as illustrated in *Figure 9*, has over the year grown mainly covering capital leases, fixed and intangible assets among which, a broadband upgrade program was implemented. The firm expects its cash CAPEX i.e. purchase of fixed and intangible assets, to maintain 15% to 17% of its revenue for the current year 2013 onward.

Figure 9. Virgin Media’s CAPEX



Source: Virgin Media Annual Report, 2009;2012.

Virgin Media's financials have achieved its strategies set forth in 2012 and with this, the firm expects sustainable growth for the years due and will still work on debt reduction and capital structure optimization to ensure shareholder return and a healthy financial status.

3.2.2. Stock Market Performance

Virgin Media's stock as aforementioned, are listed on two markets- the London Stock Exchange and NASDAQ with the ticker VMED. *Figure 10* shows the evolution of VMEDs' stock close price.

Figure 10. VMED Stock Close Price Evolution



Source: Bloomberg Data.

3.2.3. Industry Review in Countries/Regions of Operation

Virgin Media Inc. is the second largest service provider in the UK with 40% market share while British Sky Broadcasting Group (BSkyB) is the largest with 80% market share making it its current sole influential and prime competitor. British Sky is known for its innovative business model and callously competitive pricing due to its minor interest payments relative to those of Virgin Media.

However, pricing in the UK telecommunications market has over the years become more rational giving Virgin Media a guarantee on demand for data traffic that requires a high speed delivery mechanism like its fiber network. The current market structure is

also promising as consolidations over the years have reduced the number of competitors.

3.3. Conclusion and justification of proposed merger

M&A deals in the telecommunications and media industry have grown overtime and proved successful, with close examples being Liberty Global and Virgin Media since their establishment. As per financials and industry background of region/country of operation, the deal that was publicly announced on the 5th of February between Liberty Global Inc and Virgin Media is, with no doubt essential to both firms in many ways.

Firstly, LGI's strategy to cover Europe, which generates 80% of its income is being implemented and considering the competition in the industry, the fusion of the second largest multinational cable-provider firm and the second largest cable-provider firm in the UK promises improved market power, innovation, technology and customer base, among others.

Secondly, given the tight regulation and fairly small market size in most European countries where only one or two providers are available, the merged firms may together be able to seize a larger share on the market as a whole to improve competitiveness.

Lastly, both firms' historical performance has had an upward orientation suggesting a possibility of a sustained path with no plunges. For example, cost reduction may be one of the benefits considering how large costs of sales, interest and SG&A expenditure are for both firms. Virgin Media's capital structure optimization program if well implemented by Liberty Global may reduce the high leverage over time, making it less risky in the long-run as a whole. As the SWOT analyses (see appendix) show, the firms would, to some extent complement each other.

4. Performance Forecast

As stated in the literature review, in order to have precise valuation of the firms and to capture any synergy from the deal, the firms need to be assessed separately, realizing their potential performance. This is done by projection of the firms' financials in the forthcoming years, taking into account all possible scenarios and effects. Historical data/trends are used obtained from the firms' filing with the Securities and Exchange Commission (SEC), the firms' respective websites, press statements, annual financial reports, co-management information, industry and analyst reports, and auditing by large accounting firms.

In order to use the valuation methods as discussed earlier, future Free Cash Flows (FCFs) to the firm are essential, hence the need for projection of their possible drivers given the characteristics and structure of each firm. Technically, the FCFs are obtained from the given equation:

$$FCF = EBIT(1 - t_c) - (CapEx - Depreciation) - \Delta WC$$

Where; $EBIT(1 - t_c)$ is the firm's after-tax operating income, $CapEx$ the firm's capital expenditure and ΔWC is the change in non-cash working capital between reported financial periods (Damadoran, 2012).

As seen from the equation, the drivers should be analyzed in full detail taking into account all relevant elements from the firm's financials. The firm's operating income fully depends on revenue and expenses a firm may face while CapEx and depreciation on investments made by the firm, and lastly, working capital depends on the short-term financial wealth of the firm i.e. current assets and liabilities. It is worth noting that all rates applied during the forecast are nominal of which may only be adjusted appropriately during valuation. Both firms' FCFs will be projected over a period of five years, given their rapid growth and transition to maturity.

The Telecommunications, Technology and Media (TTM) Industry has seen rapid technological improvements regardless of the market being in a boom or recession. The industry has experienced improvements such as Over-The-Top Content (OTT) which is the provision of video and audio services via broadband without a multiple system operator controlling the distribution of contents. This is

slowly crowding-out the traditional television and for Europe, it is expected that the take up OTT will be at a slower rate, only representing 10% of households until 2017 compared to the United States' 37.4%. This mainly due to a lower tendency to pay for video services as much of it is freely available in high quality by public broadcasters. Additionally, digital services will keep dominating analogue services therefore resulting in a continuous decline in analogue cable provision (Deloitte, 2013).

4.1. Liberty Global Inc. Performance Forecast

Liberty Global Inc. as mentioned earlier, is a highly acquisitive firm in the industry with M&A deals ranging from 2-3 a year since its establishment and its prime market of focus being that of Europe, which accounts for 90% of its revenue. Despite tight regulations, LGI has, over time claimed a large footprint across countries and regions of operation making it one of the largest cable service providers globally and also dubbed the 'King of cable'. Given this, the firm overall keeps expanding and improving its services and products amidst strong competition in countries/regions of operation. Historical financials show an upward trend in organic RGU additions and revenue both as a result of positive impact of acquisitions off-setting the negative impact of forex from transactions including deals and security issues across countries.

The firm reports its Revenue generated from its products in four segments (as shown in *Figure 1* in the previous chapter) which are, in descending order of weight namely; UPC, Telenet, VTR and Corporate and other which includes less significant operating segments such as Puerto Rico and its corporate category. Operating expenses can also be spread by segments. However, SG&A, Depreciation and Amortization, and other expenses are reported at consolidated level. Although stock-based compensation is reported as an operating expense, it isn't included in the analysis of performance of LGI's reportable segments.

Looking forward, it is expected that organic growth continues mainly from organic increases in digital cable, broadband internet and telephony RGUs while a continuous decline in analogue cable RGUs as a result of demand for improved and upgraded technology and efficiency. The increase in RGU over time has been mainly due to an improvement in RGU mix, attributable to higher proportions of digital cable,

broadband internet and telephony RGU (see appendix). Assuming this mix is rebalanced each year, LGI's prospects may be fulfilled. On the other hand, the Average Revenue Per Unit (ARPU) is expected to remain relatively unchanged which will be primarily driven by growth in operations in the most prominent countries under UPC segment; Germany, Switzerland, Belgium and the Netherlands. In order to maintain competitiveness, LGI will continue launching its newly announced product Horizon TV across countries of operation of which to date, is running in the Netherlands and Switzerland. This may mean more property and equipment additions although overall, it is expected that the total of these additions relative to revenue will continue to decline (Liberty Global, 2012a).

Revenue Forecast

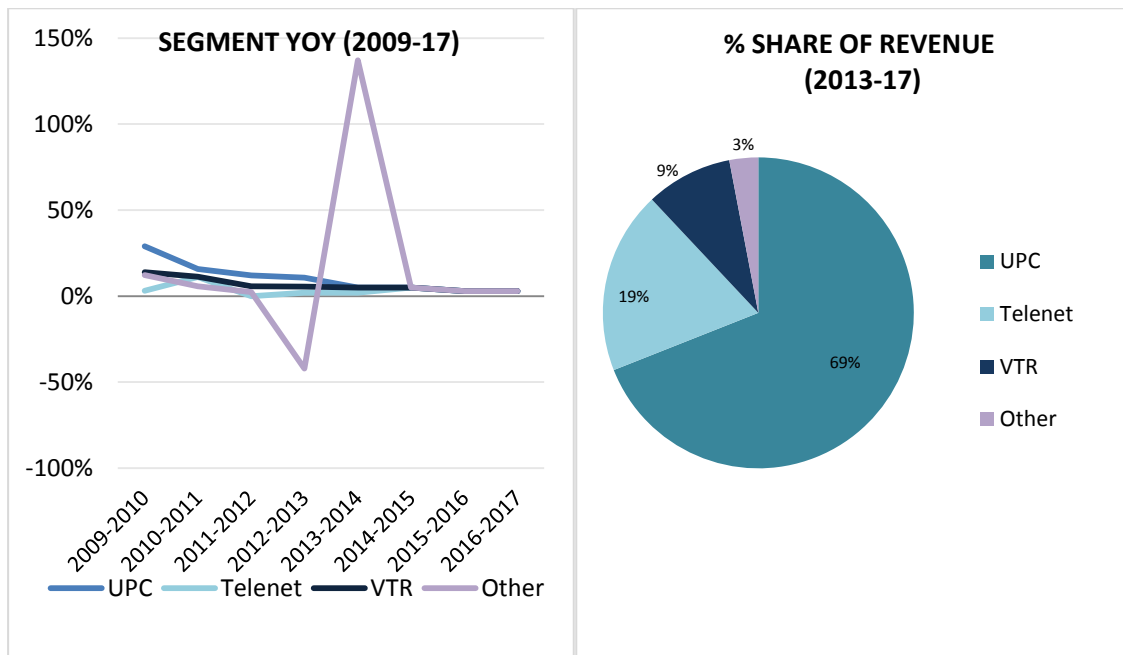
Liberty Global's yoy revenue growth rate has been declining over time by roughly 6% from 2009 to date. This simply depicts the firm's transition to maturity at which it should end up with stable growth. The revenue forecast for the firm is assumed to fall by 2% from 2012 year by year, until a stable year-over-year growth rate of 3% is attained from the year 2016 onward, resulting in a CAGR of 4% over the 5 year trend, assuming operations follow perpetual growth which slightly outperforms the European industry's average revenue CAGR of 2.85% (PwC, 2012). The assumption follows expectations that organic RGU additions increase and ARPU remains unchanged relatively while incorporating a decline in demand for analogue cable and pay TV which will be offset by the new product and as before, the positive impact of acquisitions.

All segments are expected to grow in the same pattern, maintaining their position relative to total revenue. Telenet since recording insignificant growth between 2011 and 2012 will continue grow at a rate of 2% until the year 2014 as the increase in the mobile business will offset the decline in analogue cable and fixed line telephony services. In 2015 it is likely to increase to 5% as a result of coverage and large market share. The yoy growth from 2016 thereafter will fall in line with that of the revenue at 3%. The firm's most powerful sector, UPC, with the current regulations expected to loosen by the end of 2013, is likely to maintain its position with the largest RGU. The segments will eventually converge to a 3% yoy following the pattern of consolidated

revenue as their share is assumed the same over the 5 year trend with prospects of maintained or progressive operations.

On the contrary, the 'other' segment which includes operations in Puerto Rico has had a downturn at the beginning of the projection as management prospects suggest it will contribute a smaller percentage to consolidated revenue, about half less than earlier (Liberty Global, 2012). The prospects on Puerto Rico follow the facts that the mobile operations haven't been significantly competitive on the market historically however, no plans have been disclosed on discontinuing operations. The growth results in CAGR of 4% for UPC, Telenet and VTR over the projected period while the 'other' segment has a CAGR of 27%.

Figure 11. LGI Segment yoy and Percentage Share of Revenue



Source: based on LGI Management's Prospects and PWC Industry Outlook, 2012.

The launch of *Horizon TV* is expected to increase revenue given the progressive increase in price over the next two years. It is highly unlikely that ARPU's will be lost as a result of the price increase because of the new product mix that is available and according to Deloitte's industry and sector review (2013), consumers in the current age on average consider cable and mobile telephony a necessity with 24% of European spending being towards TV subscription and licence fees. The growth of internet use is currently driven by increased consumer use of smart phones and tablets.

Liberty Global's current acquisition of a 15% stake in Ziggo, the Netherlands largest cable operator, guarantees a surge in UPC revenue in the following years. LGI's UPC in the Netherlands is already a highly recognized provider and this will therefore increase its current performance and market share in the country, and overall, the firm's. However, it is worth noting that since UPC is second to Ziggo, higher stake in Ziggo by LGI may result in anti-trust issues with the Dutch government. UPC's yoy growth like the other segments will converge to the revenue growth of 3%. Lastly VTR is expected to lose its position relative to total revenue by 1% compared to the prior year as a result of less demand for fixed telephony and analogue cable and the negative impact of a lower volume of calls subject to usage-based charges.

Operating Expenses Forecast

Liberty Global's market position in most countries of operation requires subscriber promotions, programming and professional fees. Its cost of sales has historically declined minimally with the prior year-over-year rate of 7%. The decrease in demand for analogue cable guarantees slight cost savings yet programming costs which form a large part of the CoGS are likely to increase across the main three Segments; UPC, Telenet and VTR. This then results in CoGS as a percentage of revenue over the next years, increasing by 3% from 35% to 36%, a relative ratio which is assumed constant over the projected years as the expected price increase to subscribers in most of LGI's operations will compensate the cost increases. These price increase assumptions incorporate the launch of *Horizon TV*, growth in digital video services and mobile business distribution.

Costs are subject to inflationary pressures with respect to labor and other operational costs incurred during roll out of projects and foreign currency exchange risk with respect to costs and expenses that are denominated in currencies other than the respective functional currencies of operating segments (non-functional currency expenses). Labor costs in CoGS include temporary hire of labor for installation, maintenance and programming. This will result in a projected period CoGS CAGR of 3% compared to the 11% CAGR it had over the prior four years.

On the other hand, SG&A are likely to be maintained as before taking up 19% of revenue, considering the fact that historically, the ratio has been the same. Similar to the firm's CoGS, SG&A are also subject to inflationary pressures with respect to labor and other costs and foreign currency exchange risk. Labor costs here include the firm's 22,000 employees in its respective subsidiaries.

Capex and Depreciation Forecast

The Telecommunications, Technology and Media (TTM) Industry is capital intensive therefore large capital expenditures are expected every few years in order to maintain competitiveness and customer base. Liberty Global's initiatives will result in significant additions to its property and equipment with expectations of a decline in expenditure as a percentage of revenue over time. Forecasts show the year 2013 maintaining the prior year's CapEx to Revenue ratio of 20% in order to continue the current expansion in its target areas of operation. Thereafter, CapEx is to decrease over the next four years resulting in a CapEx to Revenue ratio of 18% by 2017 and a CAGR of 2% compared to that of 5.8% over the assessed historic trend.

Depreciation and amortization as a result, are to increase in line with property and equipment additions therefore taking up 18% of revenue in the first two years, and thereafter, 17%. Taking into account some of the property expected to fully depreciate during the forecast period. A business-line tailored CapEx benchmark was made collecting sector information matching Liberty Global's operations and thereafter, taking the weights and summing the corresponding ratios. This resulted in a benchmark ratio of 107% for LGI. While projections fall in line with the benchmark, the ratio increases as the years go by leaving 2017 exceeding the industry benchmark with a ratio of 160%. This is probably a result of most of the property being fully depreciated by then, leaving the capex-depreciation ratio higher.

Operating Margin and Interest Expense Forecast

Liberty Global's operating margin has, in the last two years, been at a constant rate of 20% after increasing from 15% in 2009 to 18% in 2010, this is simply due to similar operating costs relative to revenue. The forecasts however, show growth given the

revenue growth and a slight decrease in costs. The operating margins are then seen to increase in absolute terms by roughly 3% a year through 2016 and the absolute increase value doubling in 2017 yielding an operating margin of 36%.

Liberty Global's interest expense in the previous year was high as explained earlier, due to debt-funding to close a deal. This left higher outstanding debt increasing the interest expense by 24.1% with FX effects excluded. It is expected that interest expenses reduce over time with forecasts showing reduction from 2012's 16% of revenue, to 14% at the end of the forecast period. Historically, as stated by the firm, the weighted average of cost of debt has reduced (Liberty Global, 2012); yet expenses highly depend on outstanding debt and new borrowings with higher interest rates. Liberty Global's borrowings are made at subsidiary level with different ratings and therefore, to obtain a consolidated cost of debt financing, a weighted average has to be taken. The weighted average cost of debt used for valuation will be 6% (or 5.99% to be precise) (Liberty Global, 2012a).

Net Income and tax expenses

Historically, Liberty Global's net income has been negative or close to the industry median of about \$300 yet far from the average of \$2,100, most of which has been a result of gains from discontinued operations. The forecast assumes no operations are to be discontinued over the period of projection therefore all earnings will be generated solely after tax. The table below shows the net income projections:

Table 1. Liberty Global Historical Net Income and Projections (2013-2017)

Historical (in millions)				Forecast (in millions)						
2009	2010	2011	2012	2013	2014	2015	2016	2017	CAGR	Industry Av.
-\$412.1	\$388.2	-\$772.7	\$322.8	\$8.4	\$357	\$698	\$1048	\$1,725	280%	\$2,182

Source: Liberty Global, 2009-2012; Projections based on available data, 2013-2017.

Earnings before tax in the projected years are all seen high enough to pay taxes of a blended tax rate of 26.67% applied to its consolidated income as given in the firm's *Unaudited Prospective Financial Information* (Liberty Global, 2012b). Liberty Global's income tax expenses are liable to the US as it is a US corporation. Its worldwide effective tax rate is reduced under a provision in US tax law that defers the imposition

of US tax on certain foreign active income until that income is repatriated to the United States. However, the tax benefits and expenses, will also use the abovementioned rate in order to incorporate any benefits from operations in other countries, assuming the given tax rate is the firm's estimated worldwide effective tax rate.

Net Working Capital (NWC)

To obtain the forecasted NWC, the first assumption was that of no deferred taxes as earnings before tax are considerably high enough to afford the expenses. Accounts receivable were projected on the basis as percentage of revenue while other assets were projected based on their historical trend. Accounts payable were forecasted on the basis as percentage of CoGS while accrued expenses as percentage of revenue. The current position of long-term debt and capital lease were already given in by the firm's report until 2017 thereafter. Other current liabilities were set to zero as the trend was downward while the unearned revenue was given a downward growth rate approaching zero, as percentage of revenue. This given, the networking capital was obtained as the difference between current assets and current liabilities, less cash.

4.1.1. Financial Leverage and cost of capital

Liberty Global's debt-to-capital ratio as mentioned earlier was extremely high and the highest compared to past years. The aim to decrease the ratio to 60% is incorporated in the valuation given the firm's operating cash flows. Liberty Global's accretive acquisition strategies, ability to generate cash and its interest coverage of 2.99 however earn it the power to borrow to finance its expansion initiatives. The cost of debt as mentioned earlier is 5.99% and Liberty Global's S&P 500 credit rating is B⁺(Positive), giving it a probability of default of 5.5%.

Using CAPM to estimate the cost of capital, the risk-free rate used is an average of historical yield from 2007 on the yield of the US 10-year T Bond of 2.83%. The risk-free rate is estimated in such a manner given the newly adopted volatility of securities making bonds and T-Bills not 100% risk-free as most prior literature suggested; therefore using a historical average counting ten years back from the end of the

projected period, 2017. The equity risk premium used, as concluded in the literature review is obtained using historical data of over a century from Credit Suisse and is currently at 5.30%. *Table 2* shows the parameters used in the standalone valuation of LGI.

Table 2. Estimation of LGI’s Valuation Parameters

Parameters	Using Peers for Industry Beta Estimation	Using Damodaran’s Industry Beta
β^u	0.45	0.96
B^L	1.13	1.76
r_f	2.83%	2.83%
$(r_m - r_f)$	5.30%	5.30%
k_A	5%	8%
k_E	8.8%	12.2%
K_D	6%	6%
$WACC_{LGI}$	6.2%	7.5%
Effective tax rate	26.67%	26.67%
Debt target ratio	60%	60%

Source: Valuation based on Projections using Firm’s data Liberty, 2012b; Goldman Sachs, 2013.

The unlevered beta when obtained using the top five comparable and tailored firms, done by obtaining the equity betas from Reuters, converting them to unlevered betas using their respective financial risks i.e. debt-to-equity ratio as shown in the Literature Review, and finally obtaining the median as suggested by Koeller et al (2010) and re-levering it using the target debt-to-equity ratio unfortunately results in an unlevered beta of 0.45, a little too low and unreliable, despite peer firms in the industry being highly leveraged. To avoid any further complexity, an industry beta of 0.96 was used for estimation of cost of capital, obtained from Damodaran’s database (2012).

Liberty Global’s beta even with a rebalanced capital structure is higher than 1 yet better than the earlier ratio which would give an incredible beta of 9.25. Using the unlevered beta yields a cost of assets (or unlevered equity) of 8% and a levered cost of equity of 12.2%, while the WACC is 7.5%. However, since the relative debt levels are uncertain, the method of valuation to be used will be the APV method.

4.1.2. Valuation Results

Using the APV method as per Literature review, the forecasted base-case cash flows are discounted using the cost of assets and an assumed perpetuity growth of cash flows in line with the revenue at 3% in order to have a terminal value, yielding the unlevered value of LGI of \$69.8 billion implying a share price of \$124.2 as of Monday 29th of April, 2013. Given the different price ranges and actual proportion of shares outstanding of the three stock classes, the abovementioned implied share price simply assumes all share classes are priced the same. It is worth noting however that by the end of the projection period, it is likely that shares LBTYA and LBTYB actually achieve a target price between \$110-120 while LBTYK around \$110 provided that the firm maintains its operations with expansions where necessary and continues its repurchase program.

The second part of APV valuation involves interest tax shields which are calculated using the effective tax rate, cost of debt and LGI's long-term debt (as it has no short-term debt) projected by dividing the projected interest expenses by the weighted cost of debt, net of "current portion of long-term debt". The interest tax shields are too, assumed to grow in perpetuity after 2017 at 3%, slightly above the industry's CAGR, so that the company is assumed to be in a steady state thereafter. This yields the present value of interest tax shields of \$12.46 billion. However to be more precise, as suggested by Damadoran (2012) the interest tax shield should be adjusted by the firm's corresponding probability of default. Given this, the present value of tax shields is multiplied by $(1-0.055)$ giving the adjusted present value of tax shields of \$11.77 billion.

Lastly, all financing effects should be incorporated. This means that since Liberty Global is a highly leveraged firm, costs of financial distress are of relevance in valuation especially considering its high probability of default ($\pi_{default}$). The cost of distress is calculated using the average industry cost of distress (or sector cost) once again tailored to its business line yielding about 108% of its unlevered value. This falls in line with the fact that assuming the firm faced bankruptcy, most of its assets would be highly illiquid as well as subscriber credibility on which firms of this kind solely depend. Collectively, the cost of financial distress is derived from:

$$CFD = \text{Sector Cost}(\%) * \pi_{\text{default}} * \text{Value of firm}$$

Collectively, the value of Liberty Global is \$80.77 billion, which shows the firm's potential to almost double its Enterprise Value in 5 years' time given that its Enterprise Value as at year end of 2012 was about \$44 billion.

Although the WACC valuation isn't considered in this work, the value obtained using the firm's target ratios is \$76.4 billion, a value which can be explained by the fact that Liberty Global's debt levels are uncertain considering its acquisitive nature as well as the heterogeneous levels of indebtedness across its subsidiaries. Additionally, repurchasing of shares may not necessarily reduce the ratio to that of its target therefore, once again proving that for a firm of such nature, the APV method may be a more precise method.

4.1.3. Sensitivity Analysis

The values given are a rough estimate and the firm given its drivers may either yield values lower or higher than that of the base case shown in the standalone valuation results, taking note that only the APV method is considered. The TMT industry in Europe is slowly gaining competition internally across European peers with Liberty Global's main competitors being Eutelsat, Kabel Deutschland, SES and Telekom. The firm's mobile telephony is still growing and provided the competition at hand, Liberty Global's innovation in this sub-sector may determine the rate at which the firm may eventually grow.

On the other hand, given the firm's many subsidiaries, it faces the risk of fluctuations in foreign currency in markets of operation, strict regulation policies which in some countries of operation constrain it from having a larger market share and lastly, adverse tax consequences. Although most of these risk factors are beyond this valuation, they are, in a way incorporated in the terminal growth assumption. For example, having higher exposure to these risk factors may result in a plunge in the firm's operations therefore overall having a lower consolidated growth rate. The assumption follows different terminal growth rates, the impact it may have on the Enterprise Value, value of equity, as well as the implied price assuming the number of

shares outstanding are as at 29th of April, 2013. *Table 3* below shows the sensitivity of the values given the different growth rates.

Table 3. Sensitivity to Terminal Growth-LGI

Terminal Growth Rate	Implied Share Price	All Equity Value	Value of the Firm
1%	\$93.05	\$52,267.50	\$59,371.06
2%	\$105.99	\$59,537.22	\$68,095.47
3%*	\$124.20	\$69,763.33	\$80,770.26
4%	\$151.69	\$85,209.49	\$101,181.73
5%	\$198.04	\$111,242.46	\$142,437.74

*Base Case

As seen above, provided the firm's operations are highly exposed to any of the abovementioned factors, the firm may result in lower growth rates i.e. below 3% therefore yielding lower values. On the other hand, if the firm's improves its operations in order to complement or outperform the risks at hand, higher values may be achieved with a greater potential for shareholders' benefits being immensely maximized.

Provided the acquisitive nature of the firm, debt levels are vital in the valuation as the firm's nature makes it highly leveraged. This given and considering the mode of valuation, interest tax shields if given interest rates will be higher therefore leaving the firm with a higher value when the debt financing effects are added to the all-equity value as shown in *Table 4*.

Table 4. Sensitivity to Interest Rates-LGI

Cost of Debt	Interest Tax Shields	Enterprise Value
5%	\$15,416.11	\$83,564.16
5.5%	\$13,625.62	\$8,1872.14
6%*	\$12,459.61	\$80,770.26
6.5%	\$11,599.43	\$79,957.39
7%	\$10,974.67	\$79,367.00

*Base Case

4.2. Virgin Media Inc. Performance Forecast

Virgin Media's up-to-date services earn it the title of second-largest service provider in the UK. Its hi-tech broadband internet, cable and telephony products with continuous improvement yield an upward trend in RGU organic additions, generating

high revenue year by year. The firm's reportable segments- Consumer and Business have overtime, grown yoy with an increase in demand from the business segment. Virgin Media's primary asset is its cable network which is shared by its segments. The firm's assets are reviewed on a consolidated basis therefore the cost of operating its network, depreciation, amortization, and goodwill and intangible asset impairments are not reported by segment.

Financials over the 4-year trend depict sustainable growth with a stable decline in costs year-over-year. The firm however expects increase in costs given the merger at hand, as a result of change in capital structure, which may lead to additional charges, an increase in administrative costs, losses on extinguishment of debt, gains and losses on derivative instruments, interest expense and stock-based compensation expense. This will not be considered in the stand-alone valuation (Virgin Media, 2012a).

Virgin Media's business strategy and strong corporate culture have earned it sustainable growth over the past four years. Strategies such as revenue growth through customer additions, product cross sell, tier mix and selective price increases have led to Consumer segment revenues increasing by 2% yoy. Although inbound mobile revenue actually declined due to the step down in regulated mobile termination rates, it was offset by the positive impact of an improving customer mix.

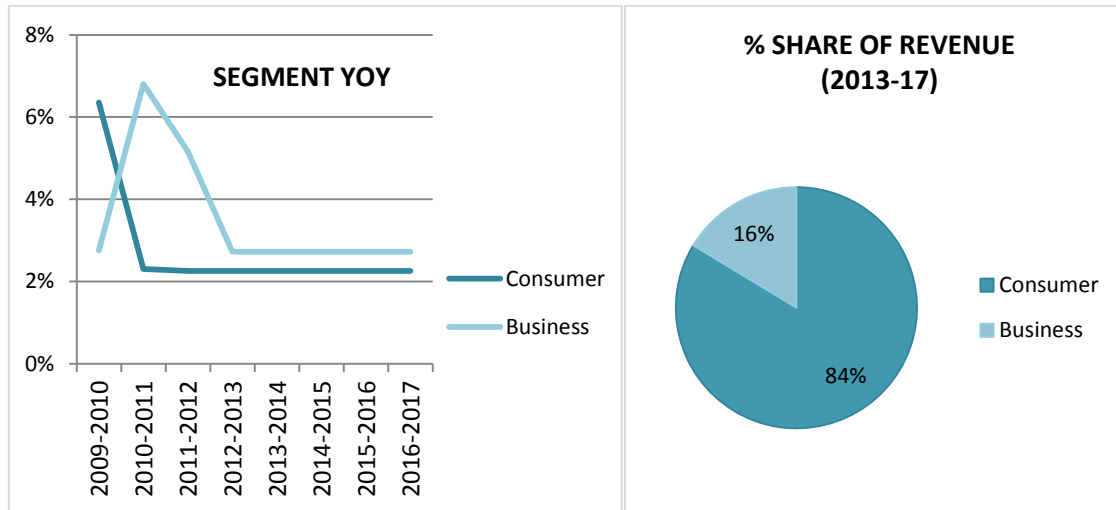
The firm's *TiVo* service rollout and broadband speed upgrade have accounted for the firm's property and equipment additions through investment in network infrastructure resulting in overall capital expenditure relative to revenue in an upward pattern over the 4-year trend.

Revenue Forecast

Virgin Media's strategy of revenue growth through customer additions, product cross sell, tier mix and selective price increases has over time led to rising Consumer segment revenue. On the other hand, demand for superfast broadband and *TiVo* remain the highest revenue drivers and are expected to maintain their ARPU. Historical data shows that consumers migrate to upgrades within Virgin Media's services. The

Business segment has in the prior year, depicted rapid growth and these developments stir expectations of sustained growth in the future.

Figure 12. VMED Sector yoy and Percentage Share of Revenue



Source: based on VMED Management’s Prospect, PwC and Goldman Sachs Industry Outlook , 2012.

The forecasts show revenue growth at a sustained rate of 3% with CAGR of 2.2%, over the projected five years. The UK sector CAGR is however, at 3.10% making Virgin Media’s growth a little below the expected rate. The assumed steady growth follows the prior three years which have maintained a year-over-year rate of 3% despite the economic downturn.

Operating expenses Forecast

Virgin Media’s CoGS historically ranged between 1.5% to 3% yoy making the forecast based on the assumption that the CoGS as a percentage of revenue will be stable at 35%, dropping from 40% of the prior year with a CAGR of 2.2%. As expected in the industry, technology upgrade has overtime continued to drive out older versions with fixed line telephony being one of them. With this at hand, this implies cost savings to some level yet upgrade of current product mix and increase in television customers’ demand for TiVo call for an increase in costs.

The SG&A costs are expected to maintain their historical position as a percentage of revenue of 20% therefore growing in a similar pattern as revenue. As the prior year has

had high advertising costs, it is expected that these costs are lower from the year 2013 onwards until another product launch.

Capex and Depreciation Forecast

As with LGI, Virgin Media faces capital intensity and aims to minimize it as much as possible. The roll out of the *TiVo* Pay-TV will keep CapEx in 2013 at 17% of revenue and will decline over time ending up with 15% of revenue in years 2016 and 2017.

Depreciation on the other hand will increase in line with CapEx as net property and equipment additions decline yoy by -2%. Virgin Media's CapEx-to-depreciation ratio is below the industry ratio, ranging between 66%-90% throughout the projection period.

Operating Margin and Interest Expense Forecast

Virgin Media's operating margin has increased at a low rate in prior years probably as a result of higher operating costs. However, the decline in costs shows an absolute yoy increase of 2% resulting in a margin of 29% in the year 2017.

Interest expenses are likely to decline as the firm has focused on reducing the expenses as well as optimizing its capital structure. This said, interest expenses have been projected to grow (decline) by a yoy of -1% with a CARG of -0.4%, resulting in a decline as percentage of revenue from 2012's 10%, to 8% at the end of the period of projection. Interest expenses are made with a weighted average cost of debt of 6.83%.

Net Income and tax expenses

The projection of cash flows leading to net income assumes no discontinuation of operations. Virgin Media's net income has been positive since 2011 with 2012 being the highest as a result of deferred taxes. The carry-over leaves 2013 with net income above the industry's average, while the following years have normal net income without any additions and lie below the industry average. The CAGR is probably negative as a result of Virgin Media's deferred taxes.

Table 5. Virgin Media's Projected Net Income

Historical (in millions)				Forecast (in millions)						
2009	2010	2011	2012	2013	2014	2015	2016	2017	CAGR	Industry
-£357.8	-£141.4	£75.9	£2,853	£2,331	£485.2	£663	£825	£990.6	-19.3%	£1,409

Source: Virgin Media, 2009-2012; Projections based on available data, 2013-2017.

The tax expenses on the other hand are assumed to return to normal as a result of increase in revenue and decrease in operating and interest expenses. The cash flows are taxed at 23% which is the expected revised tax rate in the UK for 2013, 21% for 2014 and 20% 2015 onward. It is expected that taxes are to decrease from 23% to 20% given the respective years (Virgin Media, 2012).

4.2.1. Financial leverage and cost of capital

Virgin Media's debt-capital-ratio has been slightly higher than the industry average and the target ratio is therefore 40%. The firm has Standard & Poor's credit rating of BB (Positive) with the probability of default being 4%. To compute the costs of capital, Credit Suisse's historical equity risk premium for the UK is 4.30% and a risk-free asset of an average yield of 1.85% since 2007 of the 10-year UK Government bond is used. The same method comparables are used to compute the unlevered beta, which is 0.45 and re-levering it gives a levered beta of 0.9. Once again, Damodaran's industry beta of 0.96 is used. Using the betas, the unlevered cost of equity (or cost of assets) is 6% and the levered is 7%, while the WACC is 6.4%.

4.2.2. Valuation Results

As in the Literature Review, there is a currency mismatch and therefore to understand better, cash flows of both stand-alone valuations should be in the same currency. A forecast of exchange rates over the projection period needs to be made. To do so, the following method will be used from the literature review.

$$E(S_{t+1}) = S_t \times \left[\frac{(1 + R_{\text{home}})}{(1 + R_{\text{foreign}})} \right]^n$$

Where; $E(S_{t+1})$ is the expected exchange rate in the next period(s), S_t the spot rate, n the number of years forward and $\frac{(1+R_{home})}{(1+R_{foreign})}$ is the factor that determines the annual change in the exchange rate.

The spot rate of the dollar/pound (\$/£) as at 29th April, 2013 is 1.5483. The differential factor $\frac{(1+R_{home})}{(1+R_{foreign})}$ is that between long term riskless interest rates of which in this case, are the risk-free rates. The pound sterling dominated cash flows will be changed to dollars therefore the predicted rates are as follows:

Table 6. Exchange Rate Forecast

\$/£ Exchange rate Forecast					Differential factor	Spot rate
2013	2014	2015	2016	2017	1.01	1.5483
1.56	1.58	1.59	1.61	1.62		

The predicted rates prove the prospects of the pound growing stronger in the next five years by PwC (PwC, 2013). The FCFs are then obtained in US\$ and therefore, the cost of capital to be used will be the US \$ dominated cost of assets when using the APV method. This gives an all-equity present value of \$32.4 billion.

The interest tax shields are first obtained in the pound-sterling currency and are thereafter converted into dollars after the terminal value is obtained. As before, the present value of tax shields should be adjusted and collecting all three, yields the final value of Virgin Media Inc. in US dollars of \$34.9 billion, implying a price of \$77.4, once again a value that is likely to be realized if operations and management's strategies and innovation are maintained or improved. This given VMED's share price which was topped approximately \$50 in the first quarter of 2013.

The WACC valuation gave an Enterprise Value of \$45 billion, a value that was obtained in pound-sterling cash flows and rates thereafter converted to USD. The large difference follows the firm's low WACC and once again, it could be that the firm may not achieve the target ratio as expected while another major difference lies in decreasing interest tax shields as a result of taxes lowering from 2013 onwards

whereas the WACC valuation only incorporates the 2013 tax rate. This then proves how easily the WACC valuation may be misleading if certain details are not incorporated.

4.2.3. Sensitivity Analysis

Virgin Media like Liberty Global operates in a highly competitive market with main competitors being British Sky Broadcasting Group PLC., BT Group PLC. and TalkTalk Telecom Group PLC. The intense competition which involves unpredictable rapid changes in technology may have adverse effects on the firm's revenue while increasing costs and reducing the firm's ARPU. On the other hand, the fixed line telephony provided the vast demand for mobile telephony may have no chances of improvement considering the fact that historically in the industry overall, this product has had negative growth. Other risk factors include foreign exchange risk as the firm pays part of its interest and principal obligations dominated in US dollars and Euros. The aforementioned factors may have an impact on the firm's overall growth just as its counterpart Liberty Global. Therefore, sensitivity to changes in the terminal growth and its impact on share price is assessed as shown below.

Table 7. Sensitivity to Terminal Growth- VMED

Terminal Growth Rate	Implied Share Price	All Equity Value	Value of the Firm
1%	\$59.38	\$24,881.10	\$27,401.92
2%	\$66.86	\$28,017.15	\$30,512.89
3%*	\$77.39	\$32,428.54	\$34,888.99
4%	\$93.29	\$39,091.79	\$41,498.93
5%	\$120.09	\$50,322.04	\$52,639.33

*Base Case

Provided that Virgin Media maintains or improves its current operations, growth prospects may be higher than that of the standalone valuation yielding higher net worth for existing shareholders. However, if the firm slacks in the current competitive environment or has no ways to shield against risk factors such as those of currency, then the firm will have a downward growth therefore leaving shareholders with less.

4.3. Decision Based on Standalone Valuations

It is clear from both valuations that the firms are likely to add value to shareholders' wealth therefore both can be recommended as 'Buy' or 'Hold' depending on the behavior of the firms' main drivers provided the risk factors that they are exposed to. However, the sensitivity analyses suggest that as long as terminal growth is positive for both firms, there's a probability of maximization of shareholders' net worth, thus suggesting 'Buy'.

Of the two firms, Liberty Global is more likely to have an unstable leverage level therefore this may affect the firm's value. As the effects of changes in leverage are only seen in the present value of interest tax shields in APV valuation, it may suggest that the more interest the firm has, the higher the value. However, factors such as the likeliness of financial distress may increase as well as lower flexibility, therefore harming shareholders' wealth.

5. Valuation of the Merged Firm

Using the standalone values of the firm, an idea is given of what the merged firm would currently be worth given the 5-year forecast, without synergy. As concluded in the standalone valuation, the values obtained from the APV valuation are used for the rest of the assessment. Since both firms have similar operations and report their revenues at consolidated level and not by product, computation may be done without any complex approaches and assumptions. As per literature, to obtain the value of synergy, the merged firm value is estimated and thereafter, a value incorporating potential synergy is computed. The value of synergy is then the difference between the two (Damodaran, 2005).

Liberty Global's second-time negotiation with Virgin Media ascertains that prior to the firm's assessment, Virgin Media proves to be of more value in the long run than it actually is currently. Considering Liberty Global's current footprint, adding Virgin Media to its existing operations would be beneficial considering the rationale of the merger.

5.1. Valuation without Synergy

The merged firm is value obtained from the sum of the standalone firm values (Damodaran, 2005). Summing the financials in this case yields a combined value of \$115.7 billion (see appendix for a summary of the sum of financials). An alternative way can be obtained using the sum of FCFs of the two firms dominated in the acquirer's currency discounted using the option of applying the acquiring firm's cost of assets. Likewise, the present value of interest tax shields are summed and are discounted using a weighted average cost of debt. The weighted average cost of debt is computed by applying the debt weights of the merged firm to the respective costs of debt.

The re-computation of the firm's value involving the discounting of the summed FCFs is a way to check the feasibility of the value obtained by simply summing the standalone values. The cost of assets used for the merged firm is equivalent to that of Liberty Global as the standalone APV valuations of both firms were dominated in Liberty Global's home currency (US dollar) taking into account inflationary measures at

conversion of the pound sterling to dollars, using the forecasted exchange rates. However, the cost of debt as it follows different conditions for each firm is a sensitive factor and as mentioned above, should be the weighted average of the standalone rates. Table 8 shows the variables used in the valuation of the merger.

Table 8. Merged Firm Costs of Capital and parameters

β^u	0.96
r_f	2.83%
k_a	8%
Debt weight _{LGI}	0.84
Debt weight _{VMED}	0.16
k_d	6.13%
$g_{\text{long-term}}$	3%

This re-computation yields a value of \$115.8 billion with the slight difference mainly attributed to the default rate applied to the adjusted present value of interest tax shields. It is not possible to give an estimate of the implied target price as currently, part of the deal will be made using shares. It is worth noting that all values are dominated in the acquirer's currency (US dollar) throughout this section.

5.2. Valuation with synergy

For every deal made, there is an expected positive impact on the value of the combined firms which should be realized. This as mentioned in the literature review is known as synergy which, to acquirers is worth the handsome premiums they get to pay. Damodaran (2005) defines synergy as the 'additional value that is generated by combining two firms, creating opportunities that wouldn't have been available to these firms operating independently'.

Synergies are further classified into two: operational and financial. Operational synergy is usually in the form of economies of scale captured from the merger, therefore resulting in cost efficiency and higher profits. Other forms as per literature are those of market share domination and functional strengths. Financial synergies on

the other hand involve reduced costs of capital, tax benefits, excess cash and debt capacity.

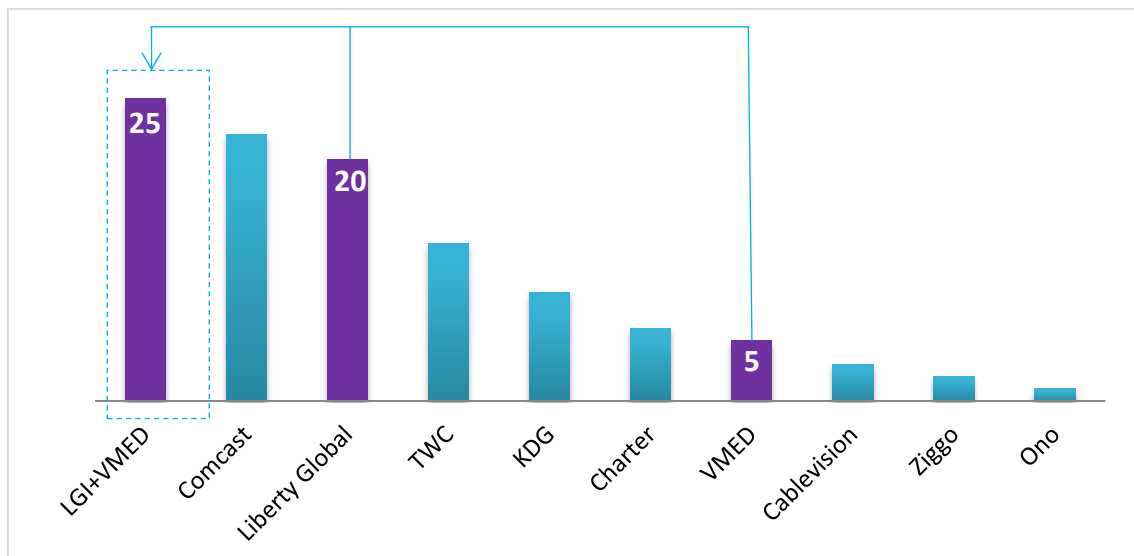
Valuation of synergy like valuation of a merger involves assumptions of future cash flows, incorporating the most favorable conditions given the respective drivers. Therefore, in order to proceed with the valuation, the firms at hand ought to be studied focusing on drivers of potential synergies.

5.2.1. Potential Synergies

The merged firm is likely to be the world's leading broadband communications provider, considering its customer base. This scale advantage shown in *Figure 13* is likely to motivate higher innovation and operating leverage. Also, given the main countries of operation in market share order; UK, Germany, Belgium, Switzerland and Netherlands, their stable economic and regulatory climate guarantee a healthy growth profile. As the merged firm will have its operations in the five strongest markets in Europe among others, the revenue generated by these will account for almost 80% of consolidated revenue.

The firms, given their similar operations when merged are likely to maintain their lead in digital TV experience with *Horizon* and *TiVo*, high speed broadband delivery and compelling bundles. Additionally, Liberty Global and Virgin Media's complementary core strengths promise a well aligned triple play product suite, product roadmap and expertise. Virgin Media's expertise in mobile and B2B (business-to-business) products is likely to improve Liberty Global's businesses in European countries where mobile revenues are generated, with the potential of a Pan-European B2B. All in all, the growth opportunities induced by this merger are expected to impact the merged firm's performance significantly.

Figure 13. Cable operators by customer base (in millions, as at 31st Dec, 2012)



Source: Liberty Global, 2013.

The industry of operation as mentioned earlier is capital intensive therefore, CapEx is high and in order to maintain or improve competitiveness, costs are incurred on a large scale. This means that merging will to some extent yield cost savings in network, IT support and procurement, among other costs of sales.

The on-going deal creates a new holding parent firm, Liberty Global Corporation Limited, re-registered as a UK plc. which will therefore be renamed Liberty Global plc., prior to the completion of the merger. Liberty Global Inc. and Virgin Media Inc. will be subsidiaries of the parent company and Virgin Media will retain its brand name. This given, the difference in marginal taxes between the US and the UK will result in gains to the merged firm given that UK taxes are to be 23%, 21% and eventually 20% while the US marginal tax is 35% and its blended tax rate across subsidiaries is 26.67%. This in itself hence yields slightly higher FCFs, although offset by lower debt tax shields, adds some value to the firm from the supposed 'tax savings'.

5.2.2. Operational Synergy

Revenue Synergy

This is highly indeterminate especially for companies in transition to maturity as it is usually impossible to manipulate revenue generation at no cost. Revenue synergies depend on strategies that can be executed to enhance sales such as new product launches although one has to take into account that such strategies highly depend on consumers' and competitors' reaction especially in the Cable and Telecom industry. The time frame is also important regarding synergies and it is clear that execution of such strategies requires time and costs in order for it to match the supposed market. However, given the customer base as per *Figure 13*, the larger scale if maintained or increased may drive higher revenue generation. Virgin Media's history of annual price increases as well as that of the UPC division of Liberty Global keeping the current customer base constant, assures a level of increase in revenue. Also, currently there has been price inflation especially in the Telecom industry in the UK. As mentioned earlier, since access to cable is considered a necessity for most households and businesses in this age, it is unlikely that many current subscribers will be lost given the quality of the existing and new product mixes.

Cost Synergy

Of all synergies, the most common and likely in most deals, especially of firms with similar operations is that of cost. Cost synergies result from cost savings which increase firm value through increased operating income. Damodaran (2005) gives two possibilities of cost savings; one-time and continuous. The one-time increases cash flow and the present value in a specific period of occurrence while the continuous is across all periods, having a larger impact on firm value, margins and income. In the case of the merged firm (which from now will be referred to as Liberty Global plc.), the gain of specialists in mobile technology and network distribution from Virgin Media, saves the firm as a whole, expenditure on hiring externals to train or work on any projects related to improvement of this product. Unfortunately, CoGS and SG&A are not further broken down in both firm's statements and it is therefore difficult to have a specific portions analyzed. However, a rough estimate of costs incurred on average by

peers from the European industry outlook (Goldman Sachs, 2013) will be applied to the merged firm.

The merger may allow for costs to be spread as merging with Virgin Media would greatly benefit the mobile operations of Liberty Global Inc. as Virgin Media has a credible Mobile Virtual Network Operator (MVNO) which may link the two mobile services providers making it easier to provide services such as 3G and 4G in most of Liberty Global's strictly regulated markets, relieving it of the licensing costs it would have to incur. Local Loop Unbundling (LLU) which allows unbundled access across clients and customers from mobile to the cable network may save the merged firm costs of the fees incurred to provide such services as well as reduce single-play churn. Virgin Media's quad-play bundling if applied to other subsidiaries will lower the customer churn rates that are currently borne by LGI. The Merged firm's CoGS without synergy result in a CAGR of 2.4%, suggesting a 2% decrease for the acquiring firm which has a standalone CAGR of 3% over the projected years. The merged firm's CoGS without synergy has an average CoGS/Revenue ratio of 36% from 2013 through 2017.

Provided the potential cost savings, Liberty Global plc. will follow a 2% decrease in the CoGS/Revenue decrease of 2% therefore resulting in an average ratio of 35% across the forecasted period, making the merged firm's CoGS with synergy have a slightly lower CAGR of 2.06%. This then allows for higher operating income, therefore yielding higher FCFs and increasing firm value when discounted at its respective rate, while keeping the revenue and all other operating expenses constant.

SG&A expenses overall as a percentage of revenue are assumed to remain constant, as for both firms, operations will continue to run as before with reduction in marketing for Virgin Media and a slight increase in that of Liberty Global for the *Horizon* product, therefore offsetting each other. Another reason as to why consolidated SG&A are to remain without a significant change is due to the fact that the merged firm has subsidiaries outside the UK which may also offset the benefit of lower G&A costs in the UK. Employee costs in both firms pre-merger incorporated inflationary pressure as per forecast of inflation in Europe over the next years, as mentioned in the industry

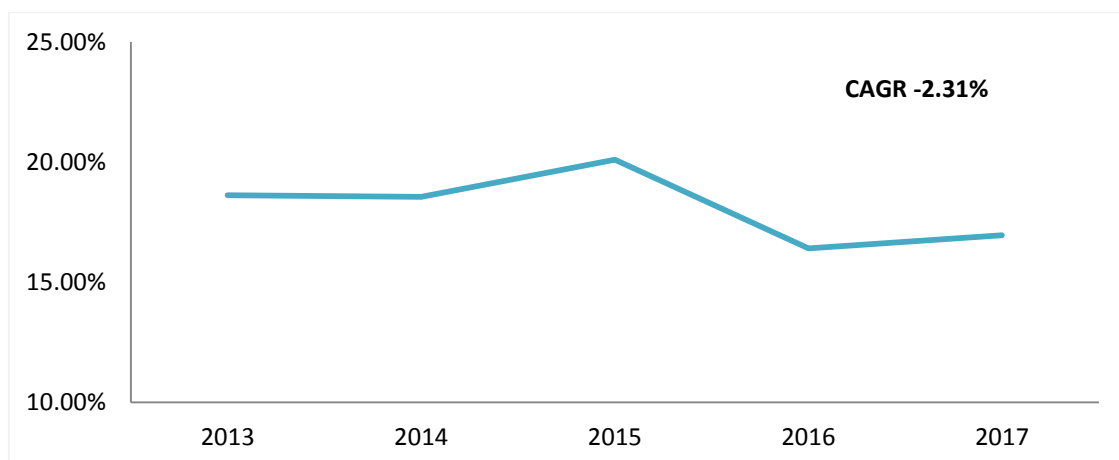
review. These costs may be said to be offset by the on-going and foreseen price increases in products in some subsidiaries.

No announcements were made on any layoffs by both firms post-merger therefore, employee costs under SG&A are assumed to be constant too. The merged firm plans to run both subsidiaries (Liberty Global and Virgin Media) as before with no significant changes in personnel costs, outsourced labor and professional fees. The expenses are spread resulting in SG&A being 19% across the period of projection, as a percentage of Liberty Global plc.'s revenue. This then differs from the stand-alone ratios which were 20% of revenue for Virgin Media and 19% for Liberty Global.

Capital Expenditure Synergy

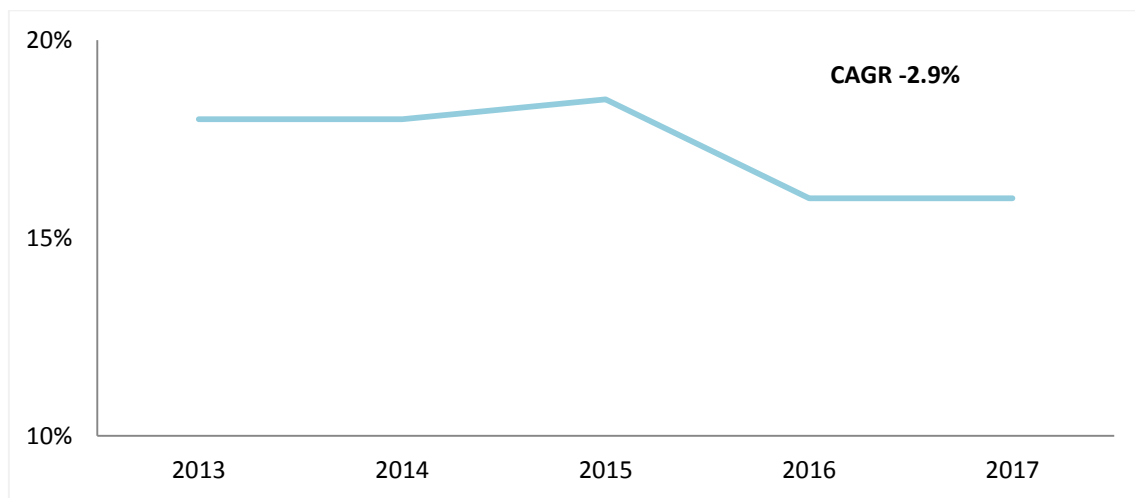
Provided the industry of operation the merger is likely to reduce the rate of the overall firm's property additions. Firstly, considering the current state of Virgin Media's property and equipment, the firm will not need further significant additions as it invested vastly over the past three years making it retain losses ever since. Therefore, capital expenditure savings will be realized. With Virgin Media's up-to-date technological innovations and disciplined approach to CapEx, it is likely that this will be of high benefit to Liberty Global plc., therefore maintaining and possibly improving market share in regions of operation. The merged firm's initial CapEx ranges as follows in *Figure 14*.

Figure 14. Capex/Revenue (Combined firm)



The trend follows an unstable pattern and therefore shows that the spread is uneven and actually converges to the CapEx/Revenue ratio range set by Virgin Media which was between 16% and 17%. In order to improve this and to be consistent with all other assumptions, it will be assumed that yearly, CapEx will reduce converging to the minimum of Virgin Media’s target CapEx/Revenue ratio, which is 16% as shown in *Figure 15*. This results in CapEx decreasing on average by 4% with a CAGR of -2.9% and will in turn induce a reduction in depreciation and amortization while increasing operating income, all other drivers constant.

Figure 15. CaPEX /Revenue (Combined firm Synergy)



5.2.3. Financial synergy

Tax benefits

As mentioned earlier, the relocation to the UK will in itself provide lower tax costs therefore earnings attributable to shareholders will be higher. Virgin Media’s accumulated losses due to massive investments in network infrastructure earned it a pre-tax profit of £261 million in 2012 as a result of being exempt from tax. A further explanation for the tax exemption is that accumulated profits should exceed £261 million in order for it to remit corporate taxes. Given the forecast in this assessment, it is likely that the exemption period may be shorter than proclaimed by most analysts. All in all, this exemption is therefore a short term gain to Liberty Global plc. and may

work in favor of its shareholders' earnings in addition to the lower tax rate incurred under the UK tax regulations.

Cost of Capital

Liberty Global plc.'s cost of debt of 6.13% is estimated to be slightly higher than that of LGI and lower than that of Virgin Media. The firm however, is expected to eventually achieve a debt-to-capital ratio of 57% when the target ratios are merged using a weighted average approach. This therefore means that in the first few years, Liberty Global plc. will still be highly indebted therefore generating high interest tax shields.

Table 9. Computation of cost of capital

	Liberty Global Inc.	Virgin Media Inc.	Liberty Global Plc.
Debt weights	0.84	0.16	1.00
Debt-Capital ratio	93%	54%	86%
Debt-Capital target ratio	60%	40%	57%
β^l	1.56	1.26	1.75
k_e	11%	7%	9%
K_d	5.99%	6.83%	6.13%
WACC with target ratios	6.78%	6.53%	6.74%

The cost of capital computed is 6.74%, higher than Virgin Media's. Nevertheless, the WACC isn't used for the valuation of the firm as the APV is a better approach considering the inconsistency of the capital structure of the firms at hand- mostly, Liberty Global Inc. Both firms aim at similar investment opportunities with Liberty Global being more acquisitive and Virgin Media more extensive. This then shows no chance of significant synergy concerning excess cash as both firms are relatively large and are public.

5.3. Integration and Restructuring Costs

When pricing an acquisition, the valuation must also incorporate cash outflows accompanying the deal as they affect the realization of potential synergies. Deloitte (2013) advises that *'a smooth integration depends on identifying, prioritizing and measuring synergies early in the process.'* Synergy valuation should be assessed with caution as it too incurs costs as the post-merger integration process of the acquired company is what creates value. These costs may include plant decommission costs, severance to be paid to employees, rebranding campaigns, integration costs for different IT systems and retraining of employees (Goedhart, Koller and Wessels, 2010).

5.3.1. Liberty Global Inc.'s past acquisitions

In 2010 Liberty Global's restructuring and integration costs of roughly \$126 million included the acquisition of Germany's second largest cable operator UnityMedia, contractual obligations of satellite capacity of Chellomedia (Liberty Global's distributor of channels and video services), dish-turning and duplicate satellite costs in connection with the migration of operations in the Czech Republic, Hungary and Slovakia to a new satellite post-acquisition and employee severance and termination costs related to reorganization and integration activities, primarily in Europe. The acquisition's consideration totaled approximately \$4.5 billion and the costs represented 2.8% of it. KBW and Aster were acquired in 2011 with considerations of \$4.4 billion and \$785 million respectively with restructuring and integration costs accounting for roughly 1.8% and 1.63% respectively. Reorganization and integration activities were primarily in Europe and Chile. In 2012, costs were incurred related to the acquisition of increase in the market share in Germany of KBW of with employee severance and termination costs related to reorganization and integration activities of roughly 2% of the consideration.

Liberty Global plc. will incur significant, nonrecurring costs associated with accomplishing the merger. The expected costs are nonrecurring advisory, legal and other transaction costs that will be directly associated with the merger which sum up to about \$391 million, representing close to 2% of the consideration of \$24 billion. It is expected that synergies will offset these costs over time. Additional costs may be

incurred to maintain employee morale and retain key employees (Liberty Global, 2013).

In conclusion, it is seen that the prominent and substantial synergies from the merger are from cost, CapEx and tax savings. Cost savings are likely to result from a once-off investment which may include IT upgrade and loops that will realize these synergies. This said, it is likely that the first financial year may experience dis-synergies while incurring these costs. Upon introduction of ULL, high speed broadband and MVNO in the UK, Virgin Media reported a guided and aggregate expenditure net Capex of £760 million (approx. \$1,178 million), which will also be assumed as the integration costs to be possibly incurred by LGI. Because it's uncertain of when exactly these synergies will be realized, it's possible that it may be gradual, year by year as the underlying assumptions all depend on convergence to an optimal ratio. Therefore to be more rational, the present value of the obtained synergies was estimated using the merged firm's cost of capital. The table below summarizes the synergies realized from the valuation which was done using APV.

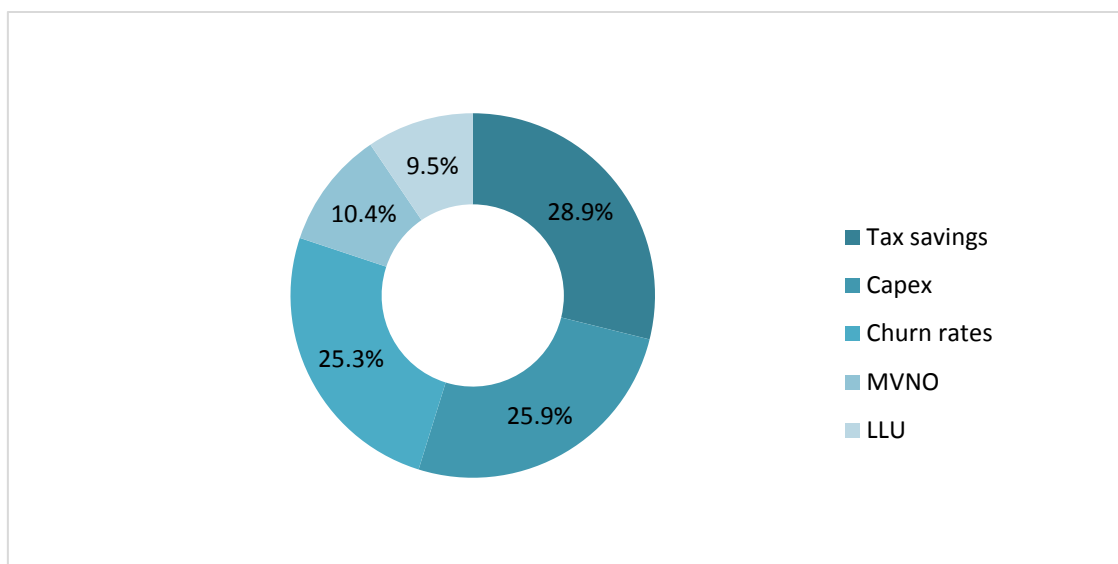
Table 10. Synergy Estimates and Composition in Millions

	EV	EV _{with Synergy}	Synergy Value	PV of Synergy	%
Cost Synergies	115,659.25	118,983.10	3,323.86	2,399.09	45.2%
Tax Synergies	115,659.25	117,782.88	2,123.64	1,532.80	28.9%
Capex Synergies	115,659.25	117,565.79	1906.55	1,376.10	25.9%
Total synergy PV				5,307.99	
Restructuring				(391)	
Integration costs				(1,178)	
Net synergy				3,738.99	

From the table above, it can be seen that the highest synergy will be captured from cost savings while the second highest from the low taxes that Liberty Global plc. will remit. The re-registration of the merged firm from the US to the UK will mechanically be of a certain degree of benefit. The total present value of synergies is about 4.4% of the total firm value. Given this, it's obvious then that the restructuring and integration

costs which represent 6.5% of the purchase price and 30% of the total present value of synergies are to be offset. Cost synergies are to be realized mainly from the bundling services of which Virgin Media is more efficient, having the most up-to-date quad-play in the UK as well as across European peers. The bundling reduces costs of distribution of operations separately, therefore reducing customer churn. The other components of cost synergies include LLU and MVNO as per Goldman Sach's Global Investment Research (2013) which shows that MVNO accounts for about 23% of cost synergies from mergers with firms in the UK, while the LLU accounts for roughly 21%. *Figure 16* below therefore shows a more detailed synergy breakdown.

Figure 16. Synergy Breakdown



5.4. Splitting Synergies

The splitting of synergies should be done in a fair manner as per literature, in relation to the contribution made on the basis of idiosyncratic strength. In the case of Liberty Global plc., of the two subsidiaries, Virgin Media seems to efficiently generate the drivers that realize the synergies at hand compared to Liberty Global Inc. Virgin Media's operational strength in bundling and mobile services if adopted by LGI's subsidiaries will earn them higher gains considering the larger customer base and current churn. Technically, it would be fair for Virgin Media to have a higher share of synergies. However, if measured on the basis of scale, Liberty Global Inc. has the

upper hand in the distribution of the synergies. In this case, Liberty Global Inc. during negotiations already secured negotiation power higher than that of Virgin Media. Based on these ratios, *Table 11* shows the amount given to each firm assuming full integration and restructuring.

Table 11. Net Synergy Distribution

	Liberty Global	Virgin Media
Negotiation Power	0.74	0.26
Net Synergy proportion (\$ million)	2,766.85	972.14
Equity MV (\$ million)	2,210	3,157.60
Net Synergy-Equity ratio	1.25	0.30

The net synergy-equity ratio is higher for Liberty Global considering its debt dominated capital structure. This analytically implies that existing shareholders are to receive 125% of their net worth from synergies or in other words, their stake may be almost doubled while those of Virgin Media will increase theirs by slightly more than a quarter from synergies.

6. The Merger

This section analyzes the financial structure of deal and its worthiness. As in every other investment, expectations are that value is conserved or created. M&A deals each have idiosyncratic forms of settlement and should therefore be assessed on those terms.

Liberty Global Inc. and Virgin Media Inc. entered into an agreement and announced a possible merger on the 5th of February 2013. The negotiations that begun during the last quarter of 2012 were then finalized and terms of the merger made by the firms' respective boards of directors were released in a statement on the 6th of February to the public, subject regulatory and shareholder approvals.

As per agreement, the combination of the two firms would then be under a new parent firm called Liberty Global Corporation Limited, which would be re-registered as a U.K. public limited company and renamed Liberty Global plc. prior to the completion of the merger, which was completed on the 7th of June, 2013. The parent firm is to remain listed on NASDAQ.

6.1. The Deal Procedure and Consideration

The friendly merger of the firms follows a horizontal form which occurs when competitors or peers combine and may result in an increase of market power, as is the case at hand. A more specific form considering each firm's different local markets would be that of a market-extension merger, which as the name suggests, is the merging of two firms operating in different markets. Deals that increase market power are usually assessed on the basis of whether anticompetitive effects are incidentally induced and if it so happens, the deal may be nullified or opposed on antitrust grounds by regulatory bodies. Liberty Global Inc. has reputable market share across European countries and in order to expand its footprint, the EU Merger Regulation of the European Commission (EC) had to be undertaken and followed. The deal was therefore under assessment based on turnover and the aforementioned antitrust issue.

Most mergers that have taken place over the past years have been of no threat to the market. The assessment follows two phases; *Phase I* which takes the Commission 25 working days to decide whether to grant approval, and *Phase II* to start an in-depth

investigation (European Commission, 2013). The merger was later approved in April confirming that it would not spur competition issues as the firms each operated in different member states and further, that the combined firm's limited market position in the wholesale of TV channels in the UK and Ireland.

Besides being ratified by the EC, both firms' majority shareholders had to approve the deal on the basis of benefits liable to their respective stakes. The agreement provided that Liberty Global and Virgin Media would become wholly owned subsidiaries of Liberty Global plc. through a series of mergers involving wholly owned subsidiaries of Liberty Global. The form of payment agreed was a mix of stock and cash.

The mergers followed that each outstanding share of Virgin Media common stock would be exchanged for 0.2582 of a class A ordinary share of the merged firm, 0.1928 of a class C ordinary share of the merged firm and \$17.50 in cash, without interest; and each outstanding share of Liberty Global common stock would be exchanged for one ordinary share of the corresponding class of Liberty Global plc. ordinary shares. For each share of the Series A, B and C common stock, a par value of \$0.01 per share of Liberty Global would be converted into the right to receive one Class A, B and C ordinary share of the merged firm respectively. Each Class A ordinary share of merged firm would be entitled to one vote per share, while each Class B ordinary share would be entitled to ten votes per share and lastly, each Class C ordinary share would be issued without voting rights (Liberty Global, 2013).

Liberty Global's Chairman of the Board, John C. Malone happens to be the largest shareholder and beneficiary across stock series B and C, with the highest overall voting power of 36.6% while the second highest voting power of 4.5% is that of William H. Gates III, popularly known as Bill Gates. Other majority shareholders include individuals, institutions and well-known peer, Comcast Corporation (see appendix for details).

The cash component of the merger would be funded through a combination of available liquidity of the two firms and debt financing.

If assuming the merger had been completed on the 31st of December 2012, and all of the \$1 billion principal amount of the 6.50% convertible senior notes due 2016 of

Virgin Media were then converted into the per share consideration to be received by its shareholders, it would mean that:

- 83.5 million Class A ordinary shares and 62.4 million Class C ordinary shares of the merged firm would have been issued to them, representing roughly 36% of the merged firm's shares.
- 142.3 million Class A ordinary shares, 10.2 million Class B ordinary shares and 106.4 million Class C ordinary shares of the merged firm would have been issued to Liberty Global shareholders, representing roughly 64% of the merged firm's shares.

Given the aforementioned assumptions and the closing prices of Series A and C Liberty Global common stock on the 29th of April, 2013, the total value of the cash and stock consideration to be received by Virgin Media stockholders would have been roughly \$16.04 billion, including approximately \$5.9 billion of cash consideration. Had the merger occurred on the 31st of December, 2012, the balance brought forth of indebtedness of the combined firm would then move to \$40.06 billion as a result of a \$2.94 billion increase.

Upon consummation, holders of the \$853.9 million (representing more than 85% of the initial issue of \$1 billion) aggregate principal amount of Virgin Media's 6.50% convertible senior notes due 2016 elected in accordance to the agreement of having the right to exchange the notes for 13.8302 Liberty Global class A ordinary shares, 10.3271 Liberty Global class C ordinary shares and \$937.37 in cash (without interest) for each \$1,000 in principal amount of Convertible Notes exchanged.

Besides the requirement of approval of the offers to Virgin Media shareholders, the shareholders were also given a merger-related compensation proposal which required them to approve on an advisory non-binding basis, the compensation that would be paid or be payable to Virgin Media's executive officers in relation with the merger.

As it is common for the board to preserve an external valuation firm, such as investment bank or a firm that specifically deals with valuation to evaluate the terms and price of the transaction, the firm is expected to give a fairness opinion in which it may confirm that the offer is in a range that may be determined as accurate (Gaughan, 2002).

6.1.1. Fairness Opinions

In connection with the merger, Liberty Global's financial advisor Credit Suisse Securities (USA) LLC, delivered an opinion on the 5th of February, 2013 to the board of directors the fairness from the financial point of view of the consideration. On the other hand, Virgin Media's advisors Goldman, Sachs & Co. and J.P. Morgan Securities LLC rendered their opinion to the Virgin Media board of directors on the fairness of the consideration. Of the two, Virgin Media retained J.P. Morgan Securities LLC as its advisor throughout the deal and agreed to pay a transaction fee of \$25 million of which is due upon consummation. The opinions were in no way to be taken as a recommendation on how shareholders would vote concerning the approval of the deal.

6.1.2. Interests of Directors and Executive officers and an Advisory Board

Taking into account the recommendation by the board of directors regarding the merger, it may be that executive officers and directors may have certain interests in the deal that may be different from, or in line with those of the firms' shareholders. The Liberty Global interests included continued service of all its executive officers by the combined group, the continued service of all the directors as the directors of the combined firm and the compensation of former directors and officers by the surviving corporations. The interests of Virgin Media concerning compensation were similar to those of Liberty Global and in addition to that, the bonus plans made prior to the merger were proposed to continue and that if any change in control were to occur and an executive officer's employment terminated, the executive would be entitled to severance benefits as per existing employment agreement.

Virgin Media revealed that stockholders owning a total of roughly 217 million of its shares voted to adopt the Merger Agreement, representing nearly 80.22% of the shares of the Company's common stock outstanding as of the 4th of June 2013 (Virgin Media, 2013).

Prior to closing, the merged firm is to adopt a UK advisory board to provide the board of directors with general guidance on UK issues such as political, economic, cultural and regulatory matters. A UK resident member of the Virgin Media board of directors is to serve on this advisory board following the closing of the merger (Liberty Global, 2013).

6.2. Closing the deal

Upon closure the stock and cash mix was valued at \$24 billion making Virgin Media the 14th market in which Liberty Global will operate. The consideration made technically reflects a premium of 24% to Virgin Media's pre-deal share price (implied share price of \$47.87). At that time, the implied purchase before incorporating transaction costs and other expenses represented an equity value of roughly \$16 billion (based on pre-deal shares outstanding) and an enterprise value of roughly \$23.3 billion, including debt. Virgin Media's CEO, Neil Berkett was replaced by Tom Mockridge upon completion as per pre-deal agreement with compensation of \$19.6 million in severance and \$67.2 million in other options and rewards. The new CEO is to report to Liberty Global CEO who is also the merged firm's CEO, Mike Fries.

Liberty Global plc. plans to maintain the corporate culture of Virgin Media and they therefore justify the selection of the new CEO stating that his 15-year experience and talent of outstanding leadership in the industry will be beneficial to Virgin Media's next phase of growth.

The shares of both Virgin Media Inc. and Liberty Global Inc. were, under securities laws deregistered and trading ceased upon closure on the 7th of June, 2013 on NASDAQ while those of Virgin Media listed on the London Stock Exchange were cancelled on the 10th of June, 2013. The shares of the merged firm were open for trade on NASDAQ on the 10th of June, 2013 maintaining the tickers previously used by Liberty Global Inc. Liberty Global plc. intends to get listed on the London Stock Exchange in the long run.

6.3. Justifying the Premium

The motive behind handsome premiums paid has all to do with the estimated expected synergies. Synergies are usually of benefit to the acquiring firm if they indeed are realized and are greater than the actual premium paid over the target's value. An acquiring firm has to maintain or improve its value in order for it to have made a good purchase and overall, improve shareholders' net worth. Empirical studies show a negative relationship between premiums and share price performance (Sahni and Sirower, 2006). Synergies that can be realized in the short run have a positively significant impact on the acquiring firm's expected NPV than those to be realized in the

long run and also increase shareholders' confidence on the basis of the premium justification.

Highly acquisitive firm Liberty Global Inc. has closed a number of accretive deals over the past five years which gives it enough experience to be placed at favorable and rational negotiations. The firm had earlier probed the likeliness of merging with Virgin Media a few years ago and its current tax state partially prompted the proposal of a possible deal. Offers earlier showed premiums of as low as 12% with Virgin Media raising the bar higher. The table below shows a relative composition of the consideration and Shareholder Value at Risk (SVAR). LGI's newly found information on Virgin Media gave the company an insight on possible synergies to be realized, therefore eventually offering a higher price with the implied pre-deal price per share reflecting the 24% premium.

Table 12. Merger Consideration and SVAR

Merger Consideration Composition and SVAR	
Premium	24%
Stock percentage of consideration	62.5%
Cash percentage of consideration	37.5%
SVAR	11%

Although Liberty Global has a high probability of realizing synergies, the magnitude of the risk should be evaluated using the Shareholder Value at Risk (SVAR) which is 'the premium paid for the acquisition divided by the market value of the acquiring company before the announcement is made.' (Sahni and Sirower, 2006). In this case, the SVAR computed is 11% implying that if no synergies are realized post-merger, 11% of the shareholders' net worth is at risk. Considering LGI's equity value as at 31st of December, 2012, it would mean that \$242.5 million would be at risk.

As shown earlier, Liberty Global Inc. has a higher proportion of the merged firm as well as the equity. Given that the transaction is financed with 62.5% of stock and Liberty Global Inc. has a higher proportion of the equity in the merged firm, its shareholders will bear the larger part of the synergy risk.

6.3.1. The Synergy-Premium Model

As per literature review, further assessment of the target firm given its SVAR can be made regarding earnings by a model with combinations of cost reductions and revenue improvements that would justify the premium offered.

In the current case as seen earlier, cost synergies are likely to be realized than revenue synergies through operations. Therefore, cost reductions are solely used to obtain the acquisition premium. Using the shown equation below:

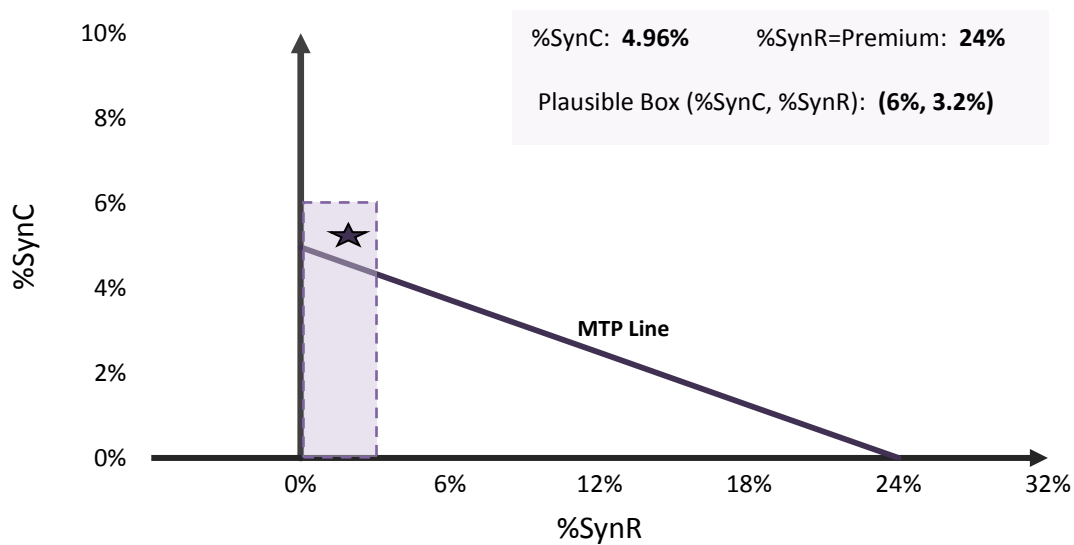
$$\%SynC = \%P \cdot \left[\frac{\pi}{(1 - \pi)} \right]$$

Where $\%SynC$ is the percentage cost synergy, $\%P$ the premium and π pre-tax profit margin.

Given Virgin Media's pre-merger pre-tax profit margin of 17.11%, the $\%SynC$ obtained is therefore 4.96%. This is the cost reduction minimum requirement in order to generate enough profit to justify the premium. This also implies that the cost reductions should be more than expectations of those in the standalone valuations. Given that the operations are similar and Virgin Media as a standalone firm has been more cost efficient and is endowed with most of the resources that Liberty Global Inc. lacks, it then proves the feasibility of the $\%SynC$ obtained.

Using the MTP line would mean incorporating possible revenue synergies and in this case, it is assumed that in the absence of cost synergies, it is required that the minimum improvements in revenue should equal the premium as shown in *Figure 17*.

Figure 17. The Synergy-Premium model



The synergy combinations show that the 4.96% meets the premium of 24% and the optimal point is that marked above the line with a star. However, given the type operations the firms are involved in, they are bound to a certain range of which they cannot exceed. The plausible box shows the upper limit of cost reductions to be 6% while the corresponding revenue improvements if given a mix of 3.2%, a range in which the optimal point lies as well. This falls in line with the actual growth rate of the firm’s revenues in their pro-forma statements.

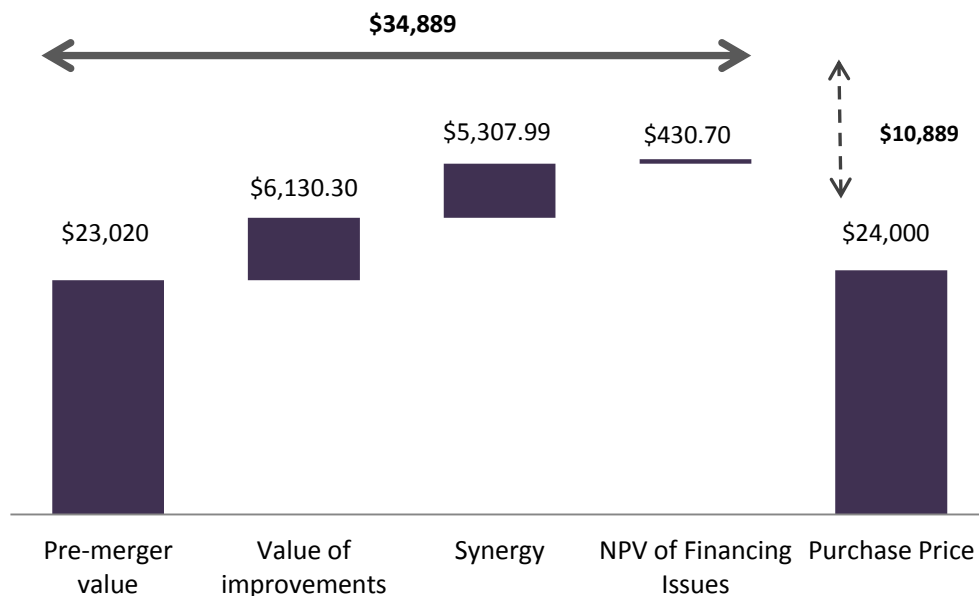
6.3.2. What does all this mean for shareholders?

Upon announcement of the merger, Virgin Media’s share price shot up by 18% a day later making the 24% premium offer negligible. However, the day after saw the share price falling from the 18% increase in closing price by 1.6%. On the other hand, Liberty Global Inc. had a drop of 2.7% in share price (Liberty Global’s Series A share price was \$69.46 and Series C share price was \$64.50 as at 4th February, 2013). This verifies empirical studies that have over time shown that the impact of acquisition news to investors is higher on the acquiring firm than the target firm. The mid-negotiation period had both firms’ shares performing incredibly well compared to the announcement period (Liberty Global’s Series A share price was \$75.18 and Series C share price was \$70.34 as at 31st March, 2013, while Virgin Media was at \$50.45).

As per agreement, the higher stake is taken by Liberty Global in both equity and negotiation. Currently, both shareholders seem to be better off than earlier this year with the Liberty Global plc. shares trading above \$76 with variations in prices of roughly -0.02% to 0.04%.

Following closure of the merger, Liberty Global plc. announced the approval of a \$3.5 billion stock repurchase program over the next two years making the previously announced share buyback of \$1 billion of Liberty Global Inc. before the merger inapplicable. The Program may be achieved through open market transactions and/or privately negotiated transactions, which may include derivative transactions. The timing of the repurchase of shares pursuant to the Program will depend on a variety of factors, including market conditions and applicable law. (Liberty Global plc., 2013). This strategy will be of high benefit to the Enterprise Value of the firm and most importantly, its market capitalization making shareholders wealthier. *Figure 18* shows the NPV to Liberty Global Inc. shareholders. The computed NPV from the overall deal is \$10,889 million from the forecasted cash flows over a five year trend.

Figure 18. NPV to LGI shareholders in millions



6.4. The merger financing 'after shock'

The cash composition of the merger besides the two firms' liquidity consisted of senior secured notes and loans of which are due after the year 2021. Considering the debt ratio of Liberty Global Inc., the merger agreement included Virgin Media issuing part of the debt therefore leveraging it up. This although providing the desired debt ratio for the next two operating years, has seen Virgin Media's credit rating downgrade from two to three notches by Fitch. Virgin Media's long-term debt rating moved from BB⁺ to B⁺. Liberty Global is currently under review as well for a possible downgrade. This will mean higher interest payments and probability of default, which if not managed may hurt shareholders' interests. However, given Virgin Media's traditional capital structure optimization strategy which involves share buybacks, increase in liquidity and debt repayment, if maintained by the new board of directors, the merged firm may recover in the next two to three years and have a decent leverage ratio.

7. Conclusion

M&A activity has over the past two decades been the norm of investors worldwide with many motives including expansion, diversification and value maximization. Macroeconomically, cross-border M&A may be classified as a form of FDI as the expansion of a firm into another economy contributes to the domestic productivity of the economic sectors of the firm's respective operation(s).

This work studies a merger that has been known as one of the most tremendous in the TMT sector between Liberty Global Inc. and Virgin Media Inc. The acquiring firm Liberty Global Inc. is known for its acquisitive strategy in search for any accretive deals while diversifying its operations across markets, mainly in Europe. The merger proves empirical evidence of acquiring firms' shareholders being highly impacted by events compared to those of target firms.

Given the current competition, capital intensity and innovation in the industry, it is only logic for firms to merge in anticipation of a greater force. The merger between the two firms after a close assessment proves that both companies have the potential of increasing their enterprise values by more than half and therefore, their market capitalization may be higher as they draw closer to maturity. The capital intensity if shared may be reduced creating cost synergies which may in turn largely contribute to the profit margins of Liberty Global plc.

Additionally, relocation to the UK proves to be beneficial to the American firm on the basis of tax savings. Although slightly offset by lower tax shields, the synergy analysis proved a decent gain. Revenue synergies may sprout however, it is not certain considering the current situation of both firms, there are no plans of newer product releases except for those already launched pre-merger.

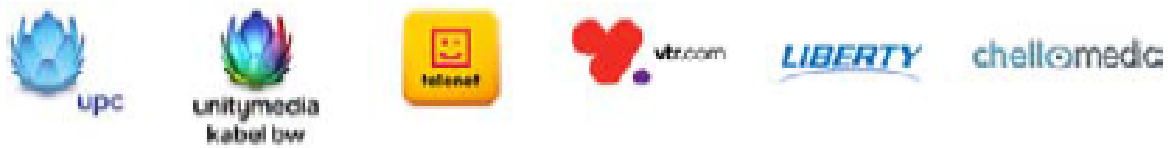
Given the customer base of both firms, Liberty Global plc. is currently the largest cable provider globally with the largest market share across Europe and strong revenues from five of the strongest markets in Europe.

The future of the firm entirely or mostly depends on the management and if Virgin Media's corporate culture is maintained and/or adopted regarding its current capital structure.

8. Appendices

Appendix A: Liberty Global Inc. Brands and Regions/Countries of Operation

Liberty Global Inc.

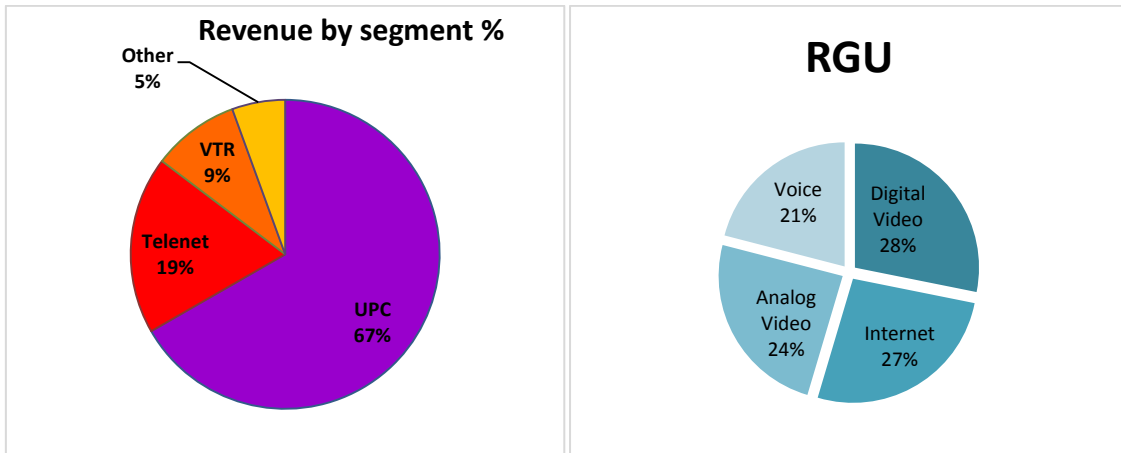


The *UPC* brand covers countries; Austria, Czech Republic, Hungary, Ireland, The Netherlands, Poland, Romania, Slovakia and Switzerland. *Unity Media* operates in Germany; *Telenet* in Belgium; *VTR* in Chile; *Liberty* in Puerto Rico and *Chellomedia* in Europe.

Chellomedia is the content division of Liberty Global and a leading international producer and distributor of TV channels and a provider of advanced digital services, such as ad sales and broadcast solutions to a portfolio of international channel operators. The Chellomedia division ("Chellomedia") operates its programming businesses in Europe, Africa, Asia, the Middle East and Latin America. It also owns joint venture interests in certain programming businesses and operates a series of these on behalf of the partners.

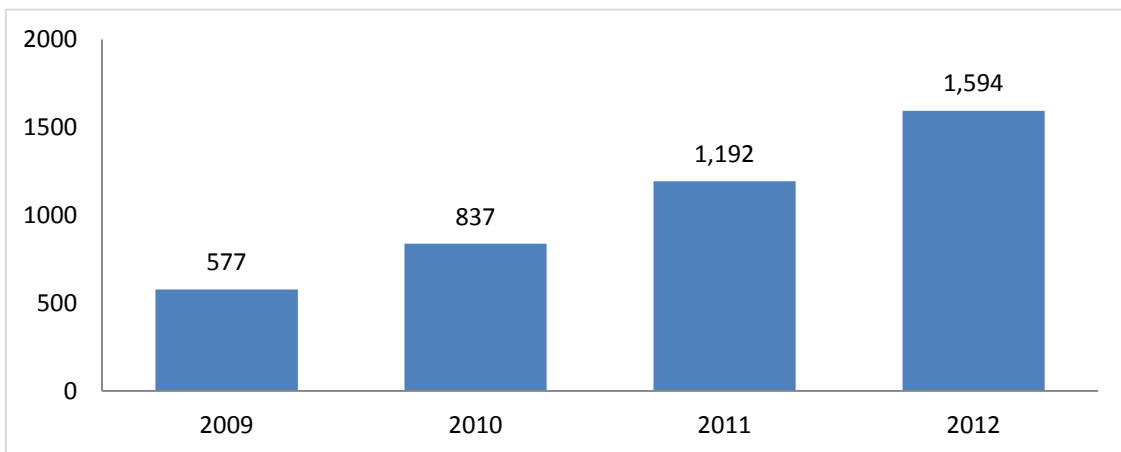
www.lgi.com

Appendix B: Liberty Global Average Revenue Share of Segments, RGU by product, RGU Additions and Bundling Opportunity (2012)



Source: www.lgi.com

RGU Annual Additions*



Source: Liberty Global, 2012.

*The momentum is a result of triple-play enhanced products.

Bundling Opportunity and Customer Base in millions



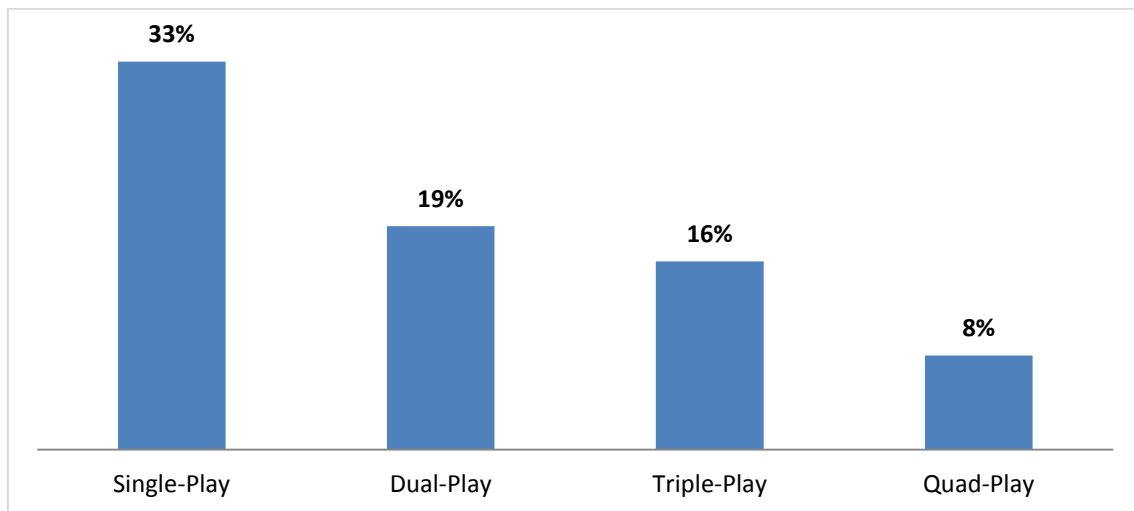
Liberty Global lacks Quad-Play bundling and still has a large share of its customer base subscribing for their products separately.

Appendix C: Liberty Global Inc. SWOT Analysis

STRENGTHS <ul style="list-style-type: none">• Largest broadband provider outside the US.• Strong Market Position.• Market diversity across 13 countries.• Well established corporate identity.• Admirable Revenue growth.• Consistent Stock Price Performance.	WEAKNESSES <ul style="list-style-type: none">• High CapEx.• Highly Leveraged, above industry average.• Weak Return on Equity.
OPPORTUNITIES <ul style="list-style-type: none">• Mobile Digital Communications.• Accretive M&A opportunities.• Good prospects for the cable market in Europe.• Quad-play bundles.	THREATS <ul style="list-style-type: none">• Strict European Market Regulations.• Foreign Currency Risk.• Tight Market Competition.

Based on information from Liberty Global, 2012 and Reuters, 2013.

Appendix D: Virgin Media Churn Rates Per Bundle



Source: Virgin Media, 2012.

The above chart clearly shows that there are higher costs borne by the firm for unbundled products than there are for bundled. If more customers subscribe to triple-play and quad-play, churn rates are lower therefore reducing operation expenses as well as CapEx.

“Integrated customers are likely to have much lower churn characteristics than a standalone mobile contract or fixed broadband customer given greater switching complexity, yielding significant cost savings for converged operators. These cost savings can either be recycled into lower prices, further accelerating the uptake of integrated bundles, or into higher margins, strengthening the incumbent’s long-term ability to invest and compete.” Goldman Sachs Global Investment Research, 2013.

Appendix E: Virgin Media Inc. SWOT Analysis

<p>STRENGTHS</p> <ul style="list-style-type: none"> • All consumer services are rebranded under the 'Virgin' brand. • Expensive Hi-tech and high speed infrastructure owned by VMED may be seen as a barrier to entry. • Virgin Media owns and operates its own fibre-optic cable network, the only national cable network in the United Kingdom. • Operational Efficiency. 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Reliance on third-party suppliers. • High CapEx.
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • Increasing demand for Mobile Digital Communications. • Internet television brings higher demand for internet services through broadband carriers. • More penetration and tieups with other international companies 	<p>THREATS</p> <ul style="list-style-type: none"> • Tight Market Competition. • Rapid technology upgrades.

Appendix F: LGI Forward Looking Statements

Over the next few years, we expect to continue to generate organic growth in our consolidated revenue and operating cash flow. We expect this growth to come primarily from organic increases in our digital cable, broadband internet and telephony RGUs, as we expect that our analog cable RGUs will decline and that our overall ARPU will remain relatively unchanged during this timeframe, primarily driven by growth in our operations in Germany, Switzerland, Belgium and the Netherlands. In addition, we currently expect that the continued expansion of our mobile service offerings will (i) positively impact our revenue and, towards the end of this timeframe, our OCF growth and (ii) positively impact our subscriber retention rates. Additionally, we plan to continue improving our competitive position, with (i) further planned launches of our Horizon TV platform, as discussed above, and (ii) upgrades to our network capacity in Germany and other markets. While we expect that these and other initiatives will require significant additions to our property and equipment, we currently expect that our total additions to property and equipment as a percentage of our revenue will continue to decline over the next few years. For additional information concerning our property and equipment additions, including our 2013 expectations for the UPC/Unity Division, Telenet and the VTR Group, see *Liquidity and Capital Resources - Consolidated Cash Flow Statements* below. Our expectations with respect to the items discussed in this paragraph are subject to competitive, economic, technological, political and regulatory developments and other factors outside of our control. Accordingly, no assurance can be given that actual results in future periods will not differ materially from our expectations.

The video, broadband internet and telephony businesses in which we operate are capital intensive. Significant additions to our property and equipment are required to add customers to our networks and to upgrade our broadband communications networks and customer premises equipment to enhance our service offerings and improve the customer experience, including expenditures for equipment and labor costs. Significant competition, the introduction of new technologies, the expansion of existing technologies such as fiber-to-the-home, or adverse regulatory developments could cause us to decide to undertake previously unplanned upgrades of our networks and customer premises equipment in the impacted markets. In addition, no assurance can be given that any future upgrades will generate a positive return or that we will have adequate capital available to finance such future upgrades. If we are unable to, or elect not to, pay for costs associated with adding new customers, expanding or upgrading our networks or making our other planned or unplanned additions to our property and equipment, our growth could be limited and our competitive position could be harmed.

Programming costs, which represent a significant portion of our operating costs, are expected to rise in future periods as a result of (i) growth in digital cable services, in combination with the introduction of Horizon TV, and (ii) price increases. In addition, we are subject to inflationary pressures with respect to our labor and other 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 operating segments (non-functional currency expenses). Any cost increases that we are not able to pass on to our subscribers through service rate increases would result in increased pressure on our operating margin. We expect that the 2013 operating cash flow margin of (i) the UPC/Unity Division will remain relatively unchanged, (ii) Telenet will decline slightly and (iii) the VTR Group will increase somewhat, each as compared to 2012. With regard to Telenet, the expected slight margin decline is due largely to the expected impact of the increasing mobile business. As discussed under Overview and Discussion and Analysis of our Reportable Segments - General above, most of our broadband communications operations are experiencing significant competition. Sustained or increased competition, particularly in combination with unfavorable regulatory, economic or political developments, could adversely impact the operating cash flow margins of our reportable segments.

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

Due largely to the fact that we seek to maintain our debt at levels that provide for attractive equity returns, as discussed under Liquidity and Capital Resources - Capitalization below, we expect that we will continue to report significant levels of interest expense for the foreseeable future. For information concerning our expectations with respect to trends that may affect certain aspects of our operating results in future periods, see the discussion under Overview above. For information

concerning the reasons for changes in specific line items in our consolidated statements of operations, see the discussion under Discussion and Analysis of our Reportable Segments and Discussion and Analysis of our Consolidated Operating Results above...

... Although our consolidated operating subsidiaries have generated cash from operating activities, the terms of the instruments governing the indebtedness of certain of these subsidiaries, including Telenet , UPC Holding , UPC Broadband Holding, Unitymedia KabelBW , Liberty Puerto Rico and VTR Wireless , may restrict our ability to access the assets of these subsidiaries. As set forth in the table below, these subsidiaries accounted for a significant portion of our consolidated cash and cash equivalents at December 31, 2012 . In addition, our ability to access the liquidity of these and other subsidiaries may be limited by tax considerations, the presence of noncontrolling interests and other factors...

...Although substantially all of our revenue and operating income is generated outside the United States, we are subject to potential current U.S. income tax on this income due to our being a U.S. corporation. Our worldwide effective tax rate is reduced under a provision in U.S. tax law that defers the imposition of U.S. tax on certain foreign active income until that income is repatriated to the United States. Any repatriation of assets currently held in foreign jurisdictions or recognition of foreign income that fails to meet the U.S. tax requirements related to deferral of U.S. income tax may result in a higher effective tax rate for our company.

Liberty Global, 2012.

Appendix G: Virgin Media's Safe Harbor Statement

Various Statements contained in this document constitute "forward-looking statements" as that term is defined under the Private Securities Litigation Reform Act of 1995. Words like "believe," "anticipate," "should," "intend," "plan," "will," "expects," "estimates," "projects," "positioned," "think," "strategy," and similar expressions identify these forward-looking statements, which involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements or industry results to be materially different from those contemplated, projected, forecasted, estimated or budgeted, whether expressed or implied, by these forward-looking statements. These factors, among others, include the following:

We have entered in to a Merger Agreement with Liberty Global, Inc., or Liberty Global, which is subject to certain conditions, and as a result the merger may not be consummated; our operations, both before and after consummation of the merger, will be impacted; We operate in highly competitive markets which may lead to a decrease in our revenue, increased costs, increased customer churn or a reduction in the rate of customer acquisition; The sectors in which we compete are subject to rapid and significant changes in technology, and the effect of technological changes on our businesses cannot be predicted; Adverse economic developments could reduce customer spending for our TV, broadband, and telephony services and increase churn, either of which could therefore have a material adverse effect on our revenue;

Our fixed line telephony revenue is declining and unlikely to improve; A failure in our network and information systems, whether caused by a natural failure or a security breach, could significantly disturb our operations, which could have a material adverse effect on those operations, our business, our results of operations and financial condition; Unauthorized access to our network resulting in piracy could result in a loss of revenue;

We rely on third-party suppliers and contractors to provide necessary hardware, software or operational support and are reliant on them in a way that could economically disadvantage us;

The "Virgin" brand is not under our control and the activities of the Virgin Group and other licensees could have a material adverse effect on the goodwill of customers towards us as a licensee;

Our inability to obtain popular programming or to obtain it at a reasonable cost could potentially have a material adverse effect on the number of customers or reduce margins; Our consumer mobile service relies on EE's network to carry its communications traffic; We do not insure the underground portion of our cable network and various pavement-based electronics associated with our cable network; We are subject to currency and interest rate risks; We are subject to tax in more than one tax jurisdiction and our structure poses various tax risks;

Acquisitions and other strategic transactions present many risks, and we may not realize the financial and strategic goals that were contemplated at the time of any transaction; Adverse changes in our financial outlook may result in negative or unexpected tax consequences which could adversely affect our net income; We are subject to significant regulation, and changes in U.K. and EU laws, regulations or governmental policy affecting the conduct of our business, which may have a material adverse effect on our ability to set prices, enter new markets or control our costs; We have substantial indebtedness that may have a material adverse effect on our available cash flow, our ability to obtain additional financing if necessary in the future, our flexibility in reacting to competitive and technological change and our operations; We may not be able to fund our debt service obligations in the future; The covenants under our debt agreements place certain limitations on our ability to finance future operations and how we manage our business; and We are a holding company dependent upon cash flow from subsidiaries to meet our obligations.

These and other factors are discussed in more detail under "Risk Factors" in Item 1A and elsewhere in this annual report on Form 10-K. We assume no obligation to update our forward-looking statements to reflect actual results, changes in assumptions or changes in factors affecting these statements.

Appendix H: Liberty Global Inc. and Virgin Media Inc. Peers

Ticker	Name	Beta
CMCSA US Equity	COMCAST CORP-CLASS A	1.099903
DTV US Equity	DIRECTV	0.841796
TWC US Equity	TIME WARNER CABLE	0.847285
CVC US Equity	CABLEVISION SYSTEMS-NY GRP-A	1.433168
CHTR US Equity	CHARTER COMMUNICATION-A	0.692463
DISH US Equity	DISH NETWORK CORP-A	0.979725
VZ US Equity	VERIZON COMMUNICATIONS INC	0.543975
T US Equity	AT&T INC	0.605475
KD8 GR Equity	KABEL DEUTSCHLAND HOLDING AG	0.408153
SIRI US Equity	SIRIUS XM RADIO INC	1.035143
SATS US Equity	EHOSTAR CORP-A	1.339477
BSY LN Equity	BRITISH SKY BROADCASTING GRO	0.594296
SKYD GR Equity	SKY DEUTSCHLAND AG	1.157479
TIVO US Equity	TIVO INC	1.447975

Source: Bloomberg Platform

Appendix I: Industry Unlevered Beta Estimation with a broader selection of Peers

	Mkt Cap (in \$million)	NI	beta	Unlevered	D/E
Liberty Global, Inc.	18,902	322	1.58	0.12	12.3
Comcast Corp	109,195	6,203	1.11	0.62	0.8
Directv*	32,283	2,949	0.9	-0.42	-3.16
Time Warner Cable Inc	27,609	2,155	0.75	0.17	3.5
British Sky Broadcasting Group PLC	21,332	952	0.61	0.13	3.7
DISH Network Corp	18,113	636	1.28	0.00	307.9
Virgin Media Inc	13,278	2,852	1.66	0.57	1.9
Charter Communications Inc	10,283	-304	0.79	0.01	86
Cablevision Systems Corp	3,918	233	1.48	1.48	0
Cogeco Cable Inc.	2,156	199	0.33	0.1	2.3
Tivo, Inc.	1,455	-5	1.51	1.01	0.5
BT	34,000		1.28	0.17	6.66

*excluded from estimation

Average	0.36
Median	0.15

Appendix J: Liberty Global Inc. Income Statement (in \$million)

	Historic				Forecast					CAGR (2013-17)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	
TOTAL REVENUES	6,963.50	8,364.20	9,510.80	10,310.80	11,032.56	11,584.18	12,163.39	12,528.29	12,904.14	
		20%	14%	8%	7%	5%	5%	3%	3%	4%
UPC	4,117.30	5,310.60	6,144.50	6,879.70	7,612.46	7,993.09	8,392.74	8,644.52	8,903.86	
Growth		29%	16%	12%	11%	5%	5%	3%	3%	4%
Telenet	1,674.60	1,727.20	1,918.50	1,918	2,096.19	2,200.99	2,311.04	2,380.38	2,451.79	
Growth		3%	11%	0%	2%	2%	5%	3%	3%	4%
VTR	700.8	798.2	889	940.6	992.93	1,042.58	1,094.71	1,127.55	1,161.37	
Growth		14%	11%	6%	6%	5%	5%	3%	3%	4%
Other	470.8	528.2	558.8	572.5	330.98	783.20	822.36	847.03	872.45	
Growth		12%	6%	2%	-42%	137%	5%	3%	3%	27%
Cost Of Goods Sold	2,604.40	3,010.50	3,379.40	3,617.50	3,971.72	4,054.46	4,257.19	4,384.90	4,516.45	
Growth		16%	12%	7%	10%	2%	5%	3%	3%	3%
UPC	1,442.00	1,752.70	1,955.50	2,113.00	2,325.45	2,559.25	2,765.38	2,988.11	3,228.78	
Growth		22%	12%	8%	10%	10%	8%	8%	8%	9%
Telenet	600.80	614.30	704.90	734.5	780.03	828.39	863.17	899.42	937.19	
Growth		2%	15%	4%	6%	6%	4%	4%	4%	5%
VTR	299.40	333.60	381.20	442.4	522.27	616.57	715.55	830.43	963.76	
Growth		11%	14%	16%	18%	18%	16%	16%	16%	17%
Corporate & Other	254.30	300.50	322.50	319.00	315.54	312.11	308.73	305.38	302.06	
Growth		18%	7%	-1%	-1%	-1%	-1%	-1%	-1%	-1%
Stock-based Compensation	7.90	9.40	15.30	8.60	-	-	-	-	-	-
Growth		0.19	0.63	-0.44	-	-	-	-	-	-
GROSS PROFIT	4,359.10	5,353.70	6,131.40	6,693.30	7,060.84	7,529.72	7,906.21	8,143.39	8,387.69	
Growth		23%	15%	9%	5%	7%	5%	3%	3%	4%
Selling General & Admin Expenses, Total	1,325.60	1,583.00	1,780.40	1,936.10	2,096.19	2,200.99	2,311.04	2,380.38	2,451.79	
Growth		19%	12%	9%	8%	5%	5%	3%	3%	4%
Depreciation & Amortization, Total	1,991.30	2,251.50	2,457.00	2,691.10	2,660.83	2,570.63	2,391.93	2,068.35	1,296.59	
Growth		13%	9%	10%	-1%	-3%	-7%	-14%	-37%	-16%
Other Operating Expenses	-2.9	4.2	-2.6	0	0	0	0	0	0	
OTHER OPERATING EXPENSES, TOTAL	3,314.00	3,838.70	4,234.80	4,627.20	4,757.02	4,771.63	4,702.97	4,448.72	3,748.38	
Growth		16%	10%	9%	3%	0%	-1%	-5%	-16%	-6%
OPERATING INCOME	1,045.10	1,515.00	1,896.60	2,066.10	2,303.82	2,758.09	3,203.23	3,694.67	4,639.31	
Growth		45%	25%	9%	12%	20%	16%	15%	26%	19%
Interest Expense	-807.6	1,283.60	1,455.20	1,677.40	1,787.11	1,876.47	1,857.70	1,839.13	1,820.74	
Growth		59%	13%	15%	7%	5%	-1%	-1%	-1%	0%
Interest And Investment Income	46.1	36.2	73.2	42.3	21.37	57.75	-15.57	-90.35	-166.62	
Net Interest Expense	-761.5	1,246.81	1,381.87	1,634.95	1,765.74	1,818.72	1,873.28	1,929.48	1,987.36	
Growth		64%	11%	18%	8%	3%	3%	3%	3%	3%
Other Non-Operating Expenses, Total	-917.7	1,394.70	-725.9	-529.1	-422.69	-379.95	-341.54	-307.00	-275.96	
		52%	-48%	-27%	-20%	-10%	-10%	-10%	-10%	-10%

Other Non-Operating Income (Expenses)	4.8	-2.80	-6.60	-1.10	0.22	0.48	1.06	2.34	5.15	
		-158%	136%	-83%	-120%	120%	120%	120%	120%	120%
Merger & Restructuring Charges	-21.1	-93.7	-50.6	-83.3	0.00	0.00	0.00	0.00	0.00	
Growth		344%	-46%	65%	15%	-65%	-65%	-65%	-65%	
Impairment Of Goodwill	-118.8	-26.3	-15.9	0	0	0	0	0	0	
Gain (Loss) On Sale Of Investments	-96.4	127.7	-67.9	-86.4	0.00	0.00	0.00	0.00	0.00	
		-2.32	-1.53	0.27	-1.50	0.80	0.40	0.40	0.40	
Other Unusual Items, Total	-34.5	-31.20	-230.10	-215.50	-43.10	-8.62	-1.72	-0.34	-0.07	
		-0.10	6.38	-0.06	-0.80	-0.80	-0.80	-0.80	-0.80	-80%
EBT, INCLUDING UNUSUAL ITEMS	-904.9	1,150.6 0	-575.8	-483.3	72.50	551.29	987.76	1,460.19	2,381.08	
Growth		27%	-50%	-16%	-115%	660%	79%	48%	63%	
Income Tax Expense	805.1	196.9	-231.7	-89	19.29	141.51	262.74	388.41	633.37	
Carryforward+EBT						532.00				
Earnings From Continuing Operations	-99.8	-953.7	-807.5	-572.3	53.22	390.49	725.02	1071.78	1747.71	
		856%	-15%	-29%	-49%	-69%	-109%	-149%	-189%	139%
EARNINGS FROM DISCONTINUED OPERATIONS	113.9	1,517.7 0	136.5	959.6	0.00	0.00	0.00	0.00	0.00	
		12.32	-0.91	6.03	-1.00					
Minority Interest In Earnings	-426.2	-175.8	-101.7	-64.5	-44.78	-33.77	-27.50	-24.04	-22.46	
		-0.59	-0.42	-0.37	-0.31	-0.25	-0.19	-0.13	-0.07	-16%
NET INCOME	-412.1	388.2	-772.7	322.8	8.4	356.7	697.5	1047.7	1725.3	278%

Appendix K: Liberty Global Inc. Balance Sheet (in \$million)

	Historic				Forecast				
	2009	2010	2011	2012	2013	2014	2015	2016	2017
Cash And Equivalents	3,269.60	3,847.50	1,651.20	2,038.90	-	-	-	-	-
Trading Asset Securities	153.60	90.60	155.80	191.30	-	-	-	-	-
TOTAL CASH AND SHORT TERM INVESTMENTS	3,423.20	3,938.10	1,807.00	2,230.20	-	-	-	-	-
Accounts Receivable	1,016.70	922.30	910.50	1,031.00	1,103.17	1,158.33	1,216.24	1,252.73	1,290.31
TOTAL RECEIVABLES	1,016.70	922.30	910.50	1,031.00	1,103.17	1,158.33	1,216.24	1,252.73	1,290.31
Deferred Tax Assets, Current	504.20	300.10	345.20	98.40	-	-	-	-	-
Restricted Cash	-	-	-	-	-	-	-	-	-
Other Current Assets	334.10	266.90	712.40	366.20	402.19	441.72	485.14	532.82	585.19
TOTAL CURRENT ASSETS	5,278.20	5,432.70	3,775.10	3,725.80	2,608.53	2,758.38	2,917.63	3,038.29	3,165.82
Gross Property Plant And Equipment	22,152.40	18,980.40	21,023.50	21,817.00	21,785.08	22,032.83	23,208.77	23,981.82	26,015.67
Accumulated Depreciation	(10,141.70)	(7,868.10)	(8,155.10)	(8,379.40)	(8,367.14)	(8,462.29)	(8,913.95)	(9,210.86)	(9,992.01)
NET PROPERTY PLANT AND EQUIPMENT	12,010.70	11,112.30	12,868.40	13,437.60	13,417.94	13,570.53	14,294.83	14,770.96	16,023.66
		-0.07	0.16	0.04	(0.00)	0.01	0.05	0.03	0.08
Goodwill	13,353.80	11,734.70	13,289.30	13,877.60	13,951.86	13,951.86	13,951.86	13,951.86	13,951.86
Long-Term Investments	1,195.20	1,265.80	1,519.60	1,417.20	810.68	1,310.40	1,375.92	1,417.20	1,459.72
Deferred Tax Assets, Long Term	-	492.70	83.00	166.20	-	-	-	-	-
Other Intangibles	2,317.70	2,294.40	3,007.30	3,139.50	-	-	-	-	-
Other Long-Term Assets	5,744.30	996.20	1,866.50	2,543.80	-	-	-	-	-
TOTAL ASSETS	39,899.90	33,328.80	36,409.20	38,307.70	-	-	-	-	-
LIABILITIES & EQUITY									
Accounts Payable	734.90	566.20	645.70	774.00	397.17	405.45	425.72	438.49	451.65
Accrued Expenses	1,622.10	1,657.70	1,776.00	2,061.80	2,206.13	2,316.43	2,432.25	2,505.22	2,580.38
Current Portion Of Long-Term Debt/Capital Lease	1,202.80	1,171.20	760.70	906.70	293.60	16.20	400.00	2,922.70	4,736.00
Current Portion Of Capital Lease Obligations	-	-	-	-	69.90	75.40	74.10	75.20	77.00
Other Current Liabilities, Total	89.70	23.60	138.70	26.70	-	-	-	-	-
Unearned Revenue, Current	886.40	869.80	847.60	849.70	772.28	695.05	486.54	250.57	129.04
TOTAL CURRENT LIABILITIES	4,535.90	4,289.90	4,169.80	4,620.30	3,739.08	3,508.53	3,818.61	6,192.18	7,974.06

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Long-Term Debt	26,531.80	23,628.90	26,278.80	27,997.60	29,491.61	31,258.27	30,561.73	27,729.41	25,609.59
Capital Leases	-	-	-	1,319.70	1,244.30	1,170.20	1,095.00	1,018.00	1,018.00

Appendix L: Liberty Global Inc Cash Flow Maps (in \$million)

	Historic				Forecast				
	2009	2010	2011	2012	2013	2014	2015	2016	2017
Intangible asset amort		405.40	406.80	477.40	472.0	456.0	424.30	366.90	230.0
yoy			0%	17%	-1%	-3%	-7%	-14%	-37%
Depreciation		1846.10	2050.20	2213.70	2188.83	2114.63	1967.63	1701.45	1066.59
yoy			11%	8%	-1%	-3%	-7%	-14%	-37%
Total Dep & Amort	1,991.30	2,251.50	2,457.00	2,691.27	2,660.83	2,570.63	2,391.93	2,068.35	1,296.59
yoy		13%	9%	10%	-1%	-3%	-7%	-14%	-37%
Intangible/Total Dep&Amort.		18%	17%	17.74%	18%	18%	17%	17%	17%
change in NPPE		-898.40	1,756.10	569.20	(19.66)	152.60	724.29	476.14	1,252.70
Capex	1,591.40	1,690.50	1,927.00	1,883.60	2,169.17	2,267.23	2,691.92	2,177.58	2,319.29
Capex/Revenue					19.66%	19.6%	22%	17.4%	18.0%
Capex yoy					5%	19%	-19%	7%	-100%
NWC		1,142.80	(394.70)	(894.50)	(1,130.54)	(750.15)	(900.98)	(3,153.89)	(4,808.24)
ΔNWC					(236.04)	380.39	(150.83)	(2,252.91)	(1,654.35)

	Year1	Year2	Year3	Year4	Year5	Year5+
FCF					TV	
	2013	2014	2015	2016	2017	
	2,418.71	1,947.45	2,202.01	4,855.56	4,036.91	92306.28

Appendix M: Virgin Media Inc. Income Statement (in £ million)

	Historic				Forecast					
	2009	2010	2011	2012	2013	2014	2015	2016	2017	CAGR (2013-17)
TOTAL REVENUES	3,663.90	3,875.80	3,991.80	4,100.50	4,212.16	4,326.86	4,444.68	4,565.72	4,690.05	
Growth		6%	3%	3%	3%	3%	3%	3%	3%	3%
Consumer	3,083.10	3,279.00	3,354.40	3,430.20	3,523.61	3,619.56	3,718.12	3,819.37	3,923.37	
Growth		6%	2%	2%	2%	2%	2%	2%	2%	3%
Business	580.80	596.80	637.40	670.30	688.55	707.30	726.56	746.35	766.67	
Growth		3%	7%	5%	3%	3%	3%	3%	3%	3%
Cost Of Goods Sold	1,528.70	1,575.00	1,605.60	1,629.20	1,645.00	1,660.96	1,677.06	1,693.33	1,709.75	
Growth		3%	2%	1%	1%	1%	1%	1%	1%	1%
Consumer	968.90	997.80	1032.90	1015.100	997.61	980.41	963.52	946.92	930.60	
Growth		3%	4%	-2%	-2%	-2%	-2%	-2%	-2%	-2%
Business	180.00	184.30	194.70	223.10	251.18	277.77	301.62	321.49	342.66	
Growth		2%	6%	15%	13%	11%	9%	7%	7%	8%
Network& Other	379.80	392.90	378.00	391.00	404.45	418.36	432.74	447.63	463.02	
Growth		3%	-4%	3%	3%	3%	3%	3%	3%	3%
GROSS PROFIT	2,135.20	2,300.80	2,386.20	2,471.30	2,567.16	2,665.91	2,767.62	2,872.39	2,980.29	
Growth		8%	4%	4%	4%	4%	4%	4%	4%	4%
Selling General & Admin Expenses, Total	786.3	790.6	796	817.8	832.02	846.49	861.20	876.18	891.41	
Growth		1%	1%	3%	2%	2%	2%	2%	2%	2%
Depreciation & Amortization, Total	1,171.80	1,135.30	1,041.60	951.7	1,072.28	1,045.12	944.40	855.22	790.47	
Growth		-3%	-8%	-9%	13%	-3%	-10%	-9%	-8%	-7%
Other Operating Expenses	0	0	-77.6	0	0	0	0	0	0	
OTHER OPERATING EXPENSES, TOTAL	1,958.10	1,925.90	1,760.00	1,769.50	1,904.30	1,891.60	1,805.60	1,731.39	1,681.88	
Growth		-2%	-9%	1%	8%	-1%	-5%	-4%	-3%	-3%
OPERATING INCOME	177.1	374.9	626.2	701.8	662.86	774.30	962.02	1140.99	1298.42	
Growth		112%	67%	12%	-6%	17%	24%	19%	14%	18%
Interest Expense	-455.1	-477.8	-440.8	-398.5	-396.44	-394.40	-392.36	-390.34	-388.32	
Growth		5%	-8%	-10%	-1%	-1%	-1%	-1%	-1%	-1%
Interest And Investment Income	6.2	8.3	5	6.8	43.91	70.07	68.36	66.66	90.54	
NET INTEREST EXPENSE	-448.9	-469.5	-435.8	-391.7	-352.53	-324.33	-324.00	-323.68	-297.78	
Growth		5%	-7%	-10%	-10%	-8%	0%	0%	-8%	-4%
Income (Loss) On Equity Investments	14.1	24	18.6	0	0	0	0	0	0	
Currency Exchange Gains (Loss)	119	-34.1	-2.4	-6.3		0	0	0	0	
Other Non-Operating Income (Expenses)	-114.5	-18.6	-50.7	148.1	162.91	179.20	197.12	216.83	238.52	
Growth		-84%	173%	-392%	10%	10%	10%	10%	10%	10%
EBT, EXCLUDING UNUSUAL ITEMS	-253.2	-123.3	155.9	451.9	473.24	629.17	835.14	1034.15	1239.15	
Merger & Restructuring Charges	-40.4	-53	-8.4	-2.7	0.00	0.00	0.00	0.00	0.00	
Growth		0.31	-0.84	-0.68	0.60	-0.10	-0.10	-0.10	-0.10	
Gain (Loss) On Sale Of Investments	0	0	-7.2	0	0	0	0	0	0	
Other Unusual Items, Total	-59.2	-117	-47.2	-187.8	-37.56	-15.02	-6.01	-2.40	-0.96	
Growth		0.98	-0.60	2.98	-0.8	-0.6	-0.6	-0.6	-0.6	
EBT, INCLUDING UNUSUAL ITEMS	-352.8	-293.3	93.1	261.4	435.68	614.15	829.13	1031.74	1238.19	30%

Growth	-17%	-132%	181%		67%	41%	35%	24%	20%	
Income Tax Expense	2.5	124.1	-16	2,591.20	696.18	128.97	165.83	206.35	247.64	
Carry forward +EBT					3,026.88					
Earnings From Continuing Operations	-350.3	-169.2	77.1	2,852.60	2,330.70	485.18	663.30	825.39	990.55	-19%
		-52%	-146%	3600%		-18%	-79%	37%	24%	20%
EARNINGS FROM DISCONTINUED OPERATIONS	-7.5	27.8	-1.2	0	0	0	0	0	0	
NET INCOME	-357.8	-141.4	75.9	2,852.60	2330.70	485.18	663.30	825.39	990.55	-19%

Appendix N: Virgin Media Inc. Balance Sheet (in £ million)

	Historic				Forecast				
	2009	2010	2011	2012	2013	2014	2015	2016	2017
Cash And Equivalents	430.5	479.5	300.4	206.3	-	-	-	-	-
Trading Asset Securities	--	--	7.8	6.1	-	-	-	-	-
TOTAL CASH AND SHORT TERM INVESTMENTS	430.5	479.5	308.2	212.4	-	-	-	-	-
Accounts Receivable	403.1	431.2	435.4	443.8	463.34	475.95	488.92	502.23	515.90
Inventory	12.9	26.4	13.1	17.5	16.45	16.61	16.77	16.93	17.10
Prepaid Expenses	95	89	83.9	85.7	-	-	-	-	-
Other Current Assets	155	0.8	1.7	--	-	-	-	-	-
TOTAL CURRENT ASSETS	1,102.50	1,029.10	844.2	814.2	479.79	492.56	505.69	519.16	533.00
NET PROPERTY PLANT AND EQUIPMENT	5,045.80	4,763.10	4,602.70	4,512.20	4348.8251	4191.3655	4108.9533	4028.1615	4031.71536
Growth		-6%	-3%	-2%	-4%	-4%	-2%	-2%	0%
Long-Term Investments	593.1	561.9	209.7	159.2	-	-	-	-	-
Goodwill	2,017.80	2,017.50	2,017.50	2,017.50	-	-	-	-	-
Other Intangibles	265.9	118.4	--	--	-	-	-	-	-
Other Long-Term Assets	52.7	244.6	189	353.6	-	-	-	-	-
TOTAL ASSETS	9,190.00	8,833.20	7,938.80	10,504.30	-	-	-	-	-
LIABILITIES & EQUITY									
Accounts Payable	312.5	295.9	304.4	349.3	352.69	356.11	359.56	363.05	366.57
Accrued Expenses	598	606.6	568.3	472.8	485.67	498.90	512.49	526.44	540.78
Current Portion Of Long-Term Debt/Capital Lease	56.3	235.4	93.3	85.2	0.00	0	750	0.00	0.00
Other Current Liabilities	143.8	57.6	--	--	--	--	--	--	--
TOTAL CURRENT LIABILITIES	1,393.40	1,497.20	1,277.80	1,224.00	838.36	855.01	1,622.05	889.49	907.35

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Long-Term Debt	6,040.30	5,860.30	5,832.10	5,802.00	5,801.89	5,771.95	4,992.16	5,712.52	5,683.04
Capital Leases	--	--	--	151.9	-	-	-	-	-

Appendix O: Virgin Media Inc. Cash Flow Maps (in £ million)

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Amortization	183.70	147.00	118.40	0.00	200.00	161.09	129.75	104.50	84.17
yoy		-20%	-19%	-100%	-	-19%	-19%	-19%	-19%
Depreciation	988.10	988.30	923.20	951.70	872.28	884.03	814.65	750.71	706.29
yoy		0%	-7%	3%	-8%	1%	-8%	-8%	-6%
Total Dep&Amort.	1,171.80	1,135.30	1,041.60	951.70	1,072.28	1,045.12	944.40	855.22	790.47
Dep/NPPE	20%	21%	20%	21%	20%	19%	18%	16%	15%
yoy		6%	-3%	5%	-6%	-6%	-6%	-6%	-6%
Change in NPPE		-282.70	-160.40	-90.50	-163.37	-157.46	-82.41	-80.79	3.55
Capex		705.60	762.80	861.20	708.90	726.57	732.24	669.92	709.85
yoy			8%	13%	-18%	2%	1%	-9%	6%
Capex/Revenue					17%	17%	16%	15%	15%
NWC				-409.80	-358.57	-362.44	-1,116.36	-370.33	-374.34
ΔNWC					51.23	-3.87	-753.92	746.03	-4.02

Year1	Year2		Year3		Year4		Year5		Year5+	
FCF	TV									
	2013	2014	2015	2016	2017					
	822.55	934.12	1,735.69	352.06	1,123.37	34109.70				
Forecast rates										
	£	1.56	£	1.58	£	1.59	£	1.61	£	1.62
Converted Cashflows										
	\$	1,285.81	\$	1,474.26	\$	2,765.70	\$	566.37	\$	1,824.61
										\$ 38,213.77

Appendix P: Potential Synergies in Continental Europe

Large potential synergies are available from mobile/cable M&A

We see five main sources of potential synergies. In aggregate, we estimate that these represent £10-16 bn of potential value in continental European cable markets (Germany, Netherlands, Spain, Portugal and the UK) on an NPV basis. These include:

- **Lower ULL fees** as mobile operators transition DSL customers onto the cable network.
- **Lower MVNO fees** for the cable operator as traffic is switched to the acquirer's network (assuming the acquirer is not the current MVNO partner). Given the low marginal cost of voice/data traffic, these savings are potentially very material.
- **Lower capex costs** for the mobile operator thanks to core network integration and mobile backhaul savings, as a significant number of cell sites can be connected to the cable network.
- **Lower operating costs** for both operators thanks to lower churn rates. In addition, we see scope for cost savings by moving to a single customer contact centre, unified IT and billing systems, lower G&A costs, potential consolidation of retail stores etc.
- **Better growth** for the mobile operator than would otherwise have been the case as it is better able to compete with integrated fixed/mobile offers from the incumbent, and removes a key mobile MVNO rival.

We assume that material up-front investments would be required to realize these synergies; for example, transitioning a ULL customer to the cable network would require a new modem and potentially new in-home wiring, connecting base stations to the cable network would require modest fiber build-outs, while complex IT integration would also bring up-front costs. Growth synergies would only be likely to flow gradually over time as customer propositions were integrated. As a result, **when estimating potential synergies we assume dis-synergies in the first year of integration, no net savings in the second year and material gains only from year three.**

-Goldman Sachs Global Investment Research, 2013.

Appendix Q: Valuation of the Merged Firm Summary 1 (values in \$million)

	LGI	VMED	Combined	Target _{LGI}	Target _{VMED}	Combined
Growth	3%	3%	3%			
Tax rate	27%	21%				
Initial Revenues 2012	10,310.80	6,348.80	16,659.60			
CoGS	35%	40%	37%			
	3,617.50	2,522.49	6,139.99			
Equity MV	2,210.00	4,888.91	7,098.91			
Debt MV	27,997.60	5,802.00	33,799.60			
weights _{debt}	0.84	0.16	1.00			
Capital	30,207.60	10,690.91	40,898.51			
Debt-capital	93%	54%	86%	60%	40%	57%
Equity-capital	7%	46%	14%	40%	60%	43%
D/E	1266.86%	118.68%	634.18%	150.00%	66.67%	131.04%
Cost of Distress	1.10%	0.80%	0.986%			

	Forecast		
Value in \$million	80,770.26	34,888.99	115,659.25
weights	0.70	0.30	1.00
All equity	69,763.33	32,428.54	102,191.87
weights	0.68	0.32	1.00
β_u	0.96	0.96	0.96
β_l	1.7616	1.232	1.75
ka	8%	6%	8%
ke	12%	7%	9%
kd	5.99%	6.83%	6.13%
WACC	7.50%	6.39%	6.74%

Appendix R: Valuation of the Merged Firm Summary 2 (values in \$million)

	2013	2014	2015	2016	2017	TV	
	Year1	Year2	Year3	Year4	Year5	Year5+	
FCF_{LGI}	2,418.71	1,947.45	2,202.01	4,855.56	4,036.91		
FCF_{VMED}	1,285.81	1,474.26	2,765.70	566.37	1,824.61		
FCF_{combined}	3,704.52	3,421.71	4,967.70	5,421.94	5,861.52	122,760.69	
PV	3,432.72	2,938.02	3,952.52	3,997.41	4,004.43	83,866.76	
	102,191.87						
ITS_{LGI}	469.90	498.05	486.95	441.82	408.05	14,056.50	TV
ITS_{VMED}	141.12	128.18	105.58	120.82	120.20	3,232.40	17,394.93
ITS_{Combined}	611.02	626.23	592.54	562.64	528.24	17,288.90	
	575.74	556.00	495.71	443.52	392.36		12,920.39
PV_{ITS}	15,383.71						
Adjusted PV_{ITS}	14,514.53						
Enterprise Value	\$ 115,699.12	million					

Appendix S: Valuation of the Merged Firm with Synergies Summary (in \$million)

	2013	2014	2015	2016	2017
Without Synergies					
RevenueLGI	11,032.56	11,584.18	12,163.39	12,528.29	12,904.14
RevenueVMED	6,521.69	6,699.28	6,881.71	7,069.10	7,261.60
RevenueMerged	17,554.24	18,283.46	19,045.10	19,597.39	20,165.74
CoGSLGI	3,971.72	4,054.46	4,257.19	4,384.90	4,516.45
CoGSVMED	2,546.95	2,571.66	2,596.60	2,621.78	2,647.21
CoGSMerged	6,518.68	6,626.12	6,853.79	7,006.68	7,163.66
CoGS/Revenue	0.371344689	0.36241063	0.35987137	0.35753143	0.35523907
With Cost Synergies					
CoGSMerged	6319.53	6399.21	6665.78	6859.09	6856.35
CoGS/Revenue	0.36	0.35	0.35	0.35	0.34
yoy		-3%	0	0	-3%
CoGS change	-3%	-3%	-3%	-2%	-4%
Gross Profit	11,234.72	11,884.25	12,379.31	12,738.31	13,309.39
SGA	3,384.40	3,511.61	3,644.45	3,736.96	3,831.96
SGA/Revenue	0.19	0.19	0.19	0.19	0.19
Depreciation&Amort	4,321.04	4,188.79	3,854.14	3,392.48	2,520.47
Expenses total	7,705.44	7,700.40	7,498.59	7,129.44	6,352.43
Operating Income	3,529.27	4,183.85	4,880.73	5,608.87	6,956.96
CapexLGI	2,169.17	2,267.23	2,691.92	2,177.58	2,319.29
CapexVMED	1097.60	1124.95	1133.72	1037.24	1099.06
CapexMerger	3,266.76	3,392.18	3,825.65	3,214.82	3,418.35
ΔNWCLGI	(236.04)	380.39	(150.83)	(2,252.91)	(1,654.4)
ΔNWCVMED	79.31	-5.99	-1167.29	1155.08	-6.22
ΔNWCMerger	(156.7)	374.4	(1,318.1)	(1,097.8)	(1,660.6)
FCF	3,865.0	3,610.3	5,090.1	5,577.5	6,098.7
TV					125632.84
PV	3578.73	3095.25	4040.71	4099.62	4150.66
PVTV					85503.60
Total	104468.57				
PVITS	14514.53				
Value with Synergy	118,983.10				
Synergy	3,323.86				
PV	2399.09				
With Tax Synergies					
FCFs	3,857.60	3,628.11	5,342.64	5,707.89	6,235.88
TV					128,459.11
PV	3,571.85	3,110.52	4,241.16	4,195.47	4,244.03

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