



# Equity Valuation - Cellnex Telecom S.A.

António Mourato Pereira

Dissertation written under the supervision of Professor José Carlos Tudela Martins

*Dissertation submitted in partial fulfilment of requirements for the MSc in Finance, at the  
Universidade Católica Portuguesa, December 2017*

## Abstract

Title: Equity Valuation - Cellnex Telecom S.A.

Author: António Mourato Pereira

This dissertation presents the valuation of Cellnex Telecom S.A., an independent infrastructure operator for wireless telecommunications traded in the Madrid Stock Exchange. The valuation relies on the application of two models – Adjusted Present Value (APV) and Relative Valuation – followed by a sensitivity analysis with the objective of testing the assumptions made. Through the application of the APV model Cellnex Telecom S.A is valued in €22.81 per share. The Relative Valuation method is only used to better understand how the market currently values similar companies rather than being a support for the investment recommendation. Lastly, this dissertation results are compared and analyzed to the results reported by Morgan Stanley Investment Bank dated 2<sup>nd</sup> August 2017.

**Keywords:** Cellnex, Telecom, Equity Valuation, Adjusted Present Value, Relative Valuation

## Resumo

Título: Equity Valuation – Cellnex Telecom S.A.

Autor: António Mourato Pereira

Esta dissertação apresenta a avaliação da Cellnex Telecom S.A., uma operadora independente de infraestruturas para telecomunicações wireless cotada na Bolsa de Madrid. A avaliação conta com a aplicação de dois modelos – Valor Atual Líquido Ajustado (VALA) e Avaliação Relativa – seguida de uma análise de sensibilidade com o objetivo de testar os pressupostos feitos. Através da aplicação do modelo VALA a Cellnex Telecom S.A é avaliada em €22.81 por ação. O método de Avaliação Relativa é utilizado exclusivamente por forma a melhor perceber como o mercado avalia atualmente empresas similares ao invés de servir de suporte para a recomendação de investimento. Por fim, os resultados desta dissertação são comparados e analisados com os resultados reportados pelo Banco de Investimento Morgan Stanley em 2 de agosto de 2017.

**Palavras-Chave:** Cellnex, Telecom, Avaliação de Empresas, Valor Atual Líquido Ajustado, Avaliação Relativa

## **Acknowledgements**

First, I would like to express my gratitude to my family for supporting me through my university studies. Secondly, I would like to thank professor José Carlos Tudela Martins for his availability and feedback during the development of this dissertation. And lastly, I would like to thank the valuable inputs both from Cellnex Telecom's Investor Relations and Ms. Frances from TowerXchange.

## List of Abbreviations

TR – Tenancy Ratio

MNO – Mobile Network Operators

DAS – Distributed Antenna Systems

POP – Point of Presence

TowerCo – Tower Company

CAGR – Compounded Annual Growth Rate

EBIT – Earnings Before Interest and Taxes

EBITDA – Earnings Before Interest, Taxes, Depreciation and Amortization

CAPEX – Capital Expenditures

D&A – Depreciation and Amortization

WC – Working Capital

FCFF – Free Cash Flow to Firm

FCFE – Free Cash Flow to Equity

APV – Adjusted Present Value

ITS – Interest Tax Shields

TV – Terminal Value

ROA – Return of Assets

ROE – Return on Equity

ROIC – Return on Invested Capital

EV – Enterprise Value

# Index

<b>Introduction</b> .....	8
<b>1. Literature Review</b> .....	9
1.1 Equity Valuation: An introduction .....	9
1.2 Valuation Models .....	10
1.2.1 Discounted Cash Flow Methods.....	10
1.2.1.1 Dividend Discount Model .....	13
1.2.1.2 Free Cash Flow Methods.....	13
1.2.1.3 FCFF - Free Cash Flow to Firm .....	14
1.2.1.4 FCFE - Free Cash Flow to Equity .....	14
1.2.1.5 APV - Adjusted Present Value .....	14
1.2.2 Economic Value Added.....	16
1.2.3 Multiples Valuation.....	16
<b>2 Valuation Model Choice</b> .....	18
<b>3 Industry Overview</b> .....	19
3.1 Telecommunication Services Industry: Overview .....	19
3.2 TowerCo Sector.....	20
<b>4 Cellnex Telecom S.A.</b> .....	22
4.1 Company Overview.....	22
4.2 Business Overview .....	23
4.3 Historical Performance.....	25
<b>5 Company Valuation</b> .....	29
5.1 Forecasting Growth .....	30
5.2 Operational Forecasting .....	31
5.2.1 Revenues .....	31
5.2.2 Operating Expenses and EBITDA Margin.....	32
5.2.3 CAPEX, Depreciations and Amortizations .....	34
5.2.4 Working Capital .....	35
<b>6 APV Valuation</b> .....	37
6.1 Unlevered Cost of Equity .....	37
6.2 Cost of Debt .....	38
6.3 Tax Rate .....	38
6.4 Free Cash Flow to the Firm.....	39
6.5 Debt Plan and Interest Tax Shields .....	39
6.6 Bankruptcy Costs .....	40
6.7 Valuation results.....	41

6.8	Sensitivity Analysis .....	42
6.8.1	Points of Presence Growth .....	42
6.8.2	Terminal Growth Rate and Unlevered Cost of Equity .....	43
<b>7</b>	<b>Relative Valuation</b> .....	<b>44</b>
<b>8</b>	<b>Investment Recommendation</b> .....	<b>46</b>
<b>9</b>	<b>Investment Bank Report Comparison</b> .....	<b>46</b>
	<b>Conclusion</b> .....	<b>48</b>
	<b>APPENDIXES</b> .....	<b>50</b>
	<b>References</b> .....	<b>70</b>

## **Introduction**

With the purpose of studying different valuation techniques and its practical applications, this dissertation presents a valuation study on Cellnex Telecom S.A. It is structured as follows: First, a Literature Review is presented with the objective of discussing several valuation methodologies, its theoretical foundations and characteristics so that the most suitable method should be chosen. Secondly, and as it is of extreme importance to better understand the company's dynamics, an analysis is made not only to its Industry but also to its specific Sector and Historical performance. Thirdly, the development of the valuation model as well as the clarification on the assumptions made, a test to those same assumptions and its results. Lastly, the presented results are compared to the ones reported by Morgan Stanley Investment Bank on August 2017.



# 1. Literature Review

## 1.1 Equity Valuation: An introduction

Valuation can be described by the process of estimating how much a given asset is worth. This is a central question for many market participants, would they be investors, researchers, business managers, portfolio managers or even regulators. It plays an important role not only in financial markets but also in the financial management of business corporations as it provides valuable insights that support resource allocation which in turn is fundamental for business development and growth. A determining factor in investing activities, valuation is therefore a highly desirable skill, as it contributes for a better decision-making process.

Equity Valuation is the process of estimating how much a given company is worth. According to (Jerald E. Pinto, CFA / Elaine Henry, CFA / Thomas R. Robinson, CFA / John D. Stowe, CFA, 2010) this process can be described as the following steps: understanding the business, forecasting company performance, selecting an adequate valuation model, converting forecasts to a valuation and apply the analytic results in the form of recommendations and conclusions. When valuing an asset, in this case an equity stake, one must take in consideration different definitions of value: *Intrinsic Value* is the value of an asset assuming a complete understanding of that asset's investment characteristics - this estimate would reflect the believes of a given investor on which is the 'true' value of that asset. On the other hand, *Market Value* is the value on which the market currently trades an asset reflecting the market believes of its value. According to the Efficient Market Hypothesis the market value of an asset is the best estimate for its intrinsic value. However, assuming the *Intrinsic Value* can differ from its *Market Value* constitutes a critical assumption in Equity Valuation, as investment managers constantly seek abnormal returns through mispricing opportunities<sup>1</sup>. Additionally, there are two assumptions that are key to company valuation: *Going-Concern Value* is the value of an asset under the assumption that the company will continue to operate in a foreseeable future; and *Liquidation Value* is the value of that company's stock assuming it will be dissolved and their assets will be sold individually, due to being in financial distress<sup>2</sup>.

The main purpose of Equity Valuation is to apply valuation concepts and models to access a company's *intrinsic value* so that a mispricing opportunity can be spotted and exploited. Still,

---

<sup>1</sup> Grossman-Stiglitz Paradox: if all available information is reflected in stock market prices, no agent would have incentives to acquire information on which prices are based.

<sup>2</sup> In some cases, the going concern value might be greater than the liquidation value for companies with constantly unprofitable business due to the synergies created by assets working together.

valuation is also useful to: infer market expectations – as market prices reflect investors’ expectations one can ask which expectations lead to the current market price; evaluate corporate events – such as Mergers, Acquisitions, Spin-offs and Leverage Buyouts; appraising private businesses – valuing Initial Public Offerings (IPOs); or even evaluate business strategies – its impact on share value.

## 1.2 Valuation Models

Deciding on which methods to use will depend on the characteristics of the company being valued, the data available and the questions to be answered. “Although valuation is always a function of three fundamental factors – cash, timing, and risk – each type of problem has structural features that set it apart from the others and present distinct analytical challenges” (Luehrman, Financial Management, 1997)

### 1.2.1 Discounted Cash Flow Methods

Discounted cash flow methods aim to value a company as the present value of its expected future cash flows discounted at a rate that matches the cash flows’ risk which is represented as the following equation:

$$V_0 = \sum_{t=1}^n \frac{CF_t}{(1+r)^t} \quad (1)$$

Where,

$V_0$  = the value of the asset at time  $t = 0$  |  $n$  = number of cash flows in the life of the asset

$CF_t$  = the cash flow (expected cash flow) at time  $t$  |  $r$  = the discount rate or required rate of return

### Discount Rates and Cost of Capital

When valuing a company “analysts need to specify the appropriate rate or rates with which to discount expected future cashflows when using present value models of stock value” (Pinto et al., 2010). These rates reflect investors’ expectations on the return a given investment will generate under the economic principle of opportunity cost. Which is the rate of return required by investors so that they choose to invest in the company rather than investing in a similar project given its riskiness (best available alternative)? Therefore, and alternatively, the discount rate is usually said to be the cost of capital because it represents the rate a company to pays to its investors.

## Cost of Equity

Cost of equity is the required return of equity investors. The CAPM - Capital Asset Pricing Model<sup>3</sup> presents a methodology to access which is the expected return on a given stock, and therefore, provide an estimate for the cost of equity. The CAPM suggests that a stocks' return can be described as follows:

$$\overline{R}_S = R_f + \beta \times (\overline{R}_M - R_f) \quad (2)$$

where, the expected stock return ( $\overline{R}_S$ ) is equal to the return on a risk-free asset ( $R_f$ ) plus a market risk premium ( $\overline{R}_M - R_f$ ), adjusted to the stock's risk relatively to the market ( $\beta$ ).

“The attraction of the CAPM is that it offers powerful and intuitively pleasing predictions about how to measure risk and the relation between expected return and risk” (French, 2004). CAPM assumes that investors are risk averse and they make investment decisions based on mean returns and variance of returns of their total portfolios. Although it is the most widely taught and used model, it is important to note that CAPM also entails some drawbacks as it relies on some strong market assumption that might not be realistic (Fernandez, CAPM: an absurd model, 2015).

## Beta

Beta ( $\beta$ ) is a measure of systematic risk of stock relatively to the market (M). Its calculation results from an ordinary least squares regression of the return on the stock on the return on the market and it is heavily influenced by two factors (Pinto et al., 2010): the index chosen to represent the market portfolio and both the length and frequency of the data used.

It may also be important to make a distinction between levered and unlevered companies to which the Beta will need to be adjusted accordingly. By computing the beta through the previously mentioned method, as we are using market data from publicly traded companies, we will get the levered beta ( $\beta_L$ ) for the levered cost of equity ( $K_e$ ). Hence,

$$K_e = R_f + \beta_L \times MRP \quad (3)$$

On the other hand, if one needs to estimate the Beta for the unlevered company we will need to deleverage the Beta previously computed. According to Hamada (1972), we have the following expression:

---

<sup>3</sup> The acronym CAPM refers specifically to the model of Sharpe (1964), Lintner (1965) and Black (1972).

$$\beta_L = \beta_U \left( 1 + \frac{D}{E} (1 - t) \right) \quad (4)$$

“The unlevered beta of a firm is determined by the types of the businesses in which it operates and its operating leverage. Thus, the equity beta of a company is determined both by the riskiness of the business it operates in, as well as the amount of financial leverage risk it has taken on” (Damodaran, 2011).

Therefore, the unlevered cost of equity can be computed as follows:

$$K_u = R_f + \beta_U \times MRP \quad (5)$$

### **Market Risk Premium (MRP)**

Market risk premium is the incremental premium required by investors relatively to a risk-free asset. Under the CAPM, it is represented by the difference between the expected market portfolio return and the expected return from the risk-free asset adjusted by beta. Although CAPM proved itself a very practical model to estimate market risk premiums, “by the end of the 1980’s, empirical evidence had accumulated that, at least over certain long-time periods, in the U.S. and several other equity markets, investment strategies biased toward small-market capitalization securities and/or value might generate higher returns over the long run than the CAPM predicts” (Pinto, et al., 2010). Eugene Fama and Kenneth French aimed to solve this problem by presenting the 3 factor Fama-French Model that includes: the same factor of the CAPM plus two factors related with company characteristics and valuation – size (SMB) and value (HML). Other approaches might include: historical average, dividend discount model, constant Sharpe ratio method and bond market implied risk premium (Marc Zenner, 2008).

Market risk premium is fundamental to estimate capital costs and so, it directly impacts investment decisions. However, as there is not a consensus on which is the best model to estimate MRP and different approaches can lead to different estimates, one should conduct a sensitive analysis in order to evaluate the impact of the different outputs those models can produce.

### **Cost of Debt (Kd)**

Cost of debt represent lender’s required return. Debt Cash Flows, as Pablo Fernandez explains, “are usually riskier than the cash flows promised by the government bonds” and therefore, its required returns will be higher than the risk-free rate.

$$\text{Debt Required Return} = K_d = RF + RP_d(\text{Debt Risk Premium}) \quad (6)$$

### Weighted Average Cost of Capital (WACC)

The WACC is the after-tax weighted average of required rate of return from each capital source (Pinto et al, 2010). This is the most commonly used methodology to access the cost of capital when valuing total firm value through a discount cash flow model. Fernandez (2010) defines WACC as “neither a cost nor a required return, but a weighted average of a cost and a required return”.

$$WACC = \frac{MVD}{MVD + MVCE} K_d(1 - t) + \frac{MVCE}{MVD + MVCE} K_e \quad (7)$$

where,

*MVD = market value of debt | MVCE is the market value of common equity*

*K<sub>d</sub> is the cost of debt | K<sub>e</sub> is the cost of equity*

As Fernandez (2010) adverts, one should bear in mind that WACC is not a static value but rather a dynamic one. As the company’s capital structure may change overtime, it is important to continuously adjust the WACC calculations for each period. Furthermore, the capital structure, or the Debt to Equity ratio, should be at market values.

#### 1.2.1.1 Dividend Discount Model

The Dividend Discount Model stands one the most basic tools for equity valuation. From the stockholder’s point of view, dividends are the cash flows received in the future plus the market price of the stock in case the shareholder wants to sell it. In turn, the market price will reflect the expected future cash flows – dividends – that given stock will generate afterwards (similar to Terminal Value in Free Cash Flow methods).

For a given finite period n, DDM can be described as follows:

$$V_0 = \sum_{t=1}^n \frac{D_t}{(1 + K_e)^t} + \frac{P_n}{(1 + K_e)^n} \quad (8)$$

#### 1.2.1.2 Free Cash Flow Methods

“The concept of free cash flow responds to the reality that, for a going concern, some of the cash flow from operations is not “free” but rather needs to be committed to reinvestment and

new investment in assets” (Pinto et al., 2010) The two following methodologies, despite their differences, should, theoretically, yield the same results.

### 1.2.1.3 FCFF - Free Cash Flow to Firm

Free Cash Flow to Firm represents the cash flow available to the company’s capital suppliers after all operational expenses and capital requirements – both CAPEX and Working Capital. Also known as the DCF-WACC method, the FCFF formula will depend on the information available and will reflect the Firm Value of a Company. An example will be as follows:

$$FCFF = EBIT (1 - t) + D\&A - CAPEX + \Delta WC \quad (9)$$

Because FCFF materializes itself as an after-tax cash flow for all capital suppliers its present value is computed using the Weighted Average Cost of Capital.

$$Firm\ Value = \sum_{t=1}^{\infty} \frac{FCFF_t}{(1 + WACC)^t} \quad (10)$$

### 1.2.1.4 FCFE - Free Cash Flow to Equity

Free Cash Flow to Equity represents the cash flow available to common stockholders and can be obtained by deducting the debt holders’ payments to FCFF. Contrary to the FCFF methodology, and given the nature of FCFE, its present value is computed using the risk adjusted rate of return for equity holders – the cost of equity – and will reflect the Equity Value of a Company.

$$Equity\ Value = \sum_{t=1}^{\infty} \frac{FCFE_t}{(1 + K_e)^t} \quad (11)$$

### 1.2.1.5 APV - Adjusted Present Value

The Adjusted Present Value, firstly introduced by Stewart C. Myers (Myers, 1974), comes as an alternative to the traditional use of DCF-WACC method based on the previous work developed by Modigliani and Miller (Miller, 1958). This model allows not only to analyze how much a given asset is worth but also to evaluate where value is generated since it separate each component of value and analyze them separately. These two models differ mainly on “how they account for the value created or destroyed by financial maneuvers” (Luehrman, Financial Management, 1997).

Adjusted Present Value begins with the same methodology as the other discounted cash flow models. First, one needs to forecast future cashflows and access a suitable terminal value and

discount those at a discount rate in line with the riskiness of the cash flows. We will do this assuming the company is totally equity financed and so discounting at the cost of equity for the unlevered company – unlevered cost of equity (Fernandez, 2004). Secondly, we will add up our valuation of the financing side effects, such as: interest tax shields, the costs of issuing new securities, the costs of financial distress and subsidies to debt financing (Stephen A. Ross, 2013).

$$APV = PV(\text{Unlevered Firm}) + PV(\text{Financing side effects}) \quad (12)$$

### **Interest Tax Shields**

Interest Tax Shields are a result of the “deductibility of interest payments on the corporate tax return (...) the interest deduction will reduce taxable income by the amount of the interest and so will reduce the tax bill by the amount of interest times the tax rate” (Luehrman, Financial Management, 1997) The latter statement holds true if all interest paid is tax-deductible (Fernandez, 2004). Although the Value of Tax Shields (VTS) is one of the main concerns in this type of valuation, there is not a consensus on which is the best methodology to compute its present value. According to Meyers (1974), we should compute the present value of the tax shields at the cost of debt, assuming the riskiness of the tax payments is the same as from its underlying debt.

### **Bankruptcy Costs**

Capturing tax reductions through increasing the level of debt can be tempting. As “Modigliani and Miller argue that the firm’s value rises with leverage in the presence of corporate taxes” (Stephen A. Ross, 2013) due to the VTS. Nevertheless, we should bear in mind that increasing debt levels also brings some costs – namely, Financial Distress Costs. An optimal amount of debt derives from offsetting the up effects of tax shields with the down effects of financial distress costs.

### **Terminal Value**

Free Cash Flow Discount models consist on computing the present value of forecasted future cash flows. However, as we cannot estimate cash flows forever, one should estimate cash flows for the growth period and then, when growth is stable, a Terminal Value which represents all cash flows generated thereafter. According to Ross et al., (2013) Terminal Value is estimated by assuming a constant perpetual growth rate for cash flows beyond the horizon, T, so that:

$$TV_T = \frac{CF_T(1 + g_{CF})}{R_{WACC} - g_{CF}} \quad (13)$$

Computing the Terminal Value is of extreme importance as it carries great value for the valuation itself. Hence, an analyst should be careful because “any analysis is as accurate as the forecasts it relies on” (Tim Koller, 2010). The Free Cash Flow Methods previously presented, specifically expressing the Terminal Value are as follows:

$$Firm\ Value = \sum_{t=1}^n \frac{FCFF_t}{(1 + WACC)^t} + \frac{Terminal\ Value}{(1 + WACC)^t} \quad (14)$$

$$Equity\ Value = \sum_{t=1}^n \frac{FCFE_t}{(1 + K_e)^t} + \frac{Terminal\ Value}{(1 + K_e)^t} \quad (15)$$

### 1.2.2 Economic Value Added

Economic Value Added (EVA) is one of the applications of the residual income concept and aims to capture how much value is being created (destroyed). Residual income is considered to be the remaining income after deducting all costs related to the company’s capital (Pinto, et al., 2010). Thus, EVA is the Net Operating Profit after Taxes (NOPAT) less total capital costs and may be represented as follows (Fernandez, Three Residual Income Valuation Methods and Discounted Cash Flow Valuation, 2015):

$$EVA_t = NOPAT_t - (D_{t-1} + Ebv_{t-1})WACC \quad (16)$$

Fernandez, 2002 makes a note that the above described formula mixes accounting parameters (NOPAT, Debt and Equity at book value) with market parameters (WACC) which raises the need to some adjustments to be made (Pinto et al., 2010).

Related with the EVA concept is the Market Value Added (MVA) that results from the difference between the market value of a company and its book value. Fernandez, 2002 identifies MVA as the present value of the EVA discounted at the WACC. Hence:

$$MVA_0 = [E_0 + D_0] - [Ebv_0 + D_0] = PV(WACC; EVA) \quad (17)$$

### 1.2.3 Multiples Valuation

Multiple valuation is still one of the most used techniques in equity valuation. Despite DCF-based methods being the most accurate and flexible methods, Multiples Valuation are a useful,



practical and easy to use tool to confirm valuation results reflecting the “current mood of the market” (Damodaran). Generally, “a multiple summarizes in a single number the relationship between the market value of a company’s stock (or of its total capital) and some fundamental quantity, such as earnings, sales or book value” (Pinto et al., 2010).

There are two main methods in multiples valuation: the method of comparables which refers to valuing an asset based on multiples of similar assets; and the method of forecasted multiples which bases itself on forecasted fundamentals. In the case of comparables method, the notion of similar assets is critical because by similar firms we should understand the ones that “have the same operating and financial characteristics as the firm being valued” (Schreiner, 2007). Therefore, to conduct the valuation we first must select a peer group - a small group of companies that have identical growth, performance and risk profiles – understand why they have those multiples and then explore the differences. According to Koller, et al. (2010) one should select the peer group based on companies whose underlying characteristics lead to similar Return on Invested Capital (ROIC) and long-term growth.

There is a wide range of multiples based on capitalization, on company’s value and even on growth. Nevertheless, Fernandez (2017) shows that the most commonly used multiples by analysts for valuing European companies are P/E and EV/EBITDA. According to Koller et al., (2010) one should always start with EV/EBITDA because “it tells more about a company’s value than any other model”.

If in one hand, multiples approach presents several benefits by its simplicity, practicality and availability, on the other hand these same benefits represent also a weakness. According to Damodaran (2011) they can lead to inconsistent estimates of value due to: incorrect selection of a peer group; market over or under valuation; lack of transparency regarding the underlying assumptions.

### **Enterprise Value / EBITDA**

EV/EBITDA is a valuation indicator for the overall company. Koller et al., (2010) state that there are four factors that drive EV/EBITDA multiple: the operating tax rate, the cost of capital, the company’s growth rate and its ROIC – Return on Invested Capital:

$$\frac{EV}{EBITDA} = \frac{(1 - t)(1 - \frac{g}{ROIC})}{WACC - g} \quad (18)$$

There are several other Enterprise Value Multiples that can be used depending on the analyst preferences such as: EV/Sales, EV/Book Value, EV/EBITDA Growth. The main argument for using EV multiples rather than Price multiples is that EV multiples are relatively less sensitive to the effects of financial leverage (Pinto et al., 2010).

### **Price to Earnings**

Price/Earnings is the most used multiple in equity valuation from a wide range of other price multiples that might include: P/CE – Price to cash earnings, P/S – Price to sales and P/BV – Price to book value.

$$Price\ to\ Earnings = \frac{Price}{EPS} \quad (19)$$

Despite being extremely used, P/E also has some significant drawbacks mainly deriving from EPS characteristics. First, P/E has no meaning in a scenario with negative or low net income and secondly, EPS relies on accounting rules which can present some interpretation issues.

## **2 Valuation Model Choice**

Cellnex's current strategy aims towards an European expansion of their business which will require heavy capital investments that have been financed mostly by issuing debt. Since higher levels of capital might be needed to fund growth and given the fact that there are no guidelines for capital structure, the only thing we can expect is that capital structure will face some changes in the future. Therefore, and with a changing capital structure the model of choice is the Adjusted Present Value. Moreover, we believe that a detailed analysis to value creation and its origins assumes a major importance in Cellnex's context.

Additionally, a valuation based on multiples – Relative Valuation – will be performed so that we can value Cellnex with a different perspective. This will allow us to better understand how the market values similar companies and to what extent it differs to the results given by the APV Model.

### 3 Industry Overview

#### 3.1 Telecommunication Services Industry: Overview

*“Greater speed, flexibility and a willingness to collaborate are critical – both for creating new revenue opportunities as well as reducing risk and operating expense – if providers are to maintain their industry leadership.” – IBM*

Telecommunication Services Industry comprehends companies operating wireless and/or fixed-line telecommunication networks for voice, data and high-density data. Telecommunication is any communication over a distance, would it be via telephone, radio, television, wireless network or computer network. Telecom Industry companies build, maintain and operate telecommunication networks that enable one of the most important services to modern society: the ability to communicate intra and cross borders.

The Telecom Industry is highly dependable of technological advancements since those are the catalysts for the creation of new products and processes that affect the entire value chain. If at one time, there was the need for physical wires to exist connecting homes and businesses so that communication at distance would be possible, today, we live in a society of wireless technology, connecting people and moving data all over the world in seconds. As digital technology evolved, new technologies have been shaping the Telecom Industry and Mobile has

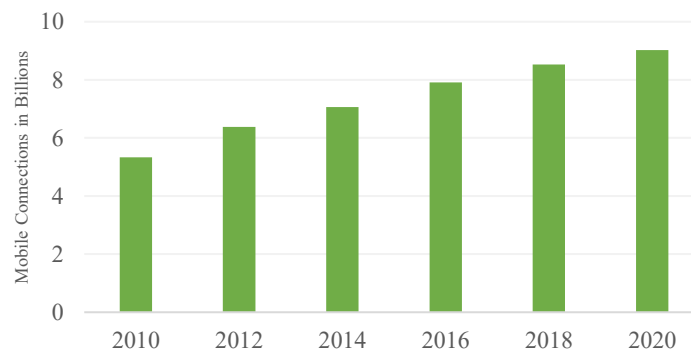


Figure 1 – Mobile Connections Worldwide

been the key driver of these transformational process.

Moreover, 3G technology<sup>4</sup>, for example, was a breakthrough technology in communications as it allowed faster communication services from voice to messaging and webservice. The introduction of internet-based communication services has been shifting away value from the

<sup>4</sup> 3G Technology is the third generation of wireless technology. It provides faster communication services than previous technologies, including voice, messaging and web services anytime anywhere with a seamless global roaming. Today, Telecom companies are already investing to prepare themselves for the roll-out of 5G technology (2020, expected) Find more about Mobile Wireless Technologies in the Appendix 1

traditional communication services requiring Telecom Companies to adapt their business models to stay competitive in the market<sup>5</sup>.

Today, to keep up with new technologies, Telecom Companies face high capital investments both for the development of their core products and services and the infrastructure that supports those same products and services. Telecom companies can own, operate and maintain these infrastructure assets by themselves or, as usually happens, they can establish alliances with other Telecom operators to collectively manage those assets and share its costs. As an alternative, it has been frequent to Telecom Operators to sell their network infrastructures to independent infrastructure operators and lease them back – Sell-to-Leaseback strategy. This strategy not only allows Telecom Operators to free-up cash that may be used to product development but also gives them access to the best practices on network management and, therefore, a network that is continuously being improved and up-to-date with recent technologies<sup>6</sup>.

### 3.2 TowerCo Sector

Given the developments of the Telecommunications Industry, the TowerCo sector – “wholesale infrastructure providers” – have been experiencing an expansion in terms of towers under management. Although communication towers have been acquired by TowerCos for quite some time in the United States and India, European TowerCos have been growing substantially mainly over the last decade.

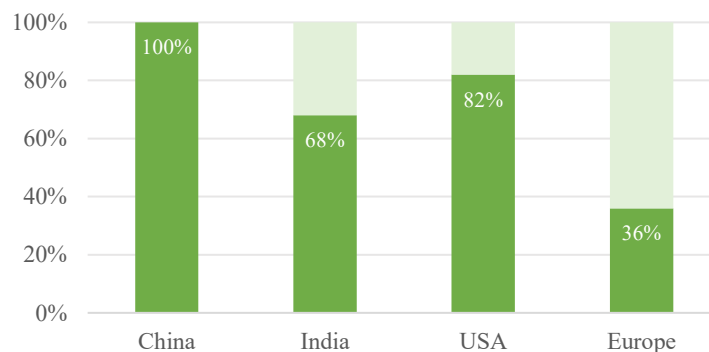


Figure 2 – Percentage of Independently Owned Towers. Source: EY

<sup>5</sup> EY ‘Changing ecosystem dynamics – past, present and future’ – Appendix 2

<sup>6</sup> Pros and cons sell to leaseback – Appendix 3

In early 2016, approx. 36% of the total towers in Europe were owned and managed by TowerCos whereas in United States the proportion of independently owned towers were nearly 82%. Therefore, there is still room for growth in the European Market.

China is the only continent where all towers are independently owned, being China Tower Company the world's largest TowerCo with 1 160 000 towers under management. In the second place comes Indus Towers (India) with 117 579 towers under management followed by American Tower with 99 600 towers worldwide. Deutsche Funkturm, from Deutsche Telecom, is the largest European TowerCo with 27 000 towers under management<sup>7</sup>.

TowerCos, as independent infrastructure providers, are responsible for investing in the development and maintenance of their own tower networks. Since they are specialized in Telecom Infrastructure it becomes easier to work towards an efficient network: increasing the number of network operators per tower and improving coverage in areas where it was not profitable for network operators to invest in additional infrastructure (e.g. Rural areas).

There are two main drivers for growth in the Tower Infrastructure Market:

**Coverage Obligations:** Usually imposed by country's telecommunication regulators, population coverage or network investment obligations are related to the allocation of frequencies requiring operators to provide certain degree of coverage until a pre-defined date.

**Mobile Data Traffic Growth<sup>8</sup>:** In Europe, mobile data traffic is expected to grow at a Compounded Annual Growth Rate (CAGR) of 42% from 2016 to 2021. The increasing popularity of mobile devices and applications as lead to a greater demand for mobile bandwidth supporting the exponential growth of data usage. As a result, MNOs focus on competing on network quality to which will rely even more on specialized infrastructure services.

In both cases, as operators need to increase coverage or network data capacity, spectrum<sup>9</sup> limitations might apply. Therefore, tower rental is an efficient solution for both cases since they can use a third-party infrastructure to increase their network.

---

<sup>7</sup> Please find additional data on the European Tower Market in Appendix 4

<sup>8</sup> Mobile Data Traffic Growth CISCO VNI - Appendix 5

<sup>9</sup> Spectrum Definition – Appendix 6

## 4 Cellnex Telecom S.A.

### 4.1 Company Overview

Cellnex Telecom is the main independent infrastructure operator for wireless telecommunication in Europe currently operating a network of more than 24 000 sites and providing services to network operators across Spain, Italy, Netherlands, France, United Kingdom and Switzerland. Formerly known as ‘Abertis Telecom’, Cellnex is listed in the continuous market of the Spanish Stock Exchange and is part not only of the selective IBEX 35 and EuroStoxx 600 Indices but also of the FTSE4Good Sustainability and Carbon Disclosure Project (CDP) indices. Its IPO is dated the 1<sup>st</sup> of April 2015 as a result of a spin-off from ABERTIS Group – which still holds a 34% equity stake in the company.

### Company Ownership

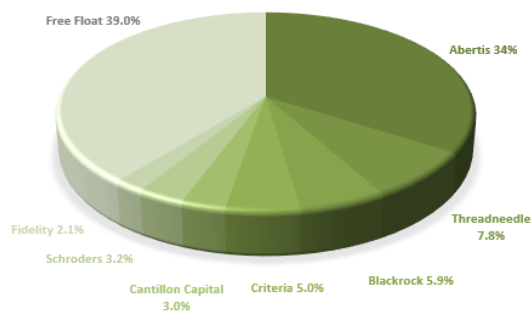


Figure 3 – Company Ownership as off 31st Dec 2016. Source: Cellnex Telecom S.A.

### Share Price



Graph 1 – Cellnex Share Price. Source: Thomson Reuters

## 4.2 Business Overview

Cellnex's business model is based on the provision and sharing of telecommunications assets, acting as an independent and neutral infrastructure provider for telecommunication operators<sup>10</sup>. Cellnex offers its customers the space they need to install and maintain their communications network equipment and provide wireless voice and data transmission. Additionally, it also provides 'the most advanced audiovisual services to national, regional and local broadcasters'.

### Products and Services

Cellnex provides services related to infrastructure management for terrestrial telecommunications divided in three main segments:

Telecom Infrastructure Services: providing the access to broadcasting and communication sites to Mobile Network Operators (MNOs) and other broadband and wireless telecom network operators through site hosting and co-location of telecommunication equipment.

Broadcasting Infrastructure: it consists in the network operation and radio-electric spectrum management to ensure distribution and broadcasting of digital television, radio or multi-screen environment content.

Other network services: it includes other connectivity services to telecom operators, Public Protection and Disaster Relief (PPDR) services, operations and maintenance services, urban telecom infrastructure, and others.

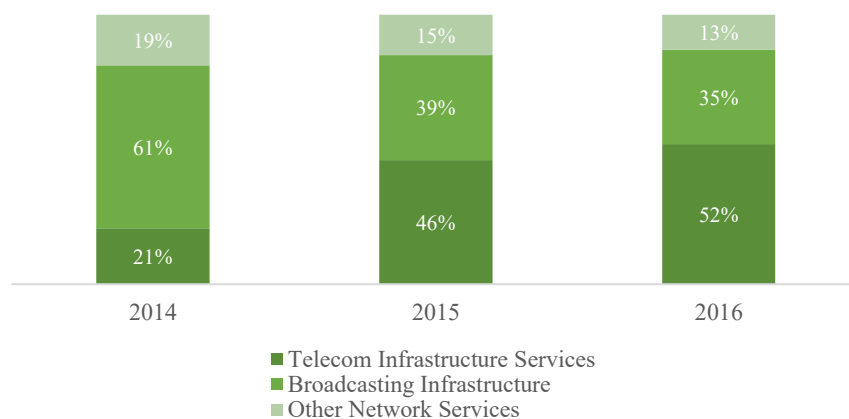


Figure 4 – Product segment as percentage of total revenues. Source: Cellnex Telecom S.A

<sup>10</sup> Tower Business Overview – Appendix 7

## Strategy

Since its IPO, Cellnex main strategy is the European expansion and consolidation focusing on the Telecom Infrastructure Services segment. They have been doing so primarily through M&A (inorganic) growth in a three-stage process: the first step is - Introduction - in a given country which allows to get a direct relationship with the costumers and identify new opportunities for growth; the second step is – Scale - aiming to growth the business in that country to gain a critical dimension and market position; and the third step is – Consolidation - where it is important to have a nationwide footprint to consolidate and further develop partnerships and cooperation programs with clients. Besides Telecom Infrastructure Services being the main focus for M&A growth, Cellnex might also consider this strategy to expand its Broadcasting Infrastructure if: it allows them to consolidate a leading position in a country other than Spain, or; if the relevant assets are part of a portfolio of sites similar to their portfolio.

Telecom Infrastructure Services organic growth is based on three distinct pillars:

Multi-Tenancy: by increasing the number of tenants in each tower site and therefore expanding the provision of site rental services to telecom operators, Cellnex is able to leverage their extensive existing tower infrastructure capitalizing on the growth in the number of PoP in their markets.

Rationalization: through the acquisition of tower sites from several carriers, Cellnex is able to rationalize the network by decommissioning redundant towers resulting on a single efficient network used by several carriers.

Built-to-suit: Cellnex aims to construct build-to-suit towers for telecom operators in certain instances as a way to increase their potential to capture future growth in co-location demand.

As for the Broadcasting Infrastructure segment, Cellnex priority is to maintain a leading position in the national digital TV sector and increase their market share in the regional and local TV and radio broadcasting markets by leveraging their know-how on the tower and network infrastructure market. According to Cellnex, Broadcasting Infrastructure shows significant revenue visibility since revenues are generated based on the number of signal transmitted rather than on the number of users that receive or see the signals. Therefore, it has proven itself resilient towards economic cycles and macro-economic downturns.



Regarding their third business segment, *Network Services & Other*, Cellnex aims to capture growth by: expanding and increasing data transmission connectivity services; leveraging their infrastructure and frequency planning know-how to design, roll-out and operate advanced telecom services for public administrations in the field of PPDR networks; developing urban telecom infrastructure solutions and small-cells; continuing to provide O&M services to telecom companies.

### 4.3 Historical Performance

#### Revenues

From 2011 to 2013 Cellnex revenues were growing at a -3% per year leading to approx. €385Mn in 2013. In 2014 revenues registered a growth of 13% resulting from an additional effort to boost revenues reinforcing the current business segments essentially through new leases to MNOs. After starting preparing it in 2014, 2015 was the IPO year with new sources of financing boosting the expansion to new geographies. To date, the biggest annual growth in revenues was in 2015 registering a rate of 40%. In 2016, revenues growth slowed down to 15% reaching approx. €700Mn.

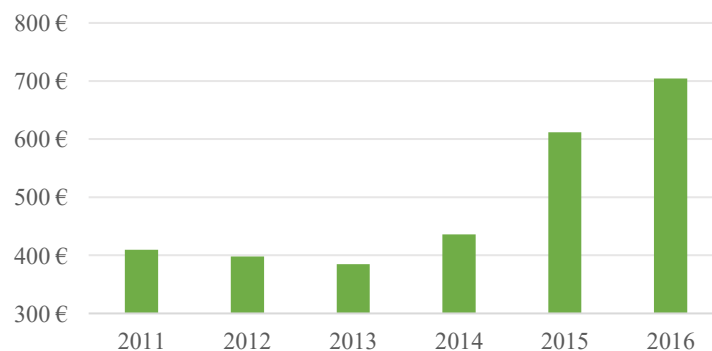


Figure 5 – Total Revenues in € Millions. Source: Cellnex Telecom S.A.

#### EBITDA and EBITDA Margin

In the previous graph, one can see both the evolution of Earnings Before Interest, Taxes, Depreciation and Amortization in gross value and in percentage of revenues – which stands as EBITDA Margin. Although it is possible to identify some positive correlation between the value of EBITDA and corresponding EBITDA Margin from 2011 to 2013 this is not true for the years of 2014 and 2015. In fact, besides EBITDA has been growing since 2013, EBITDA margin does not follow the same trend. The reason behind this behavior relies on the fact that operational costs have been growing at a higher rate than revenues for the years of 2014 and

2015 mainly due to the increase of operational costs relating to the IPO process that were recognized on those periods. 2016 already registered a slight increase on EBITDA Margin, to 39%.

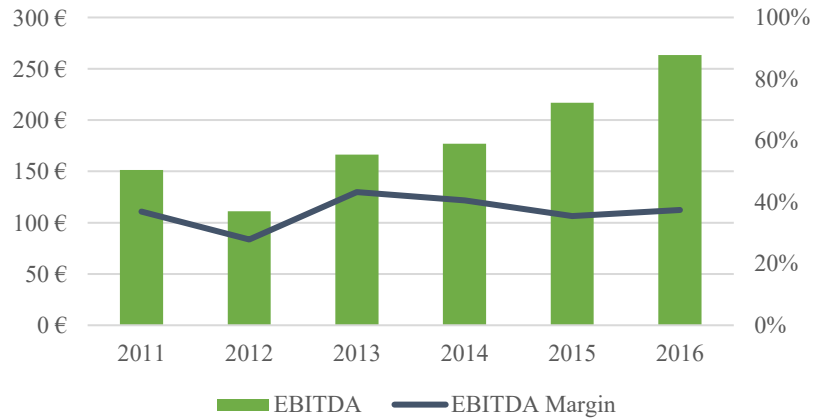


Figure 6 – EBITDA (€ Millions) and EBITA Margin (%). Source: Cellnex Telecom S.A.

### Operating Profit, Earnings Before Tax and Net Profit

In the graph below, it is possible to see the relation between Operating Profit, Operating Profit after Net Financial Costs and Operating Profit after Net Financial Costs and Taxes (Consolidated Net profit). From 2014 onwards, it becomes clear the effect of the increase in the debt level, leading to the increase of financial costs. Additionally, it is also interesting to see that in the year of 2015 a significant stake of the results for the period – Consolidated Net Profit – were possible due to tax policies. In the year of 2016 it is also possible to identify a favorable tax policy has the effective tax rate was 1.5%.

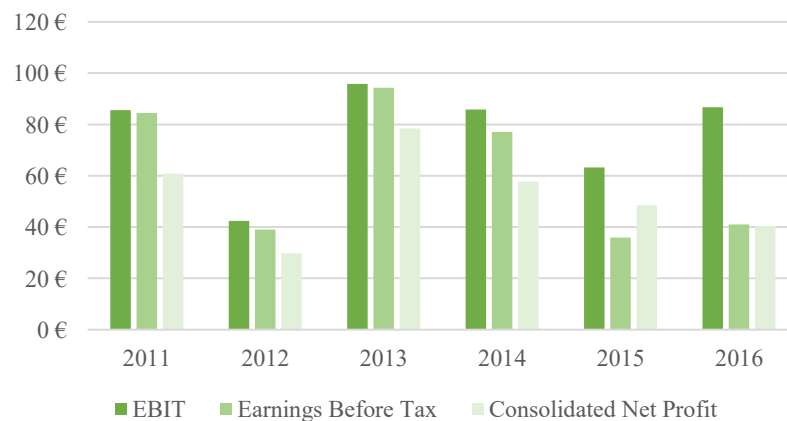


Figure 7 – EBIT, Earnings Before Tax and Consolidated Net Profit in €Millions

## Capital Expenditures and Depreciation and Amortization

In terms of Capital Expenditures, and for the years prior the IPO, these amounts were mainly due to the investment in existing assets. From 2014 onwards, the expansion strategy led to higher levels of M&A activity requiring higher levels of Capital to fund the acquisition of new assets. Therefore, and as the asset base increased significantly during 2014-2016, we can also see a significant rise on the level of Depreciation and Amortizations.

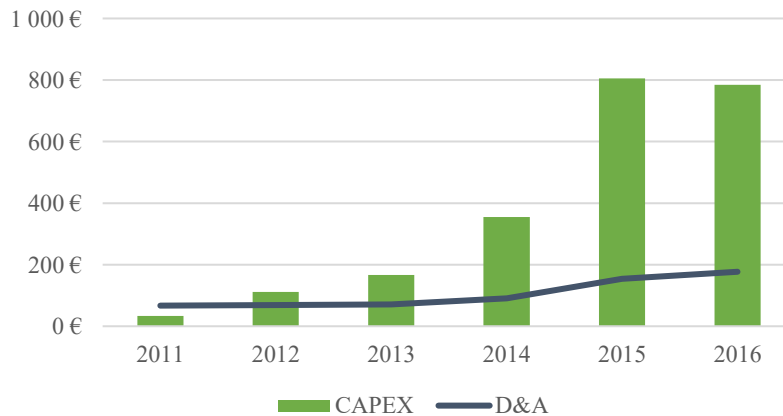


Figure 8 – CAPEX, Depreciations and Amortization in €Millions

## Total Debt and Net Debt

Below, we can see the company's Total Debt and Net Debt from 2011 to 2016. The access to the markets allowed Cellnex to capture the funding they needed to expand. Total debt in 2016 represents 10.6x the debt level in 2013 and 3.9x the debt level in 2014. One may also notice that the level of cash the company holds is also higher as they need to be prepared to meet their current obligations.

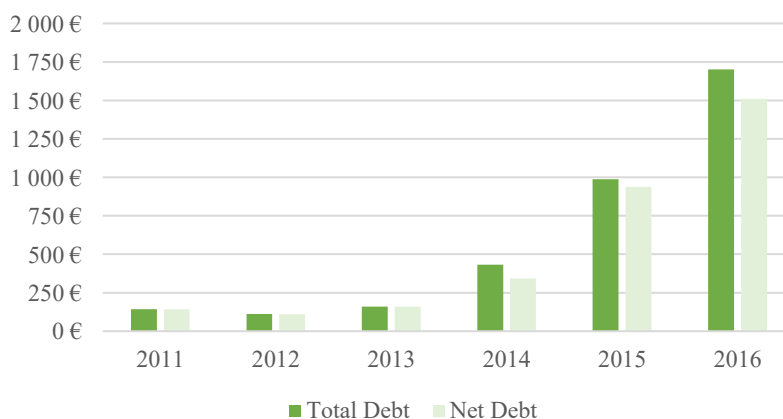


Figure 9 – Debt and Total Debt in €Millions

## Working Capital

From 2011 to 2016, Working Capital has registered some significant changes being ‘Trade and other receivables’ and ‘Other current assets and liabilities’ the accounts that have changed more expressively. As reported, Inventories represent a small portion of Working Capital as it comprehends mainly technical equipment which, after installation, will be sold.

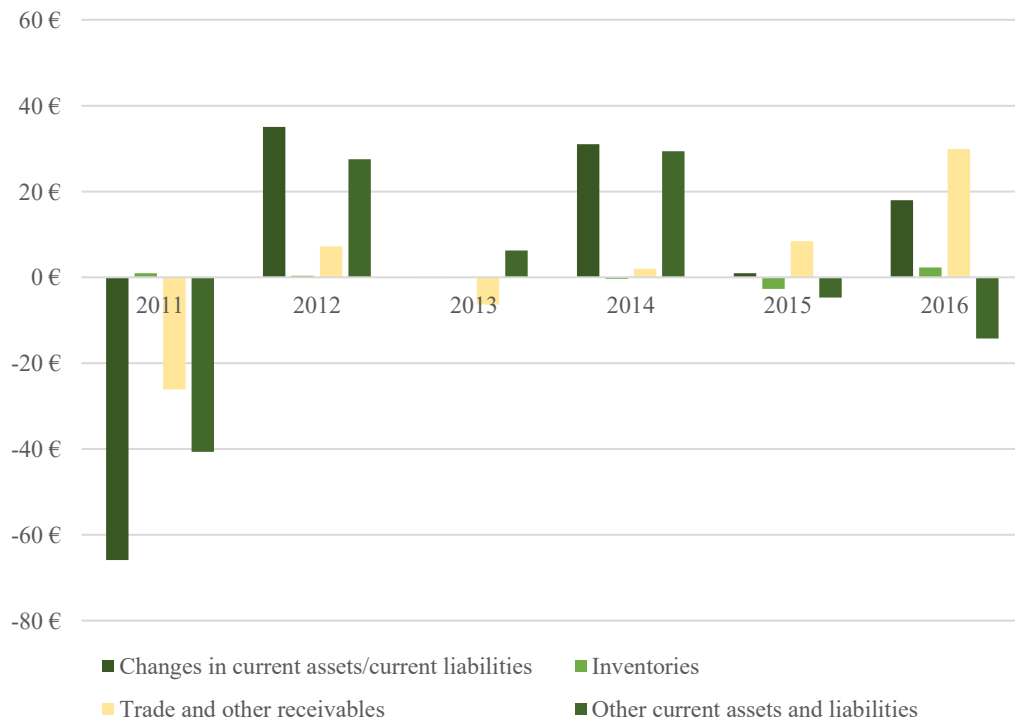


Figure 10 – Working Capital in €Millions

## 5 Company Valuation

This section presents the valuation of Cellnex Telecom S.A.. As explained in Section 2, an Adjusted Present Value approach will be used to conduct the valuation followed by a sensitivity analysis to test the impact of a change on key valuation metrics. Additionally, the APV valuation results will be compared with the ones resulting from a Relative Valuation based on Multiples so that we can assess how the market values similar companies.

The next sections will explain the details and assumptions made regarding the forecasting exercise needed for the APV model and the assumptions on the model itself.

The currency of this valuation is Euros (€).

### Explicit period

We will assume an explicit period of 10 years going from 31<sup>st</sup> Dec 2017 to 31<sup>st</sup> Dec 2027. The explicit period translates what we will generally define as 3 different phases:

- A first phase where M&A Growth will be more evident. This phase identifies a period during which the M&A activity is believed to be more intense following recent growth [2017-2020]
- A second phase where M&A Growth will be gradually slowing down as Cellnex focus is assumed to be the consolidation of its business, essentially through network efficiencies. Growth is also expected to be originated from DAS Nodes projects both in term of existing networks and additional projects (e.g. IoT and Public networks). [2020-2026]
- And lastly, a third phase, where Cellnex is believed to become stable. [2027+]

### Terminal Growth Rate

When analyzing growth, and giving Cellnex's current strategy, it is clear to see that there are some limits to growth as there might be a limited amount of tower portfolios to be acquired in Europe. Although it is mentioned that DAS Nodes are the future growth driver for Telecom Infrastructure Services there is still some uncertainty regarding quantifying its effects.

In valuation, it is common to assume as Terminal Growth Rate a proxy for the long-term economy growth usually estimated to be around 2%. Nevertheless, we will take a more conservative approach on long term growth accounting for the existing uncertainties and assuming a Terminal Growth Rate of 1%.

## 5.1 Forecasting Growth

As previously explained, Cellnex business highly relies on its infrastructure. Therefore, the first step into the forecasting exercise consists in accessing future infrastructure growth based on company guidelines and market expectations. In this valuation, we will forecast infrastructure based on Points of Presence [PoPs] which will be a valuable input to our model.

Overall it is forecasted that the total number of Cellnex's new PoPs will grow at a CAGR of 10.4% from 2017 to 2027, accounting for 78 750 PoPs in 2027. We forecasted both Organic and M&A growth new PoPs taking in account the following guidelines<sup>11</sup>:

**Organic Growth:** Cellnex presents a guidance of 3-4% organic growth guideline until 2019 and this is assumed to be a reasonable guideline for years to come. The nature of organic growth, however, may vary throughout the explicit period. If, to date, organic growth has been greatly influenced by consolidation and improvements on network infrastructure boosted by M&A activity, those effects are expected to decrease through the explicit period. Nevertheless, we also believe that the possible down effects of M&A activity on Organic New PoPs will be overcome by the positive effects of increasing new DAS Nodes projects, keeping organic growth within the mentioned guidelines.

**M&A Growth:** Cellnex does not present a guideline for M&A new PoPs since it depends on Cellnex's investment opportunities throughout the years and the quality of the portfolios acquired. Besides being hard to accurately forecast M&A Growth, it is also very important to include it in the valuation since it has been and will be a key driver of growth. As a way of overcoming this challenge and so that the forecasted numbers were realistic, some research was made regarding the current state of the European Market, its development in recent years and the current expectations and forecasts regarding the market as a whole for years to come.

One of the most important sources of information was TowerXchange, a leading research institution on Tower Markets worldwide. According to TowerXchange<sup>12</sup>, at year end 2020, 44% of the total 600 000 European tower structures will be owned by independent TowerCos. If we assume that Cellnex maintains its current market share of 22.2% – Cellnex at year end 2016 owns 16 828 towers versus European total of 75 867 towers reported by TowerXchange – it implies that Cellnex will own 59 067 towers in

---

<sup>11</sup> Please see detailed information regarding growth forecast in Appendix 12 – Base Case

<sup>12</sup> *TowerXchange Europe Dossier 2017*

2020. Additionally, if we assume a Tenancy Ratio of 1.65, which is considered to be a near efficient market tenancy ratio according to Analysys Mason<sup>13</sup>, it gives us approximately 97 460 PoPs.

When analyzing these results, and taking in account both the recent nature of Cellnex Telecom and the overall state of the market, we found that this growth might be a little overestimated. In fact, TowerXchange lowered their forecasts from 2016 to 2017 in about 8% and agreed that, in reality, this growth might take longer to materialize. Therefore, their forecasts and the above described rationale were used just as a reference to estimate M&A Growth – we assumed that the forecasted values for 2020 are an approximation for the European market structure in a mature stage – which according to our model occurs only in the 2027 horizon.

Table 1 – Forecasted Number of Points of Presence (PoPs). Source: Cellnex Telecom S.A. | Own Calculations

	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F
Total PoPs (1 Jan)	10,680	20,740	24,698	29,267	34,682	40,404	46,263	52,045	57,510	62,399	67,078	71,774	75,721
Organic Growth	844	925	988	1,171	1,387	1,616	1,851	2,082	2,300	2,496	2,683	2,153	1,514
% growth		4.5%	4.0%	4.00%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	3.0%	2.0%
M&A	9,216	3,033	3,581	4,244	4,335	4,242	3,932	3,383	2,588	2,184	2,012	1,794	1,514
% growth		14.6%	14.5%	14.5%	12.5%	10.5%	8.5%	6.5%	4.5%	3.5%	3.0%	2.5%	2.0%
Total PoPs (31 Dec)	20,740	24,698	29,267	34,682	40,404	46,263	52,045	57,510	62,399	67,078	71,774	75,721	78,750
% growth		19.1%	18.5%	18.5%	16.5%	14.5%	12.5%	10.5%	8.5%	7.5%	7.0%	5.5%	4.0%

## 5.2 Operational Forecasting

### 5.2.1 Revenues

#### Telecom Infrastructure Services

The Telecom Infrastructure Services revenues are estimated based on the forecasted number of Points of Presence for each period and the Revenue per PoP registered in 2016 aiming to reflect the most recent pricing practice. As revenues are based on long-term contracts, the price per PoP is not expected to change significantly over the explicit period. Other operating income and advances to costumers are defined as a percentage of revenues based on the average weight it represented for the years of 2015 and 2016.

<sup>13</sup> Analysys Mason – Global Trends for Tower Markets Report (2016)

## Broadcasting Infrastructure

The Broadcasting Infrastructure segment is concentrated in the Spanish market and there are no expectations to Cellnex to expand this activity to other markets any time soon. Hence, and given the stable outlook for the Spanish Broadcasting market, revenues are forecasted as a moving average for the last two periods resulting in a stable revenue generation.

## Other Network Services

Other Network Services are expected to follow the same trend as Telecom Infrastructure Services segment since they are greatly related to that activity. Therefore, Other Network Services are forecasted as a percentage of total revenues based on its average weight in 2015 and 2016.

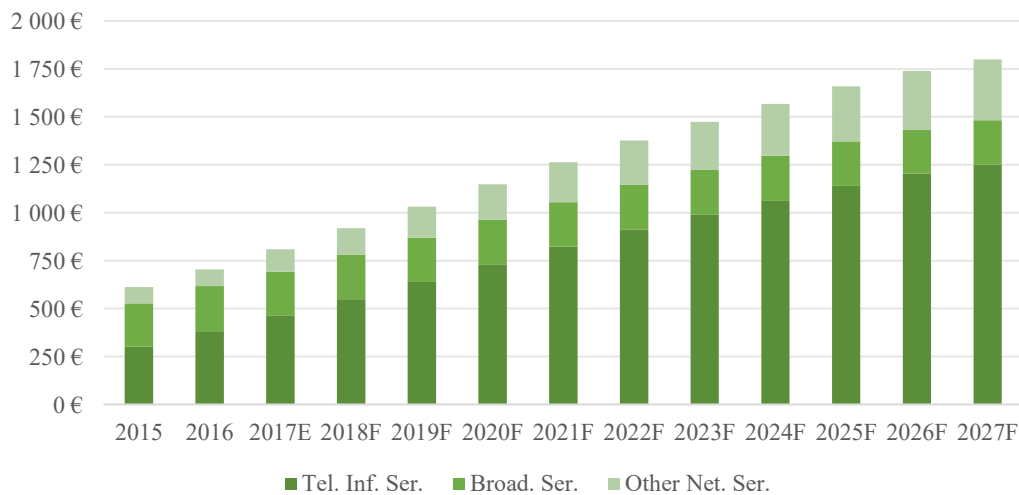


Figure 11 – Revenues per Segment in €Millions. Source: Cellnex Telecom S.A | Own Calculations

### 5.2.2 Operating Expenses and EBITDA Margin

As reported, Operating Expenses<sup>14</sup> are divided into four major categories: *Staff Costs*, *Other operating expenses*, *Change in provisions* and *Losses on fixed assets*. The latter two were kept constant for simplicity. The forecasting of Staff Costs was based on an estimate of the number of Staff (Cellnex Group) for each year times the average Cost/Staff registered in 2015 and 2016. At year end 2016, and as a comparison to 2015, the staff balance increased by 58 employees both as a result of regular recruitment needs and incorporation of new businesses into the group.

<sup>14</sup> Please see detailed information in Income Statement – Appendix 14



Therefore, and as an approximation, it was assumed that this staff balance would register an increase of 50 employees per year.

*Other operating expenses* include Repairs and Maintenance, Leases and Fees, Utilities and Other Operating Costs and are forecasted as a percentage over revenues. Cellnex mentions that, if wasn't for the effects of M&A activity, these operating expenses would have remained relatively flat over the last years. Furthermore, significant operational efficiencies have been reached regarding energy, optimization of ground leases and network re-designing leading to an overall reduction of its weight relatively to revenues of 1.4%. Hence, and assuming that Cellnex Telecom S.A. will have capacity to further present operational cost reductions, we assume a yearly decrease of 1% it the weight of Other Operating Expenses over total Revenues.



Figure 12 – Operating Expenses in €Millions. Source: Cellnex Telecom S.A | Own Calculations

Due to the before mentioned growth both in terms of revenues and operational costs, EBITDA shows itself gradually increasing, going from 40.0% in 2017 to 54.7% in 2027. In historical terms, as described in previous sections, Cellnex's EBITDA Margin was about 38%. After registering an EBITDA margin of 37% in 2016, our forecasts imply that Cellnex will be able to increase its operational efficiency in a very significant way. Many times, and as it will be discussed later on this dissertation, American Tower Companies are seen as the role model for European Tower Companies. If we consider that American companies currently have EBITDA Margins of nearly 60%, we can see that Cellnex's EBITDA Margin actually goes in accordance with its American Peers<sup>15</sup>.

<sup>15</sup> Please find additional data on Appendix 13 regarding American Peers

Table 2 – EBITDA Margin. Source: Own Calculations

	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F
EBITDA Margin	35.4%	37.4%	40.0%	42.1%	43.9%	45.6%	47.2%	48.7%	50.0%	51.3%	52.5%	53.6%	54.7%

### 5.2.3 CAPEX, Depreciations and Amortizations

Total capital expenditures (Capex) comprehends: *Maintenance Capex* - investment in existing tangible or intangible assets, such as investment in infrastructure, equipment and information technology systems, and are primarily linked to keeping sites in good working order, but which excludes investment in increasing the capacity of sites; *Expansion Capex* - Investment to the network of tower infrastructures, equipment for radio broadcasting, network services, cash advances, land acquisitions and others that generate additional adjusted EBITDA; *M&A Capex* - Investments in shareholdings of companies as well as significant investments in acquiring portfolios of sites (asset purchases).

Besides not being a consensual methodology between practitioners, in this valuation we will consider M&A investments as Capital Expenditures. Following Damodaran's perspective, if one accounts for M&A effects on company growth – as we did in this valuation – one should also account for its costs.

Maintenance Capex will be forecasted based on company guidelines – 3% of revenues. However, from 2023 onwards, we consider that maintenance capex will be 5% of revenues aiming to reflect the need of additional investments to maintain their assets both due to the greater dimension of the portfolio and the new assets related to DAS Nodes projects.

Expansion Capex will also be within the company guidelines of 5-10% of total revenues. From 2022 onwards, and again, we assume that it represents 10% of revenues aiming to reflect the additional investments related to the development of DAS Nodes projects.

M&A Capex will be forecasted based on the M&A PoPs for each period and an historical Capex/PoP estimate. However, for the year of 2017, we considered the CAPEX/PoP announced in their latest results presentation so that a more realistic estimate would be made. For all the other periods, the CAPEX/PoP input was based on the corresponding average for the years 2015, 2016 and 2017E.

Once total investment is calculated, we proceed to the corresponding adjustments to tangible and intangible assets to estimate the corresponding depreciation/amortization and resulting

carrying amounts. For each year, we forecasted not only the effects of additions (Capex) in tangible and intangible assets but also the effects from the incorporation of new assets (“Changes in consolidation scope”), based on an asset contribution per forecasted M&A PoPs following the same rationale as other estimates in this dissertation.

As it is common to happen in recent companies with the objective of deferring tax payments in their prior years, Cellnex Telecom mentions that they recur to accelerated depreciation/amortization methods. Since higher rates are used in prior years, there is the need for some adjustments regarding the subsequent periods. From 2017 to 2019, as the M&A PoPs acquired continue to grow, we assumed the same depreciation rates as observed in 2015 and 2016. From 2019 onwards, we estimated a reduction of 6% per year<sup>16</sup> in the annual depreciation/amortization rate translating the before mentioned adjustments.

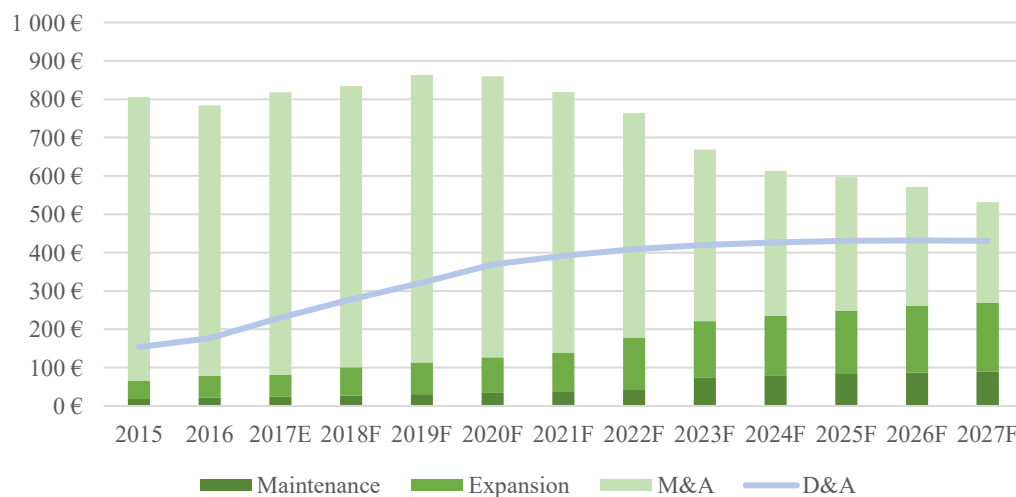


Figure 13 – CAPEX, Depreciations and Amortizations in €Millions. Source: Cellnex Telecom S.A. | Own Calculations

#### 5.2.4 Working Capital

Working Capital is estimated as the difference between non-cash current assets and non-debt current liabilities including current deferred tax assets and liabilities as it is believed that deferred taxes will be continuing to be present and influence short term operations. All accounts are estimated as a percentage of total revenues based on the corresponding 2016 weights with the exception of deferred taxes that were treated separately. Deferred tax assets were forecasted using a moving average and assuming that they will be fairly constant throughout the explicit

<sup>16</sup> Based on the reported deferred tax liabilities arising from accelerated depreciation and amortization and assuming a tax rate of 25% (Spanish Corporate Tax Rate) we estimated what would be the “real” rate for the years of 2015 and 2016. The 6% reduction rate aims to bring the depreciation/amortization rates in year 2027 to the estimated “real” rates.

period whereas the deferred tax liabilities are expected to decrease especially due to the slowdown of M&A activity.

Table 3 – Changes in Working Capital in €Millions. Source: Own Calculations

	2016	2017E	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F
Changes in Working Capital	-21.68 €	6.60 €	-1.54 €	-2.47 €	-1.24 €	0.17 €	1.78 €	3.59 €	1.10 €	-0.43 €	0.08 €	0.74 €

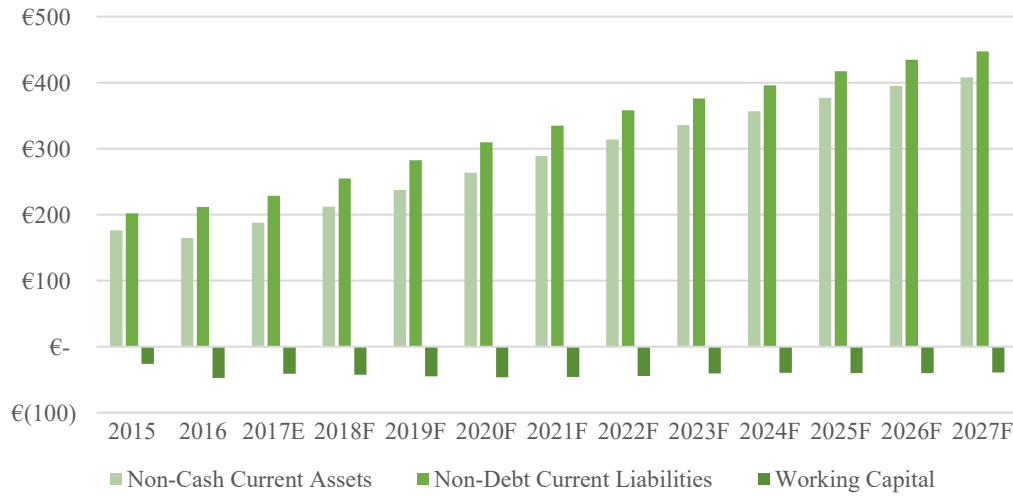


Figure 14 – Working Capital Dynamics in €Millions. Source: Own Calculations

## 6 APV Valuation

This section will introduce the application of the Adjusted Present Value methodology to value Cellnex Telecom. As discussed before, the APV approach starts by evaluating the company as if it was all equity financed and then accounts for the respective financing effects. Therefore, we will start by estimating capital costs, both from equity and debt, followed by an analysis on the forecasted debt plan and corresponding financing effects.

### 6.1 Unlevered Cost of Equity

Following Equation 5 for the Unlevered Cost of Equity calculation we will need to access the Risk-Free Rate, the Unlevered Beta and the Market Risk Premium. Additionally, we also accounted for a Country Risk Premium which aims to reflect the different economic and political realities of the countries in which Cellnex is present. Given the fact that several inputs and assumptions need to be made to compute the Unlevered Cost of Equity, a sensitivity analysis will be performed.

As a proxy for Risk Free Rate, the 10Y German Bund is used as it is a common practice in European valuations. Therefore, a Risk-Free Rate of 0.37% is considered.

For the Unlevered Beta calculation, the procedure mentioned on Equation 4 applies using the following data: Levered Beta from Thomson Reuters (2Y Weekly); Market Debt to Equity (as off 31<sup>st</sup> October); and expected corporate tax rate of 25%. In terms of Market Risk Premium, there is not a consensus method to estimate it and some authors even affirm that Market Risk Premium should be defined as a range of values instead of a fixed estimate. In this valuation, we estimated Market Risk Premium to be 6% as it is a common practice in valuing European Companies and goes in accordance with the Implied Market Risk Premium for the Spanish Market in 2016<sup>17</sup>.

Country Risk Premium is not a consensus methodology to valuation practitioners as some affirm that: 1. Country Risk Premium is diversifiable; 2. Global Capital Asset Pricing Model where Betas already reflect for country risks; 3. Country Risk is better reflected in the cash flow which states that if there are any effects from economic or political nature they are already reflected in the cash flow. Nevertheless, as we are valuing Cellnex in consolidated terms, we still believe in the usefulness of this premium approach. The Country Risk Premium is

---

<sup>17</sup> Implied Market Risk Premium Spain – Appendix 8

calculated based on each country expected weight on total revenues and the Government 5Y CDS contract spread<sup>18</sup>.

Below, are the detailed results:

*Table 4 – Unlevered Cost of Equity Calculations. Source: Own Calculations*

Risk Free	0.37%
Unlevered Beta	0.51
Risk Premium	6.57%
Market Risk Premium	6.00%
Country Risk Premium	0.57%
<b>Unlevered Cost of Equity</b>	<b>4.01%</b>

## 6.2 Cost of Debt

Cost of debt is estimated based on the methodology suggested by Damodaran where he presents a spread (Debt Risk Premium following Equation 6) related with the company interest coverage ratio and corporate rating. At the date of this valuation, Cellnex Market Capitalization is higher than \$5bn and Cellnex's rating is BB+ (Standard&Poors) which corresponds to a spread of 2.50% resulting in a cost of debt of 2.87%. Although the forecasted interest coverage ratio (2.11x EBIT) does not exactly match the interest coverage ratio limits for the BB+ rating we see the corporate rating as more accurate for the purpose of assessing the spread<sup>19</sup>.

## 6.3 Tax Rate

Cellnex effective tax rate in the year of 2016 was 1.5% against the Spanish corporate tax rate of 25%. These differences are mainly due to tax benefits arising from Notional Interest Deductions, R&D Deductions and Know How Incentives. In its last results presentation, Cellnex clarifies that although some changes might occur in the extent of the contribution of each tax benefit, the overall effective tax rate will be sustainable in the medium term. Therefore, we assume a similar effective tax rate until 2019, and a tax rate of 25% afterwards.

<sup>18</sup> Country Risk Premium – Appendix 9

<sup>19</sup> Cost of Debt spreads according to Damodaran – Appendix 10

## 6.4 Free Cash Flow to the Firm

At this stage, we are able to access Cellnex's Free Cash Flows and Terminal Value (TV) which will allow us to compute the company value as if it was all equity financed. Hence:

Table 5 – Free Cash Flow to Firm in €Millions. Source: Own Calculations

	2017E	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F
FCFF	83.1 €	118.3 €	167.5 €	193.7 €	254.2 €	296.7 €	340.0 €	390.5 €	433.8 €	477.1 €	517.6 €
M&A Capex	571.8 €	569.3 €	581.6 €	569.2 €	527.5 €	453.8 €	347.2 €	293.0 €	270.0 €	240.7 €	203.2 €
FCFF (Adjusted)	- 488.7 €	- 451.1 €	- 414.1 €	- 375.5 €	- 273.3 €	- 157.1 €	- 7.2 €	97.5 €	163.8 €	236.3 €	314.4 €
FCFF TV											10,557.7 €

Besides the fact that all previously made assumptions are key for the Free Cash Flow estimation, the assumption regarding the M&A Capex does have a great impact as we can see from the table above.

## 6.5 Debt Plan and Interest Tax Shields

Debt is forecasted on a yearly basis regarding Cellnex's financial position and a guideline for Net Debt to Adjusted EBITDA<sup>20</sup>. Net Debt to EBITDA is a common leverage ratio used to analyze telecom related companies and it intends to show how many years it would take for the company to pay back its debt if net debt and EBITDA were held constant. Cellnex adjusts its EBITDA to the effects of Non-Recurring Items arising from M&A activity such as: Costs related to acquisitions; Tax associated with acquisitions; Lease Cancellation Costs; Prepaid expenses and Advances to Costumers.

To forecast debt through Net Debt to Adjusted EBITDA ratio, some assumptions also need to be made regarding cash holdings and adjustments to EBITDA. While the latter are estimated based on the Non-Recurrent Items value contribution per M&A PoP, the amount of cash the company holds in each period will be defined as a percentage of total operational costs – which, in 2016, represented, 44% of total operational costs. Even though this might seem excessive, when analyzing similar European companies we can see that they currently have cash holdings representing similar weights of their total operational costs<sup>21</sup>. Furthermore, in 2017's half-year results, Cellnex states that they have €567Mn in Cash (nearly 3x the cash position reported at year end 2016) and a total available liquidity of €1.6Bn (Cash + Credit Facilities). Hence, in the early years of our forecast we will assume a similar weight as its European Peers, which will experience a reduction as time goes by and business evolve.

<sup>20</sup> Guideline of 6 to 6.5 (Max) for Net Debt to Adjusted EBITDA

<sup>21</sup> See section Appendix 13 on Peers' Cash Holdings

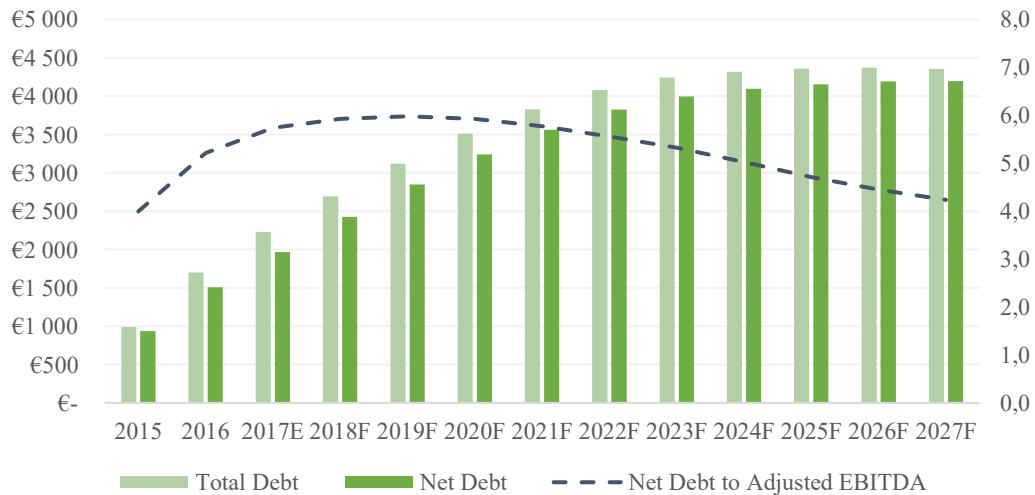


Figure 15 – Total debt and Net debt in €Millions and Net Debt to EBITDA ratio. Source: Own Calculations

Interest expense is then calculated applying the before mentioned cost of debt to the total debt at the beginning of the year. In the table below are described both the interest amounts for each forecasted year and the corresponding Interest Tax Shields. The ITS Terminal Value was computed using the long-term growth rate of 1% and the cost of debt as discount rate following Myers (1970).

Table 6 – Interest Expense and Interest Tax Shields in €Millions. Source: Own Calculations

	2017E	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F
Interest Expense	44.4 €	64.0 €	77.3 €	89.5 €	100.8 €	109.9 €	117.1 €	121.7 €	124.0 €	125.1 €	125.5 €
Interest Tax Shield	11.1 €	16.0 €	19.3 €	22.4 €	25.2 €	27.5 €	29.3 €	30.4 €	31.0 €	31.3 €	31.4 €
ITS TV											1,694.6 €

## 6.6 Bankruptcy Costs

Despite the benefits of increasing debt to capture Tax shields, high levels of debt might bring the company to a financial distress situation. If that happens, Cellnex will face some extra costs – bankruptcy costs - resulting not only from the need of contracting lawyers, consultants and other professionals to help overcome that situation (Direct costs) but also coming from the lack of confidence shareholders would have on the overall business (Indirect costs).

The methodology used to estimate Bankruptcy Costs consists in determining a Default Probability based on a Credit Default Swap and a Loss Given Default that expresses how much of the company's value is lost in case it defaults. According to data available in Thomson Reuters terminal regarding Cellnex's 5y CDS contract the Default Probability is 7.04% and the Loss Given Default is estimated to be 60% of company value.



It is important to note that there is not a consensus method to account for bankruptcy costs specially because it is very hard to have a good understating of what would be the real extent of those costs since each case would be unique.

## 6.7 Valuation results

Finally, we have all the components to compute Cellnex's Value using the Adjusted Present Value approach:

*Table 7 – APV Model Results in €Millions. Source: Own calculations*

PV Unlevered Firm	6,180.39 €
PV FCFF	-946.76 €
PV FCFF TV	7,127.15 €
PV Financing Benefits	1,494.44 €
PV ITS	217.44 €
PV ITS TV	1,277.00 €
PV Bankruptcy costs	261.21 €
<b>Enterprise Value</b>	<b>7,413.62 €</b>
Debt @ MKT Value 31Dec_17	2,312.46 €
Cash Holdings @ 31Dec_17	262.54 €
Minority Interests	81.42 €
<b>Equity Value</b>	<b>5,282.28 €</b>
Shares Outstanding (Nº)	231,570,240
<b>Price per share (€)</b>	<b>22.81 €</b>

As expected from the previous analysis to the Free Cash Flow to Firm (6.4), Cellnex's unlevered value comes from Terminal Value enhancing the reason why it is so important in valuation.

The PV of the Unlevered Firm is calculated by discounting the corresponding cash flows at the Unlevered Cost of Equity (4.01%). And the PV of Interest Tax Shields is calculated by discounting the corresponding Tax Shields at the Cost of Debt (2.87%).

The Enterprise Value is, therefore, approximately € 7.4Bn resulting both from the Unlevered Firm Value and the corresponding financing effects. To arrive to the Equity Value some adjustments need to be made regarding Market Value of Debt, Cash Holdings and Minority Interests at year end 2017.

Market Value of Debt comprehends both Market Value of Bonds and Loans Cellnex currently has<sup>22</sup>:

**Bonds:** Cellnex currently has 6 bonds outstanding. Three of them are traded on the market so the corresponding market values were derived from Thomson Reuters. The other three bonds, as they are not traded, their market value is estimated by discounting all cash flows (interest and principal repayment) to the cost of debt. Hence, we have that Bonds at Market Value account for approx. €2.001Mn.

**Loans:** Cellnex currently has €312Mn in Loans as reported in their half year results 2017. Additionally, they state that “The Group’s bank borrowings were arranged under market conditions and, therefore, their fair value does not differ significantly from their carrying amount”. Book value will be considered as market value.

Given the number of shares outstanding at the date of this valuation, Cellnex’s price per share is valued to be 22.81€ (twenty-two euros and eighty-one cents per share).

## 6.8 Sensitivity Analysis

With the objective of testing the results presented at the previous sections, a sensitivity analysis is performed taking in account the most critical assumptions made, namely PoP Growth and Long-Term Growth and Cost of Capital.

### 6.8.1 Points of Presence Growth

Three scenarios were defined. The Base Case Scenario is the scenario used in the APV valuation which presents a CAGR of 10.4% in terms of Total PoPs from 2017 to 2027. The other two scenarios represent a Compounded Annual Growth Rate variation of 2% relatively to the Base Case Scenario and considering changes both in Organic and M&A growth.

---

<sup>22</sup> Market Value of Debt Calculations – Appendix 11

Table 8 – PoPs Growth sensitivity analysis. Source: Own calculations

	<b>-2% CAGR</b>	<b>Base Case</b>	<b>+2% CAGR</b>
<b>PoPs 2017</b>	29,267	29,267	29,267
<b>PoPs 2027</b>	65,583	78,750	91,251
<b>CAGR</b>	8.4%	10.4%	12.4%
<b>Price Per Share</b>	29.55 €	22.81 €	12.71 €

One should remember that forecasted PoPs for 2017 goes in accordance with the growth path registered in 2016 and available information until the date of this valuation. Therefore, we only consider scenario changes from 2018 onwards<sup>23</sup>.

The clearest conclusion we can draw from the data above is that, and holding all other assumptions constant, the slower growth path is the one that maximizes value. This might be explained by that fact that, in this model, slower growth also means lower M&A investments which will have a positive effect on Free Cash Flow.

## 6.8.2 Terminal Growth Rate and Unlevered Cost of Equity

Table 9 – Unlevered Cost of Equity and Terminal Growth Rate sensitivity analysis. Source: Own calculations

	<b>Ku/g</b>	<b>0%</b>	<b>0.50%</b>	<b>1%</b>	<b>1.50%</b>	<b>2%</b>
<b>(-1%)</b>	<b>2.52%</b>	23.58 €	30.95 €	42.03 €	60.53 €	97.71 €
<b>(-0.5%)</b>	<b>3.02%</b>	17.66 €	22.95 €	30.46 €	41.98 €	62.13 €
	<b>3.52%</b>	13.28 €	17.30 €	<b>22.81 €</b>	30.91 €	44.39 €
<b>(+0.5%)</b>	<b>4.02%</b>	9.91 €	13.11 €	17.40 €	23.60 €	33.80 €
<b>(+1%)</b>	<b>4.52%</b>	7.26 €	9.89 €	13.39 €	18.42 €	26.80 €

With the data above described it is possible to see the effects of movements both in terms of Cost of Equity and Terminal Growth Rate. Different assumptions regarding terminal growth rate translate in substantial differences in terms of value as value creation on our base case greatly depends on Terminal Value.

<sup>23</sup> Please find the detailed data outputs from the model when applying each scenario – Appendix 12

## 7 Relative Valuation

To proceed with the relative valuation a group of similar companies must be selected – a Peer Group – so that Cellnex’s value can be estimated based on how the market values those similar companies. The challenge relies on finding companies that show a similar profile in terms of risk and growth.

Cellnex faces high capital investments and mainly operates in Europe so we focused on companies within the Telecommunication Services Industry that have operations in Europe. In terms of fundamentals, several factors were considered but especial attention was made to Revenue Growth, Return of Assets and Return on Invested Capital. Hence, the following Peer Group is presented, as well as the valuation resulting from the presented multiples<sup>24</sup>:

*Table 10 – Peer Group Multiples and Cellnex Valuation. Source: Thomson Reuters | Own Calculations*

	<b>P/E</b>	<b>EV/EBITDA</b>	<b>EV/SALES</b>
EI Towers SpA	30.13	12.31	5.84
Elisa Oyj	19.20	10.79	3.71
Crown Castle International Corp	91.30	20.33	10.94
American Tower Corp	53.42	19.00	11.09
Com Hem Holding AB	52.42	10.28	4.65
<b>Average</b>	<b>49.29</b>	<b>14.54</b>	<b>7.24</b>
EV (€Mn)		4,711 €	5,869 €
Equity Value (€Mn)		2,579 €	3,737 €
<b>Cellnex’s Price Per Share</b>	<b>7.89€</b>	<b>11.14€</b>	<b>16.14€</b>

This Peer Group is composed by two European Tower Companies (EI Towers SpA and Elisa Oyj), two American Tower Companies (Crown Castle International Corp and American Tower Corp) and a Swedish Telecommunication Services provider (Com Hem Holding AB).

Since Cellnex is relatively new as a publicly traded company, it is important to include different perspectives in our analysis and so, we decided to also include EV/Sales ratio. P/E is the multiple that presents lower values which might translate the fact that company’s capital structure is affecting Earnings per Share and that the stock is currently overpriced. In the other

<sup>24</sup> Calculations using Cellnex’s 2017E Data. Please additional information regarding the peer group in Appendix 13.

hand, EV/EBITDA and EV/Sales do not include capital structure effects but rather focus on operational income and revenue generation, respectively. In the latter perspective, valuations are higher but still far from Cellnex's current price.

In general, the results obtained here are very different from the ones obtained in the APV approach which highlights the fact that the market in valuing similar companies in a fairly different way. Additionally, from the Peer Group above it is also possible to see that European Companies present lower multiples than American Companies. This might happen for several reasons: the American Tower market is considered to be in a mature state while the European Market is still taking the first steps; American Tower Companies operate in more markets besides the markets within their continents of origin; and American Tower Companies already have a proven track record regarding growth and operational capabilities. Frequently, Cellnex is considered to be following the same growth path as American Companies did assuming that the transformational changes that took place in the U.S. market and the rise of the independent tower companies will soon reproduce in the European Market and that Cellnex is leading the way. Hence, we can see significant differences if we value Cellnex based only on its American Peers:

*Table 11 – American Peer Group Multiples and Cellnex Valuation. Source: Thomson Reuters | Own Calculations*

	P/E	EV/EBITDA	EV/SALES
Crown Castle International Corp	91.30	20.33	10.94
American Tower Corp	53.42	19.00	11.09
<b>Average</b>	<b>72.36</b>	<b>19.66</b>	<b>11.02</b>
EV (€Mn)		6,370 €	8,924 €
Equity Value (€Mn)		4,239 €	6,793 €
<b>Cellnex's Price Per Share</b>	<b>11.58€</b>	<b>18.31€</b>	<b>29.33€</b>

Overall, besides the fact that the relative valuation suggests lower values than the one presented by the APV approach, the purpose of the multiples valuation is only to get a sense of how the market is valuing these companies instead of using its results as a base for investment recommendation.

## 8 Investment Recommendation

Cellnex's shares are valued at €22.81 per share against the current market price of €21.32 (as of 31/11/2017). In the last 6 months the stock had an average price of €16.05 and has floated within the following range [€12.61 – €21.32]. Therefore, it is believed that Cellnex's shares are undervalued and our recommendation is to **Buy**.

## 9 Investment Bank Report Comparison

The valuation performed in this master dissertation will be compared with the one of Morgan Stanley on the 2<sup>nd</sup> of August of 2017.

Morgan Stanley believes that Cellnex is within an attractive industry and establishes a share price target of €25.00 based on an overweight recommendation. This report updates the price target reflecting a 2% increase (prior price target €24.50 per share) after the last official results presentation – half year 2017.

Even though Morgan Stanley valuation relies on a different model (DCF-based vs APV) this might not be the reason for the valuation differences as they are simply different tools with the same end. The differences most surely come from the assumptions made through the development of each model.

The most noticeable and important assumption that differs from this dissertation related to the explicit period. While the APV approach takes an explicit period of 10 years ranging from 2017 to 2027 the investment bank's explicit period goes from 2017 to 2021. This will mold the assumptions made throughout all the model development since opinions diverge on when the company will become stable. Additionally, Morgan Stanley assumes a long-term growth rate of 2.5% against the 1% long-term growth rate used in the APV model, and a WACC of 6.3% against a WACC of 4.1% suggested by the capital costs computed in the APV model.

In operational terms, and as a comparison to what was forecasted in this dissertation, Morgan Stanley forecasts slower Revenue growth and higher EBITDA growth translating the belief that Cellnex will be able to produce greater operational efficiencies within the forecasted period.

Table 12 – Revenue and EBITDA Comparison. Source: Own Calculations | Morgan Stanley

<b>REVENUE</b>					
	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
Own Forecasts	810 €	920 €	1,032 €	1,149 €	1,263 €
Growth	14.9%	13.6%	12.2%	11.3%	9.9%
Morgan Stanley	798 €	894 €	941 €	976 €	1,004 €
Growth	13.2%	12.0%	5.3%	3.7%	2.9%
<b>EBITDA</b>					
	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
Own Forecasts	324 €	387 €	453 €	524 €	597 €
Growth	22.7%	19.4%	17.1%	15.7%	13.9%
Morgan Stanley	359 €	418 €	455 €	482 €	503 €
Growth	36.0%	16.4%	8.9%	5.9%	4.4%

Furthermore, the investment bank does not consider investments related to portfolio acquisitions as Capital Expenditures which yields significantly different results. The reason behind this might be that Morgan Stanley do not account for growth generated by acquisitions and therefore, investments in acquisitions should not be considered when valuing the company.

Table 13 - CAPEX Comparison. Source: Own Calculations | Morgan Stanley

<b>CAPEX</b>					
	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
Own Forecasts	818 €	835 €	863 €	860 €	819 €
Morgan Stanley	91 €	104 €	108 €	110 €	113 €

Given the different assumptions and model dynamics, the APV approach results in a target price 9% lower than the Morgan Stanley target price of €25.0 per share.

## **Conclusion**

This Master Dissertation presents not only a deeper analysis on valuation techniques and its practical application on the Equity Valuation of Cellnex Telecom S.A but also provides some insights on the European Tower Infrastructure Market.

The European Tower Infrastructure Market is still in an early stage of development and Cellnex is believed to be one of the leading players. The outlook is positive, and market should evolve significantly due to the following factors: increasing number of MNOs going for the Sell-to-Lease Back strategy, the implementation and development of 5G technologies, the need to rethink and rebuild towards a more efficient network and the increasing demand on wireless technologies.

An Adjusted Present Value (APV) based model was developed to value Cellnex Telecom S.A. reaching to the final valuation of €22.81 per share. Nevertheless, it is important to acknowledge both the limitations of the model and the risks behind the assumptions made.





## **APPENDIXES**

# 1. Mobile Wireless Technologies

Mobile experience is expanding everywhere but the foundation of that expansion is connectivity. As we keep using more apps and sharing more content, connectivity technologies also need to guaranty that they can handle greater amounts of data:

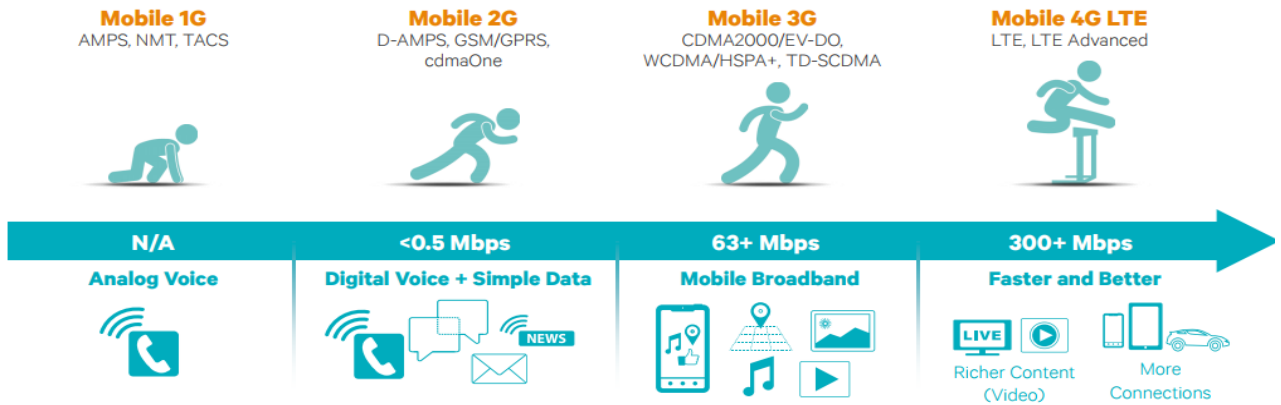


Figure 16 – Mobile Technologies explained. Source: Qualcomm

Table 14 – What’s new about 5G technology? | Source: European Commission

What 5G will bring to you?	What’s new?	Applications	Why not today
Amazing volume Amazingly fast	Spectrum extension; cell densification; increase spectrum efficiency; advanced antennas; moving networks, etc.	Hologram TV, augmented reality, ultra large volume transfers	Spectrum saturation; limited spectrum aggregation; current hardware not able to function at high frequencies; expensive deployment & maintenance of small cells
Always best connected	Combination of 4G, 3G, Wi-fi new radio access to create an integrated & dynamic radio access network	Staying connected everywhere including high-speed trains, planes, crowds	Seamless handover not supported
No perceived delay	Ultra-low latency; Software-defined networks; decoupling functional architecture from the underlying physical infrastructure	Tactile internet, reactive interfaces, electricity grid control, vehicle to vehicle, robot control, connected cars	4G latency > 10ms
Massive amount of connected things & people	New waveform, cell densification, etc.	IoT, Smart cities, connected health	Current OFDM waveform limitations; interference prevents scaling up
Energy efficiency	New operation mechanisms for dense networks; pooling of base station processing; on-demand consumption; massive machine communications, etc.	80% energy saving; deployment in developing countries	Base stations idle time not optimized; unused functions activated; air interface/hardware not energy optimized
Flexible programmable networks	Software-defined networks; network function virtualization; decoupling functional architecture from the underlying physical infrastructure; APIs	New business models for innovative SMEs providing network functions; emergence of super MVNOs; pan European Operators; faster innovation in network services	Many network management software; not interoperable, bundling of network functions in hardware boxes
Secure networks	Physical channel authentication; virtualized authentication	Networks for police & security professionals; privacy	Security as add-on not by design; fragmented approach

## 2. ‘Changing ecosystem dynamics – past, present and future’

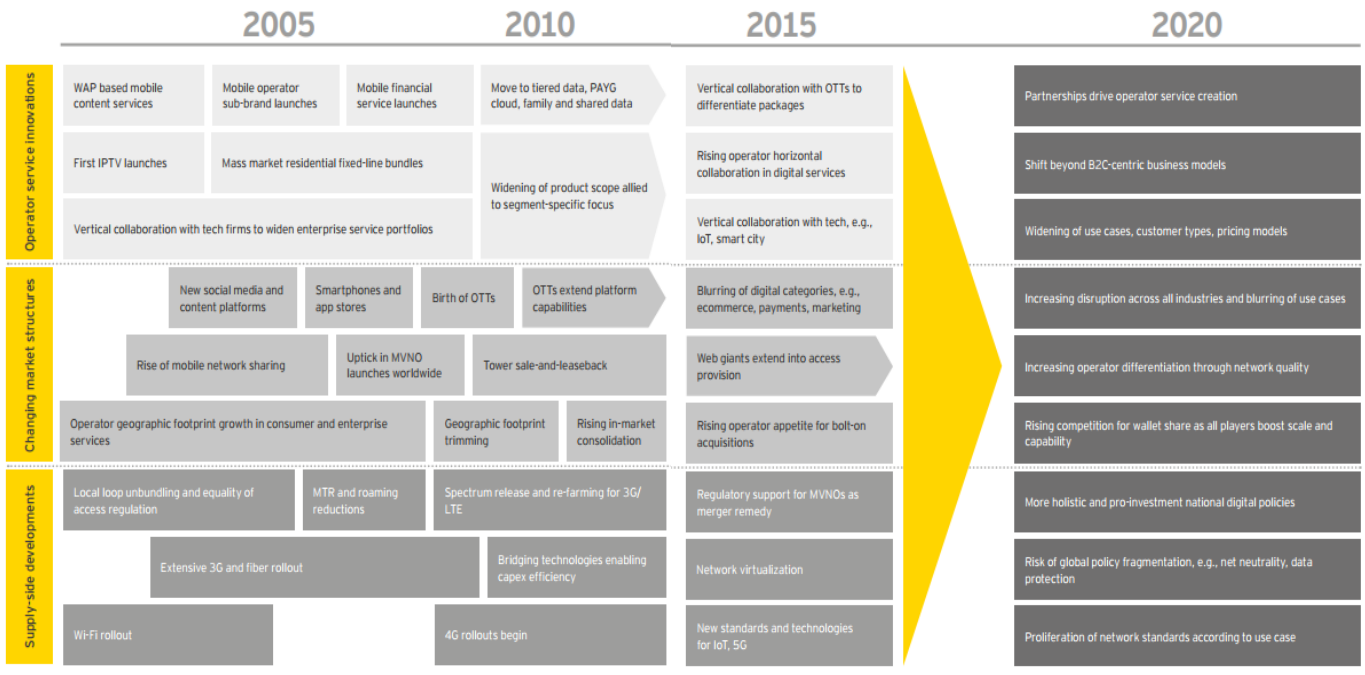


Figure 17 – Changing ecosystem Dynamics | Source: EY

## 3. Sell-to-Leaseback Strategy

### Pros

- Cash Conversion from non-liquid assets
- Cash replaces assets on the Balance Sheet
- Any debt associated with real estate is removed from the Balance Sheet
- Improvement of Debt to Equity Ratios
- Lease payments are deductible

### Cons

- Accounting principles require gains from a sale-leaseback transaction to be deferred from profit and amortized over the period of leaseback
- Losses from these transactions must be recognized immediately
- Proposed new accounting standards will require lessees to recognize future rent payments as liabilities. And there may be tax liabilities that reduce the sale's net proceeds
- Seller's loss of flexibility in the future use of the real estate sold and leased back

## 4. European Tower Market

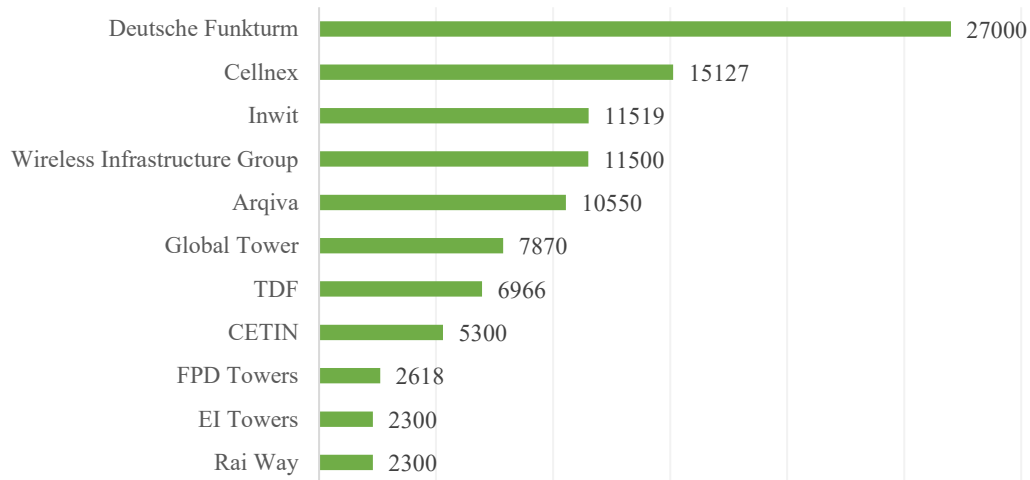


Figure 18 – Number of Tower Towers per Tower Company in Europe as of 2016. Source: Statista

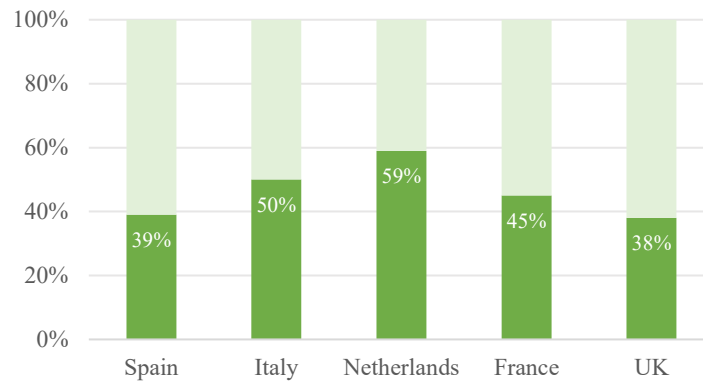


Figure 19 – Percentage of Total Towers owned by TowerCos in each market. Source: TowerXchange

### Spain

According to TowerXChange, 39% of the nearly 50K Spanish sites (broadcast and telecom towers and rooftops) were owned by TowerCos. The other 61% are owned by the local Telecommunication Services Companies being Orange the one with the biggest stake on the market followed by Vodafone. Telxius is a TowerCo from Telefónica's portfolio which also has a Mobile Operator: Movistar. 70% of Axion operations are in Andalucía. Telecom Operators in Spain: Movistar (Telefónica); Orange (Orange); Vodafone (Vodafone); Yoigo (Yoigo).

## **Italy**

The Italian TowerCo Market is led by INWIT, Cellnex and EI Towers' TowerTel which represent almost half the total sites. Cellnex stake on the Italian market came from the acquisition of Galata and their 7337 towers in 2015. Both INWIT and Cellnex continue to believe in the potential the Italian market has for small cells, highlighted by Cellnex's acquisition of CommsCon in 2016. The graph below refers mainly to Telecom sites since the Broadcast sites are evenly divided between EI Towers and Rai Way on a total of 5000 towers.

## **The Netherlands**

TowerCos own 59% of the total ground based towers in the Netherlands. Cellnex introduced itself on the market with the acquisition of Protelindo's 261 towers, which are now marketed under the brand 'Towerlink Netherlands', plus 460 towers from Shere Group. Focusing on the development of 5G Technologies in the Netherlands, Cellnex announced the acquisition of Alticom (+30 towers).

## **France**

From the total 25000 ground based towers, 55% are still owned by mobile operators. The remainder is owned by three TowerCos: Cellnex, TDF and FPS Towers which was recently bought by American Tower.

## **United Kingdom**

The UK market is slightly different from any other markets. 38% of the active towers in the UK are owned by independent TowerCos: Arqiva, Wireless Infrastructure Group and Cellnex (that recently acquired Shere Group). The remainder comprehends two joint ventures: CTIL (Vodafone and O2's Network) and MBNL (BT and Hutchison). In the CTIL's case tower assets are on their BS while MBNL works as a management company with the assets retained by the MNOs.

## **Switzerland**

The Swiss tower market is dominated by its local MNOs: Swisscom, Sunrise, Salt and SBB. Although Cellnex has entered the market through a consortium to acquire Swiss Towers AG from Sunrise, Swisscom is still the biggest market operator holding 55% of the Tower Infrastructures.

## 5. Mobile Data Traffic Growth

Table 15 – Global Mobile Data Traffic, 2016-2021. Source: CISCO

	2016	2017	2018	2019	2020	2021	CAGR 2016– 2021
<b>By Application Category (TB per Month)</b>							
<b>Web, data, and VoIP</b>	2,153,676	2,938,884	3,779,988	4,674,801	5,538,615	6,434,681	24%
<b>Video</b>	4,375,000	7,225,123	11,415,329	17,564,661	26,067,686	38,148,326	54%
<b>Audio streaming</b>	559,999	843,394	1,193,711	1,620,662	2,103,876	2,674,183	37%
<b>File sharing</b>	151,874	258,617	403,273	592,352	820,954	1,102,867	49%
<b>By Device Type (TB per Month)</b>							
<b>Non-smartphones</b>	109,505	137,852	169,955	199,173	236,257	269,189	20%
<b>Smartphones</b>	5,887,078	9,328,403	14,076,023	20,710,278	29,484,004	42,017,358	48%
<b>Tablets and PCs</b>	1,085,059	1,514,749	2,040,640	2,681,672	3,457,800	4,439,720	33%
<b>M2M</b>	157,998	284,415	505,292	861,025	1,409,949	2,224,543	70%
<b>Other portable devices</b>	910	599	391	328	432	659	-6%
<b>By Region (TB per Month)</b>							
<b>North America</b>	1,411,021	2,000,301	2,776,564	3,753,177	4,838,494	6,397,092	35%
<b>Western Europe</b>	736,377	1,084,396	1,534,120	2,167,831	3,019,843	4,189,615	42%
<b>Asia Pacific</b>	3,109,117	4,900,007	7,434,743	11,048,030	15,911,056	22,845,908	49%
<b>Latin America</b>	449,944	688,890	1,023,408	1,475,498	2,078,670	2,898,651	45%
<b>Central and Eastern Europe</b>	923,803	1,396,079	2,013,989	2,836,076	3,886,561	5,252,334	42%
<b>Middle East and Africa</b>	610,286	1,196,346	2,009,476	3,171,864	4,853,817	7,367,869	65%
<b>Total (TB per Month)</b>							
<b>Total Mobile Data Traffic</b>	7,240,550	11,266,018	16,792,300	24,452,476	34,588,442	48,951,469	47%

## 6. Spectrum

Spectrum, commonly known as radio frequency, is used to transmit signals. Wireless operators cannot transmit wireless signals over the same frequencies in the same markets at the same time. Therefore, to transmit a signal, one must have a reserved radio frequency. National agencies usually grant licenses to companies to use the spectrum, and decide which frequencies of spectrum can be used for which purposes. If, for example, a given agency establishes that

for mobiles the spectrum ranges from 700MHz to 2.6GHz and most of the spectrum in that range is already allocated for use, when the wireless company wants to add more spectrum to boost the capacity of its services they might not have spectrum available. The more data transacted, the more spectrum is needed.

## 7. Tower Business: Overview

### The wireless communication value chain

Cellnex provides infrastructure services which are a key element of the Wireless Telecommunication Value Chain since infrastructure represents the access network that allows telecommunication services to reach the end user:

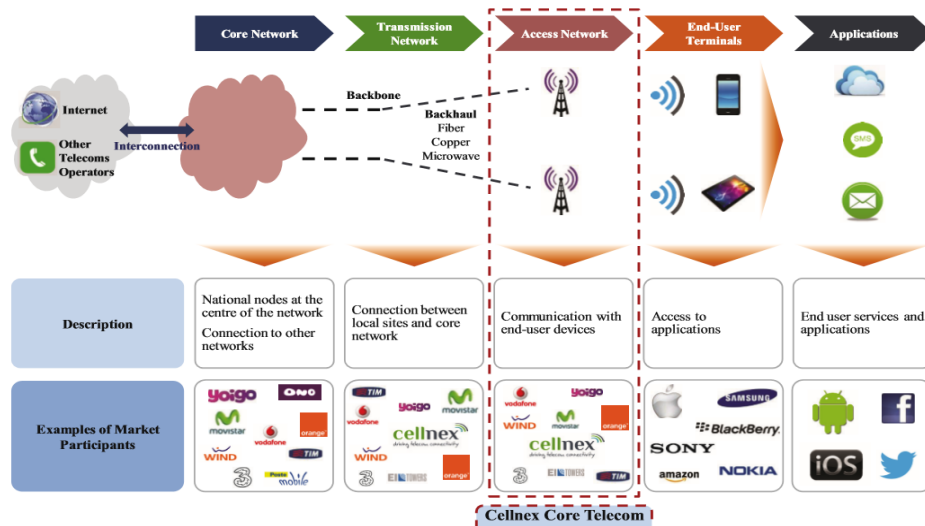


Figure 20 – Wireless Communication Value Chain. Source: Cellnex Telecom S.A.

### Tower Asset

1. Whip Antenna – Typical antenna for telephone signal
2. Antenna Array – Platform where tenants place their equipment to provide signal transmission and reception to a specific area. The number of Antennas depends on tenant’s needs
3. Port Holes – Tower holes that allow cables to pass through from the base to the top
4. Panel/Antenna – Tenant equipment the transmits a signal from the tower to a mobile device (or vice-versa)

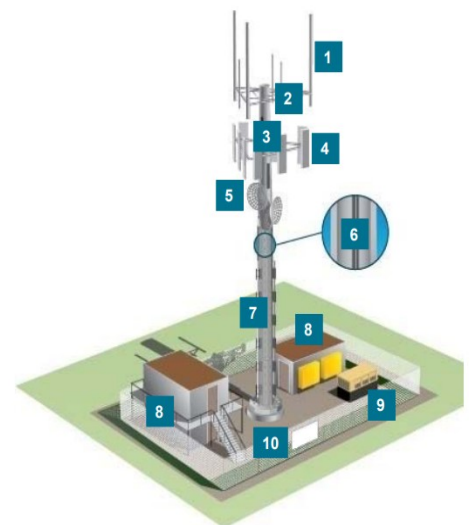


Figure 21 – Tower Site representation. Source: American Tower



5. Microwave Dish – A specific type of antenna used to radio, television and data communications also used by wireless carriers to connect to a core network.
6. Coaxial Cabling (Fiber) – responsible to carry the signal from the base to the antenna (vice-versa)
7. Reinforcement bars – used to reinforce the tower so that more tenants can be accommodated
8. Shelters – small compartments for tenants to house needed equipment
9. Generator – for emergency backup power
10. Ground Space – area within a site where tenants lease space from the tower company to place their shelters and generators.

### **Revenue Generation**

Tenants lease site space both in terms of vertical space to mount their antennas and ground space to store all needed equipment. Lease contracts of 10 years, usually, with possible extension up to plus 15 years and some of them linked to Consumer Price Index.

### **Operational Costs**

The most significant costs related to Tower Infrastructure are related to:

- Land acquisition for site installation (most common)
- Rental payments for land owners (least common)
- Site maintenance costs
- Site upgrading costs
- Others: Utilities; Insurance

### **Growth sources and efficiency in network management**

#### **1. Multi Tenancy**

Although a site can be used only by one tenant – which mostly happens when Telecom Companies own their sites for their exclusive use – efficiencies can be reached if the site is used by multiple tenants (Multi Tenancy).

Additional tenants can be added to the site with low incremental costs which allows infrastructure companies to leverage their site's operational use. This dynamic is the key element of Cellnex's strategy and translates itself in a significant source of growth both in terms of sites and revenues.

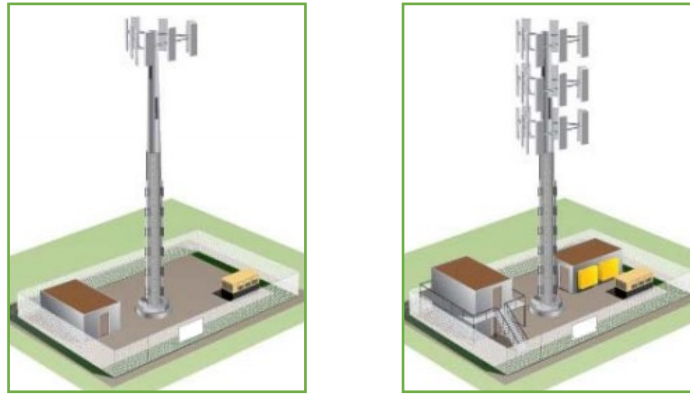


Figure 22 – Tower with one tenant (left) and Tower with Multiple tenants (right) representation. Source: American Tower

Each tenant on a given site is considered a Point of Presence (PoP). Consequently, Multi Tenancy will also result in higher tenancy ratio since:

$$\text{Tenancy Ratio} = \frac{\text{Total Points of Presence}}{\text{Total N}^{\circ} \text{ Sites}}$$

## 2. Rationalization

Cellnex acquires tower portfolios from several Mobile Network Operators (MNOs) and then consolidates them in a seamless network. However, imagine that Cellnex acquires two tower portfolios (from two different MNOs) and both cover area X. Before, each MNO had its own towers to cover area X but now, Cellnex will only need half the towers to cover the same area since both MNOs can operate in one same network. This is what defines Rationalization and where significant efficiencies take place.

Cellnex has the unique opportunity to consolidate, rethink and rebuild the tower network so that it can be more efficient both in terms of dispersion/coverage and costs. Additionally, Cellnex is also able to expand the network or build additional towers to cover some specific areas that MNOs demand (Built-to-Suit).

## 8. Implied Market Risk Premium - Spain

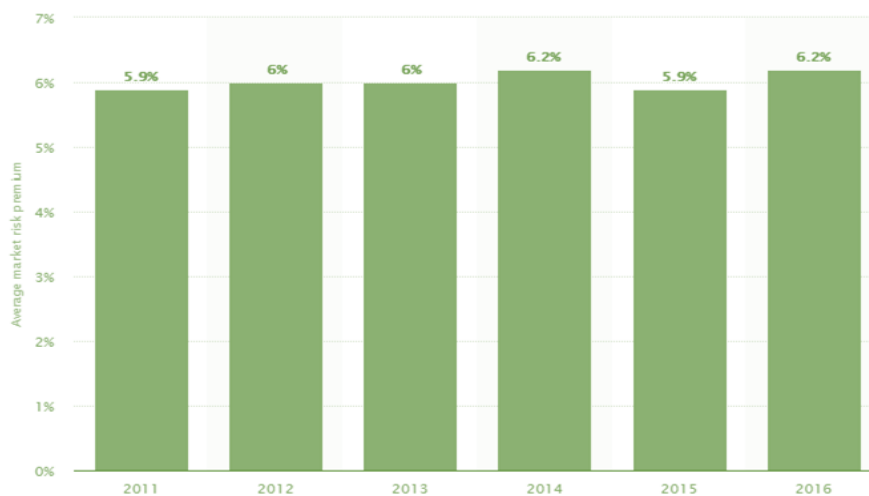


Figure 23 – Implied Market Risk Premium for Spanish market. Source: Statista

## 9. Country Risk Premium

Table 16 – Country Risk Premium Calculations. Source: Thomson Reuters | Own Calculations

Country	(1) Current % of Total Revenues (2016)	(2) Expected % of Total Revenues	(3) CDS	(4) Spread	(5) Country Risk Premium = (2) * (4)
Spain	64%	45%	5Y – Spain	61.00	0.61%
Italy	34%	20%	5Y – Italy	117.23	1.17%
Netherlands	1%	7.5%	5Y – Netherland	14.12	0.14%
UK	1%	7.5%	5Y – UK	22.88	0.23%
France	-	12%	5Y – France	18.29	0.18%
Switzerland	-	7.5%	5Y – Switzerland	20.67	0.21%
				<b>Total</b>	<b>0.57%</b>

## 10. Cost of Debt

Table 17 - Interest coverage ratio, Corporate Rating and Default spread for non-financial services companies with market capitalization > \$5Bn. Source: Damodaran

<i>If interest coverage ratio is</i>			
<i>&gt;</i>	<i>≤ to</i>	<i>Rating is</i>	<i>Spread is</i>
8.50	100000	Aaa/AAA	0.60%
6.5	8.499999	Aa2/AA	0.80%
5.5	6.499999	A1/A+	1.00%
4.25	5.499999	A2/A	1.10%
3	4.249999	A3/A-	1.25%
2.5	2.999999	Baa2/BBB	1.60%
2.25	2.499999	Ba1/BB+	2.50%
2	2.24999999	Ba2/BB	3.00%
1.75	1.999999	B1/B+	3.75%
1.5	1.749999	B2/B	4.50%
1.25	1.499999	B3/B-	5.50%
0.8	1.249999	Caa/CCC	6.50%
0.65	0.799999	Ca2/CC	8.00%
0.2	0.649999	C2/C	10.50%
-100000	0.199999	D2/D	14.00%

## 11. Market Value of Debt

Table 18 – Debt at Market Value Calculations in €Thousands. Source: Own Calculations

Cellnex Bonds	Issue Date	Maturity Date	Amt Outstanding (€Mn)	Last Price	MKT Value	Interest	Market of Issue	Currency	ISIN
1	27-Jul-2015	27-Jul-2022	600.00 €	109.047	654.28 €	3.125%	Eurobond	€	XS1265778933
2	10-Aug-2016	16-Jan-2024	750.00 €	103.201	774.01 €	2.375%	Eurobond	€	XS1468525057
3	16-Dec-2016	20-Dec-2032	65.00 €			3.875%	Eurobond	€	XS1538787497
4	18-Jan-2017	18-Apr-2025	335.00 €	104.272	349.31 €	2.875%	Eurobond	€	XS1551726810
5	07-Apr-2017	07-Apr-2026	80.00 €			6 month Euribor + 2.27%	Eurobond	€	XS1592492125
6	03-Aug-2017	03-Aug-2027	60.00 €			6 month Euribor + 2.20%	Eurobond	€	XS1657934714
<b>Total @ Book</b>			<b>1,890.00 €</b>	<b>Total @ Market</b>	<b>1,777.60 €</b>				

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
2032 Bond	2.52 €	2.52 €	2.52 €	2.52 €	2.52 €	2.52 €	2.52 €	2.52 €	2.52 €	2.52 €	2.52 €	2.52 €	2.52 €	2.52 €	2.52 €
2026 Bond	3.20 €	3.20 €	3.20 €	3.20 €	3.20 €	3.20 €	3.20 €	3.20 €	3.20 €						
2027 Bond	2.31 €	2.31 €	2.31 €	2.31 €	2.31 €	2.31 €	2.31 €	2.31 €	2.31 €	2.31 €					
Bond Interest Payments	8.03 €	8.03 €	8.03 €	8.03 €	8.03 €	8.03 €	8.03 €	8.03 €	8.03 €	4.83 €	2.52 €	2.52 €	2.52 €	2.52 €	
Bond Repayment									80.00 €	60.00 €					65.00 €
	8.03 €	8.03 €	8.03 €	8.03 €	8.03 €	8.03 €	8.03 €	8.03 €	88.03 €	64.83 €	2.52 €	2.52 €	2.52 €	2.52 €	65.00 €
<b>Bonds 26 27 32 @ Mkt Value (Kd = 2.87%)</b>	<b>223.34 €</b>														

30 June 2017	Limit	Less than 1 Year	1-2Y	2-3Y	3-4Y	4-5Y	+5Y	Total
Syndicated Financing	500.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
Loans and credit facilities	1,127.56 €	1.81 €	70.79 €	104.14 €	0.00 €	80.00 €	56.50 €	313.24 €
Arrangement expenses		-0.39 €	-0.35 €	-0.30 €	-0.15 €	-0.54 €		-1.72 €
<b>Total</b>	<b>1,627.56 €</b>	<b>1.42 €</b>	<b>70.45 €</b>	<b>103.84 €</b>	<b>-0.15 €</b>	<b>79.46 €</b>	<b>56.50 €</b>	<b>311.52 €</b>

Bonds 26 27 32 @ Mkt Value	223.34 €
Bonds 22 24 25 @ Mkt Value	1,777.60 €
<b>Bonds @ Mkt Value</b>	<b>2,000.94 €</b>
Loans @ Mkt Value	311.52 €
<b>Mkt Value of Debt</b>	<b>2,312.46 €</b>

## 12. Sensitivity Analysis

Table 19 – PoP Forecast at 12.4% CAGR 2017-27 (Higher Growth Scenario). Source: Own calculations

<b>CAGR 12.4% (+2%)</b>	2017E	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F
<b>Total PoPs (1 Jan)</b>	<b>24,698</b>	<b>29,267</b>	<b>35,267</b>	<b>41,791</b>	<b>48,687</b>	<b>55,746</b>	<b>62,715</b>	<b>69,300</b>	<b>75,883</b>	<b>82,713</b>	<b>88,916</b>
<b>Organic Growth</b>	<b>988</b>	<b>1,463</b>	<b>1,763</b>	<b>2,090</b>	<b>2,434</b>	<b>2,787</b>	<b>3,136</b>	<b>3,465</b>	<b>3,794</b>	<b>3,309</b>	<b>2,667</b>
<i>% growth</i>	4.0%	5.00%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	4.0%	3.0%
<b>M&amp;A</b>	<b>3,581</b>	<b>4,536</b>	<b>4,761</b>	<b>4,806</b>	<b>4,625</b>	<b>4,181</b>	<b>3,449</b>	<b>3,118</b>	<b>3,035</b>	<b>2,895</b>	<b>2,667</b>
<i>% growth</i>	14.5%	15.5%	13.5%	11.5%	9.5%	7.5%	5.5%	4.5%	4.0%	3.5%	3.0%
<b>Total PoPs (31 Dec)</b>	<b>29,267</b>	<b>35,267</b>	<b>41,791</b>	<b>48,687</b>	<b>55,746</b>	<b>62,715</b>	<b>69,300</b>	<b>75,883</b>	<b>82,713</b>	<b>88,916</b>	<b>94,251</b>
<b>REVENUES</b>	810.19 €	931.77 €	1,059.79 €	1,197.16 €	1,336.78 €	1,479.92 €	1,610.90 €	1,741.96 €	1,877.86 €	2,001.33 €	2,107.51 €
<b>EBITDA</b>	323.99 €	393.14 €	468.21 €	551.00 €	637.82 €	729.43 €	816.82 €	906.89 €	1,002.49 €	1,093.20 €	1,175.61 €
<b>CONSOLIDATED NET PROFIT</b>	29.62 €	28.47 €	42.49 €	44.50 €	78.57 €	121.07 €	166.09 €	218.34 €	278.17 €	336.96 €	392.21 €
<b>CAPEX</b>	817.89 €	886.73 €	939.64 €	962.53 €	946.64 €	915.18 €	837.94 €	800.40 €	806.41 €	800.66 €	777.27 €
<b>TOTAL DEBT</b>	2,230.63 €	2,722.11 €	3,199.73 €	3,663.87 €	4,065.24 €	4,414.53 €	4,681.10 €	4,871.77 €	5,032.14 €	5,173.13 €	5,286.53 €
<b>NetDebt / Adjusted EBITDA</b>	5.74	5.88	5.92	5.87	5.72	5.51	5.29	5.01	4.72	4.48	4.29
<b>NetDebt / EBITDA</b>	6.07	6.23	6.24	6.14	5.94	6.50	5.41	5.10	4.79	4.55	4.35
<b>D/E</b>	4.08	4.96	5.66	6.41	6.67	6.69	6.54	6.22	5.82	5.45	5.10
<b>Price Per Share</b>	<b>12.71 €</b>										
<b>% change to Base Case</b>	<b>-44%</b>										

Table 20 - PoP Forecast at 10.4% CAGR 2017-27 (Base Case Scenario). Source: Own calculations

<b>CAGR 10.4% (Base Case)</b>	2017E	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F
<b>Total PoPs (1 Jan)</b>	<b>24,698</b>	<b>29,267</b>	<b>34,682</b>	<b>40,404</b>	<b>46,263</b>	<b>52,045</b>	<b>57,510</b>	<b>62,399</b>	<b>67,078</b>	<b>71,774</b>	<b>75,721</b>
<b>Organic Growth</b>	<b>988</b>	<b>1,171</b>	<b>1,387</b>	<b>1,616</b>	<b>1,851</b>	<b>2,082</b>	<b>2,300</b>	<b>2,496</b>	<b>2,683</b>	<b>2,153</b>	<b>1,514</b>
<i>% growth</i>	4.0%	4.00%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	3.0%	2.0%
<b>M&amp;A</b>	<b>3,581</b>	<b>4,244</b>	<b>4,335</b>	<b>4,242</b>	<b>3,932</b>	<b>3,383</b>	<b>2,588</b>	<b>2,184</b>	<b>2,012</b>	<b>1,794</b>	<b>1,514</b>
<i>% growth</i>	14.5%	14.5%	12.5%	10.5%	8.5%	6.5%	4.5%	3.5%	3.0%	2.5%	2.0%
<b>Total PoPs (31 Dec)</b>	<b>29,267</b>	<b>34,682</b>	<b>40,404</b>	<b>46,263</b>	<b>52,045</b>	<b>57,510</b>	<b>62,399</b>	<b>67,078</b>	<b>71,774</b>	<b>75,721</b>	<b>78,750</b>
<b>REVENUES</b>	810.19 €	920.16 €	1,032.29 €	1,149.10 €	1,263.41 €	1,376.34 €	1,473.55 €	1,566.73 €	1,660.16 €	1,738.73 €	1,799.01 €
<b>EBITDA</b>	323.99 €	386.96 €	453.30 €	524.46 €	596.56 €	670.16 €	736.85 €	803.11 €	871.38 €	932.43 €	983.66 €
<b>CONSOLIDATED NET PROFIT</b>	29.62 €	25.15 €	35.36 €	35.51 €	64.36 €	99.84 €	136.24 €	177.75 €	224.40 €	268.41 €	307.72 €
<b>CAPEX</b>	817.89 €	834.85 €	863.00 €	859.81 €	818.78 €	763.75 €	668.43 €	612.56 €	596.91 €	571.01 €	531.66 €
<b>TOTAL DEBT</b>	2,230.63 €	2,693.80 €	3,119.00 €	3,512.01 €	3,828.85 €	4,080.52 €	4,240.86 €	4,319.38 €	4,359.79 €	4,372.97 €	4,353.36 €
<b>NetDebt / Adjusted EBITDA</b>	5.74	5.92	5.98	5.93	5.77	5.56	5.33	5.03	4.71	4.45	4.23
<b>NetDebt / EBITDA</b>	6.07	6.27	6.28	6.18	5.97	6.50	5.43	5.10	4.77	4.50	4.27
<b>D/E</b>	4.08	4.94	5.59	6.25	6.45	6.42	6.23	5.87	5.46	5.06	4.68
<b>Price Per Share</b>	<b>22.81 €</b>										

Table 21 - PoP Forecast at 8.4% CAGR 2017-27 (Slower Growth Scenario). Source: Own calculations

<b>CAGR 8.4% (-2%)</b>	2017E	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F
<b>Total PoPs (1 Jan)</b>	<b>24,698</b>	<b>29,267</b>	<b>34,096</b>	<b>39,040</b>	<b>43,920</b>	<b>48,532</b>	<b>52,657</b>	<b>56,080</b>	<b>59,164</b>	<b>62,122</b>	<b>64,297</b>
<b>Organic Growth</b>	<b>988</b>	<b>878</b>	<b>1,023</b>	<b>1,171</b>	<b>1,318</b>	<b>1,456</b>	<b>1,580</b>	<b>1,682</b>	<b>1,775</b>	<b>1,242</b>	<b>643</b>
<i>% growth</i>	4.0%	3.00%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	2.0%	1.0%
<b>M&amp;A</b>	<b>3,581</b>	<b>3,951</b>	<b>3,921</b>	<b>3,709</b>	<b>3,294</b>	<b>2,669</b>	<b>1,843</b>	<b>1,402</b>	<b>1,183</b>	<b>932</b>	<b>643</b>
<i>% growth</i>	14.5%	13.5%	11.5%	9.5%	7.5%	5.5%	3.5%	2.5%	2.0%	1.5%	1.0%
<b>Total PoPs (31 Dec)</b>	<b>29,267</b>	<b>34,096</b>	<b>39,040</b>	<b>43,920</b>	<b>48,532</b>	<b>52,657</b>	<b>56,080</b>	<b>59,164</b>	<b>62,122</b>	<b>64,297</b>	<b>65,583</b>
<b>REVENUES</b>	810.19 €	908.56 €	1,005.25 €	1,102.66 €	1,193.75 €	1,279.76 €	1,347.79 €	1,409.22 €	1,468.07 €	1,511.36 €	1,536.94 €
<b>EBITDA</b>	323.99 €	380.79 €	438.64 €	498.82 €	557.40 €	614.89 €	663.64 €	709.83 €	755.70 €	793.22 €	820.59 €
<b>CONSOLIDATED NET PROFIT</b>	29.62 €	21.82 €	28.37 €	26.87 €	50.98 €	80.22 €	109.18 €	141.63 €	177.43 €	209.63 €	236.65 €
<b>CAPEX</b>	817.89 €	782.98 €	788.43 €	762.45 €	700.77 €	627.82 €	520.78 €	453.75 €	424.77 €	387.79 €	341.69 €
<b>TOTAL DEBT</b>	2,230.63 €	2,665.49 €	3,039.38 €	3,364.68 €	3,603.37 €	3,767.53 €	3,835.88 €	3,820.90 €	3,764.89 €	3,679.16 €	3,560.73 €
<b>NetDebt / Adjusted EBITDA</b>	5.74	5.97	6.04	5.98	5.83	5.60	5.36	5.04	4.70	4.41	4.16
<b>NetDebt / EBITDA</b>	6.07	6.30	6.32	6.22	6.01	6.50	5.44	5.09	4.74	4.43	4.17
<b>D/E</b>	4.08	4.91	5.52	6.09	6.23	6.15	5.91	5.52	5.08	4.65	4.25
<b>Price Per Share</b>	<b>29.55 €</b>										
<b>% change to Base Case</b>	<b>30%</b>										



## 13. Company Peers

Table 22 – Company Peers, European Tower companies. Source: Thomson Reuters

	Company	MKT Cap (€)	P/E	EV/EBITDA	EV/SALES	Revenue Growth	Net Debt EBITDA	EBIDTA Margin	EBIT Margin	Net Profit Margin	D/E	ROA	ROE	Cash Holdings (% of Total Op. Costs)
CLNX.MC	Cellnex Telecom SA	4,886.76	79.48	17.89	17.89	18.2%	6.49	39.3%	13.0%	5.9%	362.2%	1.6%	8.6%	-
SCMN.S	Swisscom AG	23,208.55	14.73	7.35	2.70	-9.4%	1.85	36.8%	18.4%	13.8%	125.5%	7.5%	27.3%	-
ISA.L	Inmarsat PLC	2,530.42	17.36	7.66	4.58	-6.9%	2.47	59.8%	33.5%	18.3%	205.8%	6.0%	21.8%	24%
TDC.CO	Tdc A/S	4,182.09	16.27	6.86	2.45	-3.0%	2.47	35.7%	17.1%	8.5%	99.9%	3.5%	13.7%	9%
RWAY.MI	Rai Way SpA	1,477.83	23.29	9.41	4.57	0.6%	0.15	48.5%	30.5%	19.4%	56.3%	11.1%	26.1%	54%
EIT.MI	EI Towers SpA	1,548.28	30.13	12.31	5.84	4.5%	2.27	47.4%	31.2%	17.7%	37.1%	4.5%	7.1%	-
INWT.MI	Infrastrutture Wireless Italiane SpA	3,770.22	26.97	16.23	7.96	5.2%	0.13	49.1%	45.0%	29.4%	6.7%	5.6%	6.7%	46%
ELISA.HE	Elisa Oyj	5,791.53	19.20	10.79	3.71	8.7%	1.92	34.3%	21.3%	15.7%	120.4%	10.8%	27.1%	-
CCI	Crown Castle International Corp	37,816.25	91.30	20.33	10.94	-1.5%	3.79	53.8%	25.5%	8.3%	161.1%	1.5%	4.4%	19%
AMT	American Tower Corp	51,937.35	53.42	19.00	11.09	2.9%	4.86	58.4%	32.0%	14.7%	274.0%	2.9%	12.7%	20%

Table 23 – Cellnex Selected Peer Group. Source: Thomson Reuters

		MKT Cap (€)	P/E	EV/EBITDA	EV/SALES	Revenue Growth	Net Debt EBITDA	EBIDTA Margin	EBIT Margin	Net Profit Margin	D/E	ROA	ROE	ROIC
EIT.MI	EI Towers SpA	1,548.28	30.13	12.31	5.884	4.5%	2.27	47.4%	31.2%	17.7%	37.1%	4.5%	7.1%	9.3%
ELISA.HE	Elisa Oyj	5,791.53	19.20	10.79	3.71	8.7%	1.92	34.3%	21.3%	15.7%	120.4%	10.8%	27.1%	14.7%
CCI	Crown Castle International Corp	37,816.25	91.30	20.33	10.94	-1.5%	3.79	53.8%	25.5%	8.3%	161.1%	1.5%	4.4%	4.9%
AMT	American Tower Corp	51,937.35	53.42	19.00	11.09	2.9%	4.86	58.4%	32.0%	14.7%	274.0%	2.9%	12.7%	8.7%
COMH.ST	Com Hem Holding AB	2,267.85	52.42	10.28	4.65	21.8%	3.68	45.2%	15.8%	5.6%	194.5%	1.9%	5.8%	7.6%
			<b>49.29x</b>	<b>14.54x</b>	<b>7.24x</b>									

## 14. Income Statement

Table 24 – Income Statement in €Millions. Source: Own Calculations

	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F
Revenues [N° PoPs x (.Rev/PoP_2016 = 14.2€)]	266.5 €	351.4 €	416.5 €	493.5 €	574.9 €	658.3 €	740.6 €	818.3 €	887.9 €	954.5 €	1,021.3 €	1,077.5 €	1,120.6 €
Number of PoPs	20,740	24,698	29,267	34,682	40,404	46,263	52,045	57,510	62,399	67,078	71,774	75,721	78,750
Other Operating Income (11.6% Revenues = Avg.2015 2016)	36.4 €	33.7 €	48.4 €	57.4 €	66.8 €	76.5 €	86.1 €	95.1 €	103.2 €	111.0 €	118.7 €	125.3 €	130.3 €
Customer Advances (0.5% Revenues = Avg.2015 2016)	- 0.9 €	- 2.6 €	- 2.3 €	- 2.7 €	- 3.1 €	- 3.6 €	- 4.0 €	- €	- €	- €	- €	- €	- €
<b>Total Telecom Services</b>	<b>302.0 €</b>	<b>382.5 €</b>	<b>462.6 €</b>	<b>548.2 €</b>	<b>638.7 €</b>	<b>731.3 €</b>	<b>822.7 €</b>	<b>913.5 €</b>	<b>991.1 €</b>	<b>1,065.5 €</b>	<b>1,140.0 €</b>	<b>1,202.7 €</b>	<b>1,250.9 €</b>
<b>Total BroadCasting Services</b>	<b>224.7 €</b>	<b>235.2 €</b>	<b>230.0 €</b>	<b>232.6 €</b>	<b>231.3 €</b>	<b>231.9 €</b>	<b>231.6 €</b>	<b>231.8 €</b>	<b>231.7 €</b>	<b>231.7 €</b>	<b>231.7 €</b>	<b>231.7 €</b>	<b>231.7 €</b>
<b>Total Network Services &amp; Others</b>	<b>85.1 €</b>	<b>86.8 €</b>	<b>117.6 €</b>	<b>139.4 €</b>	<b>162.4 €</b>	<b>185.9 €</b>	<b>209.1 €</b>	<b>231.1 €</b>	<b>250.7 €</b>	<b>269.5 €</b>	<b>288.4 €</b>	<b>304.3 €</b>	<b>316.4 €</b>
<b>Total Revenues</b>	<b>611.8 €</b>	<b>704.6 €</b>	<b>810.2 €</b>	<b>920.2 €</b>	<b>1,032.3 €</b>	<b>1,149.1 €</b>	<b>1,263.4 €</b>	<b>1,376.3 €</b>	<b>1,473.5 €</b>	<b>1,566.7 €</b>	<b>1,660.2 €</b>	<b>1,738.7 €</b>	<b>1,799.0 €</b>
<b>Total Operating Costs</b>	<b>- 395.0 €</b>	<b>- 441.1 €</b>	<b>- 486.2 €</b>	<b>- 533.2 €</b>	<b>- 579.0 €</b>	<b>- 624.6 €</b>	<b>- 666.8 €</b>	<b>- 706.2 €</b>	<b>- 736.7 €</b>	<b>- 763.6 €</b>	<b>- 788.8 €</b>	<b>- 806.3 €</b>	<b>- 815.4 €</b>
Staff Costs [Staff Count x 74.4€]	- 89.3 €	- 97.5 €	- 99.1 €	- 102.8 €	- 106.4 €	- 110.1 €	- 113.8 €	- 117.4 €	- 121.1 €	- 124.7 €	- 128.4 €	- 132.1 €	- 135.7 €
Staff Count	1,245	1,303	1,353	1,403	1,453	1,503	1,553	1,603	1,653	1,703	1,753	1,803	1,853
Other Operating Expenses	- 306.8 €	- 343.7 €	- 387.1 €	- 430.4 €	- 472.6 €	- 514.5 €	- 553.1 €	- 588.8 €	- 615.6 €	- 638.9 €	- 660.4 €	- 674.2 €	- 679.6 €
% of Total Revenues	50.1%	48.8%	47.78%	46.78%	45.78%	44.78%	43.78%	42.78%	41.8%	40.8%	39.8%	38.8%	37.8%
Change in provisions (-)	1.14 €	0.25 €	0.25 €	0.25 €	0.25 €	0.25 €	0.25 €	0.25 €	0.25 €	0.25 €	0.25 €	0.25 €	0.25 €
Losses on fixed assets	- 0.12 €	- 0.18 €	- 0.18 €	- 0.18 €	- 0.18 €	- 0.18 €	- 0.18 €	- 0.18 €	- 0.18 €	- 0.18 €	- 0.18 €	- 0.18 €	- 0.18 €
<b>EBITDA</b>	<b>216.8 €</b>	<b>263.5 €</b>	<b>324.0 €</b>	<b>387.0 €</b>	<b>453.3 €</b>	<b>524.5 €</b>	<b>596.6 €</b>	<b>670.2 €</b>	<b>736.9 €</b>	<b>803.1 €</b>	<b>871.4 €</b>	<b>932.4 €</b>	<b>983.7 €</b>
EBITDA Margin	35.4%	37.4%	40.0%	42.1%	43.9%	45.6%	47.2%	48.7%	50.0%	51.3%	52.5%	53.6%	54.7%
<b>D&amp;A</b>	<b>- 153.5 €</b>	<b>- 176.8 €</b>	<b>- 230.5 €</b>	<b>- 278.3 €</b>	<b>- 321.3 €</b>	<b>- 368.9 €</b>	<b>- 391.5 €</b>	<b>- 408.9 €</b>	<b>- 420.0 €</b>	<b>- 426.4 €</b>	<b>- 430.4 €</b>	<b>- 431.8 €</b>	<b>- 430.3 €</b>
<b>EBIT</b>	<b>63.3 €</b>	<b>86.7 €</b>	<b>93.5 €</b>	<b>108.7 €</b>	<b>132.0 €</b>	<b>155.5 €</b>	<b>205.1 €</b>	<b>261.3 €</b>	<b>316.9 €</b>	<b>376.7 €</b>	<b>441.0 €</b>	<b>500.7 €</b>	<b>553.4 €</b>
EBIT Margin	10.3%	12.3%	11.5%	11.8%	12.8%	13.5%	16.2%	19.0%	21.5%	24.0%	26.6%	28.8%	30.8%
<b>Net Financial Costs   Int.Expense</b>	<b>- 27.5 €</b>	<b>- 45.8 €</b>	<b>- 63.5 €</b>	<b>- 83.2 €</b>	<b>- 96.1 €</b>	<b>- 108.2 €</b>	<b>- 119.3 €</b>	<b>- 128.2 €</b>	<b>- 135.3 €</b>	<b>- 139.7 €</b>	<b>- 141.8 €</b>	<b>- 142.8 €</b>	<b>- 143.1 €</b>
Profit (loss) of companies accounted for using the equity method	0.03 €	0.07 €	0.05 €	0.05 €	0.05 €	0.05 €	0.05 €	0.05 €	0.05 €	0.05 €	0.05 €	0.05 €	0.05 €
<b>EBT</b>	<b>35.9 €</b>	<b>41.0 €</b>	<b>30.1 €</b>	<b>25.5 €</b>	<b>35.9 €</b>	<b>47.3 €</b>	<b>85.8 €</b>	<b>133.1 €</b>	<b>181.7 €</b>	<b>237.0 €</b>	<b>299.2 €</b>	<b>357.9 €</b>	<b>410.3 €</b>
Effective Tax Rate	-35.1%	1.5%	1.5%	1.5%	1.5%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
<b>Income Tax Expense</b>	<b>12.6 €</b>	<b>- 0.6 €</b>	<b>- 0.5 €</b>	<b>- 0.4 €</b>	<b>- 0.6 €</b>	<b>- 11.8 €</b>	<b>- 21.5 €</b>	<b>- 33.3 €</b>	<b>- 45.4 €</b>	<b>- 59.3 €</b>	<b>- 74.8 €</b>	<b>- 89.5 €</b>	<b>- 102.6 €</b>
<b>Consolidated Net Profit</b>	<b>48.5 €</b>	<b>40.4 €</b>	<b>29.6 €</b>	<b>25.1 €</b>	<b>35.4 €</b>	<b>35.5 €</b>	<b>64.4 €</b>	<b>99.8 €</b>	<b>136.2 €</b>	<b>177.8 €</b>	<b>224.4 €</b>	<b>268.4 €</b>	<b>307.7 €</b>
Attributable to non-controlling interests [1.4% of Consolidated Net Profit as off 2016]	1.2 €	0.6 €	0.4 €	0.4 €	0.5 €	0.5 €	0.9 €	1.4 €	1.9 €	2.5 €	3.2 €	3.8 €	4.3 €
<b>Net profit attributable to the Parent Company</b>	<b>47.3 €</b>	<b>39.8 €</b>	<b>29.2 €</b>	<b>24.8 €</b>	<b>34.9 €</b>	<b>35.0 €</b>	<b>63.5 €</b>	<b>98.4 €</b>	<b>134.3 €</b>	<b>175.2 €</b>	<b>221.2 €</b>	<b>264.6 €</b>	<b>303.4 €</b>
<b>Earnings per share (in € per share)</b>													
Basic	0.20 €	0.17 €	0.13 €	0.11 €	0.15 €	0.15 €	0.27 €	0.43 €	0.58 €	0.76 €	0.96 €	1.14 €	1.31 €
Diluted	0.20 €	0.17 €	0.13 €	0.11 €	0.15 €	0.15 €	0.27 €	0.43 €	0.58 €	0.76 €	0.96 €	1.14 €	1.31 €

## 15. Balance Sheet

Table 25 – Balance Sheet in €Millions. Source: Own Calculations

	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F
<b>ASSETS</b>													
<b>NON-CURRENT ASSETS</b>													
Goodwill	216.00 €	380.22 €	380.22 €	380.22 €	380.22 €	380.22 €	380.22 €	380.22 €	380.22 €	380.22 €	380.22 €	380.22 €	380.22 €
Other intangible assets	582.65 €	1,035.17 €	1,369.34 €	1,758.42 €	2,139.68 €	2,500.47 €	2,819.94 €	3,076.15 €	3,245.90 €	3,372.23 €	3,481.17 €	3,568.46 €	3,628.20 €
Property, plant and equipment	935.81 €	1,048.45 €	1,155.84 €	1,261.78 €	1,358.20 €	1,423.89 €	1,469.56 €	1,508.11 €	1,531.35 €	1,538.89 €	1,544.67 €	1,546.09 €	1,539.49 €
Investments in associates	3.51 €	3.55 €	4.08 €	4.64 €	5.20 €	5.79 €	6.37 €	6.94 €	7.43 €	7.90 €	8.37 €	8.76 €	9.07 €
Financial Investments	12.53 €	11.64 €	13.38 €	15.20 €	17.05 €	18.98 €	20.87 €	22.74 €	24.34 €	25.88 €	27.43 €	28.72 €	29.72 €
Trade and other receivables	27.71 €	36.33 €	41.78 €	47.45 €	53.23 €	59.25 €	65.15 €	70.97 €	75.98 €	80.79 €	85.61 €	89.66 €	92.77 €
Deferred tax assets	28.90 €	29.18 €	28.67 €	28.56 €	28.61 €	28.59 €	28.60 €	28.59 €	28.60 €	28.60 €	28.60 €	28.60 €	28.60 €
<b>Total non-current assets</b>	<b>1,807.11 €</b>	<b>2,544.53 €</b>	<b>2,993.32 €</b>	<b>3,496.26 €</b>	<b>3,982.19 €</b>	<b>4,417.20 €</b>	<b>4,790.70 €</b>	<b>5,093.71 €</b>	<b>5,293.82 €</b>	<b>5,434.51 €</b>	<b>5,556.05 €</b>	<b>5,650.51 €</b>	<b>5,708.05 €</b>
<b>CURRENT ASSETS</b>													
Inventories	3.38 €	2.02 €	2.33 €	2.64 €	2.96 €	3.30 €	3.63 €	3.95 €	4.23 €	4.50 €	4.77 €	4.99 €	5.17 €
Trade and other receivables	164.05 €	155.04 €	178.28 €	202.47 €	227.15 €	252.85 €	278.00 €	302.85 €	324.24 €	344.75 €	365.31 €	382.60 €	395.86 €
Receivables from Group Undertakings and associates	0.12 €	0.11 €	0.12 €	0.12 €	0.12 €	0.12 €	0.12 €	0.12 €	0.12 €	0.12 €	0.12 €	0.12 €	0.12 €
Financial Investments	0.92 €	0.92 €	0.92 €	0.92 €	0.92 €	0.92 €	0.92 €	0.92 €	0.92 €	0.92 €	0.92 €	0.92 €	0.92 €
Cash and cash equivalents	51.00 €	192.85 €	262.54 €	269.27 €	272.13 €	271.71 €	266.74 €	257.76 €	243.11 €	225.27 €	205.08 €	181.42 €	154.92 €
<b>Total current assets</b>	<b>219.48 €</b>	<b>350.95 €</b>	<b>444.18 €</b>	<b>475.42 €</b>	<b>503.27 €</b>	<b>528.90 €</b>	<b>549.41 €</b>	<b>572.62 €</b>	<b>572.62 €</b>	<b>575.55 €</b>	<b>576.19 €</b>	<b>570.04 €</b>	<b>556.98 €</b>
<b>TOTAL ASSETS</b>	<b>2,026.59 €</b>	<b>2,895.48 €</b>	<b>3,437.51 €</b>	<b>3,971.68 €</b>	<b>4,485.47 €</b>	<b>4,946.10 €</b>	<b>5,340.11 €</b>	<b>5,659.31 €</b>	<b>5,866.44 €</b>	<b>6,010.06 €</b>	<b>6,132.24 €</b>	<b>6,220.56 €</b>	<b>6,265.03 €</b>
<b>NET EQUITY</b>													
<b>Share capital and attributable reserves</b>													
Share capital	57.92 €	57.92 €	57.92 €	57.92 €	57.92 €	57.92 €	57.92 €	57.92 €	57.92 €	57.92 €	57.92 €	57.92 €	57.92 €
Share premium	338.73 €	338.73 €	338.73 €	338.73 €	338.73 €	338.73 €	338.73 €	338.73 €	338.73 €	338.73 €	338.73 €	338.73 €	338.73 €
Treasury shares	- €	2.69 €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Reserves of the Parent	10.42 €	36.00 €	39.98 €	42.90 €	45.38 €	48.87 €	52.37 €	58.71 €	68.56 €	81.99 €	99.51 €	121.64 €	148.10 €
Profit for the year	47.29 €	39.82 €	29.20 €	24.79 €	34.87 €	35.01 €	63.46 €	98.43 €	134.32 €	175.25 €	221.24 €	264.62 €	303.38 €
<b>Non-controlling interests</b>	<b>82.85 €</b>	<b>81.42 €</b>	<b>81.42 €</b>	<b>81.42 €</b>	<b>81.42 €</b>	<b>81.42 €</b>	<b>81.42 €</b>	<b>81.42 €</b>	<b>81.42 €</b>	<b>81.42 €</b>	<b>81.42 €</b>	<b>81.42 €</b>	<b>81.42 €</b>
<b>Total net equity</b>	<b>537.22 €</b>	<b>551.20 €</b>	<b>547.26 €</b>	<b>545.77 €</b>	<b>558.33 €</b>	<b>561.96 €</b>	<b>593.90 €</b>	<b>635.23 €</b>	<b>680.96 €</b>	<b>735.31 €</b>	<b>798.83 €</b>	<b>864.34 €</b>	<b>929.56 €</b>
<b>NON-CURRENT LIABILITIES</b>													
Borrowings and bond issues	979.26 €	1,683.96 €	2,207.39 €	2,665.73 €	3,086.50 €	3,475.42 €	3,788.95 €	4,038.00 €	4,196.67 €	4,274.37 €	4,314.36 €	4,327.40 €	4,308.00 €
Provisions and other liabilities	125.38 €	176.60 €	231.50 €	279.57 €	323.69 €	364.48 €	397.36 €	423.48 €	440.12 €	448.27 €	452.46 €	453.83 €	451.80 €
Employee benefit obligations	2.56 €	2.50 €	2.59 €	2.69 €	2.78 €	2.88 €	2.97 €	3.07 €	3.17 €	3.26 €	3.36 €	3.45 €	3.55 €
Deferred tax liabilities	183.25 €	290.28 €	227.06 €	225.09 €	230.10 €	225.29 €	210.21 €	183.21 €	144.26 €	124.44 €	116.03 €	105.34 €	91.62 €
<b>Total non-current liabilities</b>	<b>1,290.45 €</b>	<b>2,153.34 €</b>	<b>2,668.53 €</b>	<b>3,173.08 €</b>	<b>3,643.07 €</b>	<b>4,068.07 €</b>	<b>4,399.51 €</b>	<b>4,647.77 €</b>	<b>4,784.22 €</b>	<b>4,850.34 €</b>	<b>4,886.21 €</b>	<b>4,890.03 €</b>	<b>4,854.96 €</b>
<b>CURRENT LIABILITIES</b>													
Bank borrowings and bond issues	9.09 €	17.73 €	23.24 €	28.07 €	32.50 €	36.60 €	39.90 €	42.52 €	44.19 €	45.01 €	45.43 €	45.57 €	45.36 €
Employee benefit obligations	8.23 €	6.28 €	6.52 €	6.76 €	7.00 €	7.24 €	7.48 €	7.72 €	7.96 €	8.20 €	8.44 €	8.68 €	8.93 €
Payable to Group companies and associates	0.18 €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Trade and other payables	181.42 €	166.93 €	191.95 €	218.00 €	244.57 €	272.24 €	299.33 €	326.08 €	349.11 €	371.19 €	393.32 €	411.94 €	426.22 €
<b>Total current liabilities</b>	<b>198.92 €</b>	<b>190.94 €</b>	<b>221.71 €</b>	<b>252.83 €</b>	<b>284.07 €</b>	<b>316.08 €</b>	<b>346.70 €</b>	<b>376.32 €</b>	<b>401.26 €</b>	<b>424.40 €</b>	<b>447.20 €</b>	<b>466.19 €</b>	<b>480.51 €</b>
<b>Total Liabilities</b>	<b>1,489.37 €</b>	<b>2,344.28 €</b>	<b>2,890.24 €</b>	<b>3,425.91 €</b>	<b>3,927.14 €</b>	<b>4,384.14 €</b>	<b>4,746.21 €</b>	<b>5,024.09 €</b>	<b>5,185.48 €</b>	<b>5,274.74 €</b>	<b>5,333.41 €</b>	<b>5,356.22 €</b>	<b>5,335.47 €</b>
<b>TOTAL NET EQUITY AND LIABILITIES</b>	<b>2,026.59 €</b>	<b>2,895.48 €</b>	<b>3,437.51 €</b>	<b>3,971.68 €</b>	<b>4,485.47 €</b>	<b>4,946.10 €</b>	<b>5,340.11 €</b>	<b>5,659.31 €</b>	<b>5,866.44 €</b>	<b>6,010.06 €</b>	<b>6,132.24 €</b>	<b>6,220.56 €</b>	<b>6,265.03 €</b>

## 16. Debt Plan

Table 27 – Debt Forecast in €Millions | Source: Own calculations

Debt Forecast	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F
NET Debt / Adjusted EBITDA	3.99	5.21	5.74	5.92	5.98	5.93	5.77	5.56	5.33	5.03	4.71	4.45	4.23
EBITDA	216.8 €	263.5 €	324.0 €	387.0 €	453.3 €	524.5 €	596.6 €	670.2 €	736.9 €	803.1 €	871.4 €	932.4 €	983.7 €
Non-Recurrent Items	17.9 €	26.0 €	18.9 €	22.3 €	22.8 €	22.3 €	20.7 €	17.8 €	13.6 €	11.5 €	10.6 €	9.4 €	8.0 €
M&A PoPs	9216	3033	3581	4244	4335	4242	3932	3383	2588	2184	2012	1794	1514
Proxy for Non-recurrent Items / M&A PoP - Average 2015   2016	1.9 €	8.6 €	5.3 €	5.3 €	5.3 €	5.3 €	5.3 €	5.3 €	5.3 €	5.3 €	5.3 €	5.3 €	5.3 €
Adjusted EBITDA	234.7 €	289.6 €	342.8 €	409.3 €	476.1 €	546.8 €	617.3 €	688.0 €	750.5 €	814.6 €	882.0 €	941.9 €	991.6 €
Net Debt	937.4 €	1,508.8 €	1,968.1 €	2,424.5 €	2,846.9 €	3,240.3 €	3,562.1 €	3,822.8 €	3,997.7 €	4,094.1 €	4,154.7 €	4,191.6 €	4,198.4 €
Cash and Cash Equivalents	51.0 €	192.9 €	262.5 €	269.3 €	272.1 €	271.7 €	266.7 €	257.8 €	243.1 €	225.3 €	205.1 €	181.4 €	154.9 €
Total Debt	988.4 €	1,701.7 €	2,230.6 €	2,693.8 €	3,119.0 €	3,512.0 €	3,828.9 €	4,080.5 €	4,240.9 €	4,319.4 €	4,359.8 €	4,373.0 €	4,353.4 €
Current Debt	9.1 €	17.7 €	23.2 €	28.1 €	32.5 €	36.6 €	39.9 €	42.5 €	44.2 €	45.0 €	45.4 €	45.6 €	45.4 €
[1.04% of Total Debt as off 2016]													
Non Current Debt	979.3 €	1,684.0 €	2,207.4 €	2,665.7 €	3,086.5 €	3,475.4 €	3,789.0 €	4,038.0 €	4,196.7 €	4,274.4 €	4,314.4 €	4,327.4 €	4,308.0 €
[98.96% of Total Debt as off 2016]													

## 17. CAPEX

Table 28 – CAPEX in €Millions. Source: Own Calculations

	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F
Maintenance Capex	17.9 €	21.4 €	24.3 €	27.6 €	31.0 €	34.5 €	37.9 €	41.3 €	73.7 €	78.3 €	83.0 €	86.9 €	90.0 €
% Revenues [Guideline 3%]	2.9%	3.0%	3%	3%	3%	3%	3%	3%	5%	5%	5%	5%	5%
Expansion Capex	48.0 €	57.3 €	56.7 €	73.6 €	82.6 €	91.9 €	101.1 €	137.6 €	147.4 €	156.7 €	166.0 €	173.9 €	179.9 €
%Revenues [Guideline 5-10%]	7.8%	8.1%	7%	8%	8%	8%	8%	10%	10%	10%	10%	10%	10%
M&A Capex [N° M&A PoP x M&A Capex/PoP]	739.5 €	705.6 €	736.9 €	733.6 €	749.4 €	733.4 €	679.8 €	584.8 €	447.4 €	377.6 €	347.9 €	310.2 €	261.8 €
M&A PoPs	9,216	3,033	3,581	4,244	4,335	4,242	3,932	3,383	2,588	2,184	2,012	1,794	1,514
CAPEX/PoPs	80.24 €	232.63 €	205.76 €	172.88 €	172.88 €	172.88 €	172.88 €	172.88 €	172.88 €	172.88 €	172.88 €	172.88 €	172.88 €
<b>Total Investment</b>	<b>805.3 €</b>	<b>784.3 €</b>	<b>817.9 €</b>	<b>834.9 €</b>	<b>863.0 €</b>	<b>859.8 €</b>	<b>818.8 €</b>	<b>763.8 €</b>	<b>668.4 €</b>	<b>612.6 €</b>	<b>596.9 €</b>	<b>571.0 €</b>	<b>531.7 €</b>
Additions of PPE	90.1 €	201.5 €	209.4 €	226.0 €	239.5 €	247.3 €	247.8 €	263.7 €	273.4 €	271.9 €	278.2 €	281.1 €	279.5 €
Additions of Intangible assets	4.7 €	8.7 €	9.0 €	9.8 €	10.3 €	10.7 €	10.7 €	11.4 €	11.8 €	11.7 €	12.0 €	12.1 €	12.1 €
Advance site rental payments	17.5 €	26.6 €	27.6 €	29.8 €	31.6 €	32.6 €	32.7 €	34.8 €	36.1 €	35.9 €	36.7 €	37.1 €	36.9 €
Capital Expenditures	112.3 €	236.8 €	246.1 €	265.5 €	281.4 €	290.7 €	291.2 €	309.9 €	321.2 €	319.6 €	326.9 €	330.3 €	328.5 €
M&A Capital Expenditures	693.0 €	547.5 €	571.8 €	569.3 €	581.6 €	569.2 €	527.5 €	453.8 €	347.2 €	293.0 €	270.0 €	240.7 €	203.2 €

## 18. Depreciation and Amortization

Table 29 – Depreciations and Amortizations in €Millions. Source: Own Calculations

	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F
<b>Property, Plant and Equipment</b>													
PROXY for Changes in Consolidation Scope	234.2 €	43.5 €	71.2 €	84.4 €	86.2 €	84.3 €	78.2 €	67.3 €	51.4 €	43.4 €	40.0 €	35.7 €	30.1 €
PoP Acquired (M&A)	9216	3033	3581	4244	4335	4242	3932	3383	2588	2184	2012	1794	1514
PPE Contribution PoP	25.4 €	14.3 €	19.9 €	19.9 €	19.9 €	19.9 €	19.9 €	19.9 €	19.9 €	19.9 €	19.9 €	19.9 €	19.9 €
Cost (31 Dec)	1,200.1 €	1,441.3 €	1,721.9 €	2,032.2 €	2,357.8 €	2,689.5 €	3,015.5 €	3,346.5 €	3,671.3 €	3,986.6 €	4,304.8 €	4,621.6 €	4,931.2 €
Depreciation from the period	- 128.8 €	- 135.3 €	- 173.2 €	- 204.4 €	- 229.2 €	- 266.0 €	- 280.3 €	- 292.4 €	- 301.6 €	- 307.8 €	- 312.4 €	- 315.3 €	- 316.2 €
Depreciation Rate	10.7%	9.4%	10.1%	9.7%	9.9%	9.3%	8.7%	8.2%	7.7%	7.3%	6.8%	6.4%	6.0%
Accumulated Depreciation	- 264.3 €	- 392.9 €	- 566.0 €	- 770.4 €	- 999.6 €	- 1,265.6 €	- 1,545.9 €	- 1,838.4 €	- 2,139.9 €	- 2,447.7 €	- 2,760.2 €	- 3,075.5 €	- 3,391.7 €
Carrying Amount	935.8 €	1,048.4 €	1,155.8 €	1,261.8 €	1,358.2 €	1,423.9 €	1,469.6 €	1,508.1 €	1,531.4 €	1,538.9 €	1,544.7 €	1,546.1 €	1,539.5 €
<b>Intangibles</b>													
<b>Infrastructure Related</b>													
PROXY for Changes in Consolidation Scope	498.8 €	483.7 €	382.5 €	453.2 €	463.0 €	453.1 €	420.0 €	361.3 €	276.4 €	233.2 €	214.9 €	191.6 €	161.7 €
PoP Acquired (M&A)	9216	3033	3581	4244	4335	4242	3932	3383	2588	2184	2012	1794	1514
PPE Contribution PoP	54.1 €	159.5 €	106.8 €	106.8 €	106.8 €	106.8 €	106.8 €	106.8 €	106.8 €	106.8 €	106.8 €	106.8 €	106.8 €
Cost (31 Dec)	596.7 €	1,081.9 €	1,464.4 €	1,917.6 €	2,380.6 €	2,833.6 €	3,253.6 €	3,614.9 €	3,891.3 €	4,124.5 €	4,339.4 €	4,531.1 €	4,692.8 €
Amortization from the period	- 21.1 €	- 37.4 €	- 51.2 €	- 66.6 €	- 83.0 €	- 92.8 €	- 100.2 €	- 104.7 €	- 105.9 €	- 105.5 €	- 104.3 €	- 102.4 €	- 99.7 €
Amortization Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.3%	3.1%	2.9%	2.7%	2.6%	2.4%	2.3%	2.1%
Accumulated Amortization	- 22.8 €	- 60.2 €	- 111.4 €	- 178.0 €	- 261.0 €	- 353.8 €	- 454.0 €	- 558.7 €	- 664.6 €	- 770.1 €	- 874.4 €	- 976.9 €	- 1,076.6 €
Carrying Amount	573.9 €	1,021.7 €	1,353.0 €	1,739.6 €	2,119.6 €	2,479.8 €	2,799.6 €	3,056.2 €	3,226.7 €	3,354.4 €	3,465.0 €	3,554.2 €	3,616.2 €
<b>Computer Software and others</b>													
Cost (31 Dec)	20.2 €	29.0 €	38.0 €	47.8 €	58.1 €	68.8 €	79.5 €	90.8 €	102.6 €	114.4 €	126.4 €	138.5 €	150.6 €
Amortization from the period	- 3.7 €	- 4.1 €	- 6.1 €	- 7.2 €	- 9.1 €	- 10.1 €	- 11.0 €	- 11.8 €	- 12.5 €	- 13.1 €	- 13.6 €	- 14.0 €	- 14.4 €
Amortization Rate	18.1%	14.2%	16.1%	15.2%	15.6%	14.7%	13.8%	13.0%	12.2%	11.5%	10.8%	10.1%	9.5%
Accumulated Amortization	- 11.4 €	- 15.6 €	- 21.7 €	- 28.9 €	- 38.0 €	- 48.1 €	- 59.1 €	- 70.9 €	- 83.4 €	- 96.6 €	- 110.2 €	- 124.2 €	- 138.6 €
Carrying Amount (Computer Software and others)	8.8 €	13.4 €	16.3 €	18.8 €	20.1 €	20.7 €	20.4 €	19.9 €	19.2 €	17.8 €	16.2 €	14.3 €	12.0 €
<b>Total</b>													
Amortization from the period	- 24.7 €	- 41.5 €	- 57.3 €	- 73.9 €	- 92.1 €	- 103.0 €	- 111.2 €	- 116.5 €	- 118.4 €	- 118.6 €	- 118.0 €	- 116.5 €	- 114.1 €
Carrying amount	582.6 €	1,035.2 €	1,369.3 €	1,758.4 €	2,139.7 €	2,500.5 €	2,819.9 €	3,076.1 €	3,245.9 €	3,372.2 €	3,481.2 €	3,568.5 €	3,628.2 €
Total Depreciation and Amortization	- 153.5 €	- 176.8 €	- 230.5 €	- 278.3 €	- 321.3 €	- 368.9 €	- 391.5 €	- 408.9 €	- 420.0 €	- 426.4 €	- 430.4 €	- 431.8 €	- 430.3 €

## References

- Damodaran, A. (2011). Applied Corporate Finance. In A. Damodaran, *Applied Corporate Finance* (3rd ed., p. 135). United States: John Wiley & Sons, Inc.
- Fernandez, P. (2004). *80 common erros in company valuation*. Madrid: IESE Business School.
- Fernandez, P. (2010). *WACC: definition, misconceptions and errors*. Madrid: IESE Business School.
- Fernandez, P. (2013). *Valuing Companies by Cash Flow Discounting: Fundamental Relationships and Unnecessary Complications*. Madrid: IESE Business School.
- Fernandez, P. (2015). CAPM: an absurd model. *Business Valuation Review*, 34(1), 4-23.
- Fernandez, P. (2015). *Three Residual Income Valuation Methods and Discounted Cash Flow Valuation*. Madrid: IESE Business School.
- Fernandez, P. (2017). *Valuing Using Multiples. How do analysts reach their conclusions?* Madrid: IESE Business School.
- French, E. F. (2004). The Capital Asset Pricing Model: Theory and Evidence. *Journal of Economic Perspectives*, 18(3), 25-46.
- Hamada, R. S. (1972). The Effect of the Firm's Capital Structure on the Systematic Risk of Common Stocks. *The Journal of Finance*, 27(2), 435-452.
- Hull, J. C. (2012). *Options Futures, and other Derivatives*. UK: Pearson Education Limited.
- Hull, J. C. (2012). *Options, Futures and Other Derivatives*. UK: Pearson Education Limited.
- Jerald E. Pinto, CFA / Elaine Henry, CFA / Thomas R. Robinson, CFA / John D. Stowe, CFA. (2010). *Equity Asset Valuation* (Second Edition ed.). New Jersey: John Wiley & Sons, Inc.
- Luehrman, T. A. (1997, June 1). *Financial Management*. Retrieved 2017, from Harvard Business Review: <https://hbr.org/1997/05/using-apv-a-better-tool-for-valuing-operations>
- Luehrman, T. A. (1997, June 01). *Financial Management*. Retrieved from Harvard Business Review: <https://hbr.org/1997/05/whats-it-worth-a-general-managers-guide-to-valuation>
- Marc Zenner, S. H. (2008). *The Most Important Number in Finance*. US: JP Morgan.
- Miller, F. M. (1958). The Cost of Capital, Corporate Finance and the Theory of Investment. *The American Economic Review*, 48(3), 261-297.
- Myers, S. C. (1974). Interactions of Corporate Financing and Investment Decisions-Implications for Capital Budgeting. *The Journal of Finance*, 29(1), 1-25.
- Nikhil Chandra Shil, A. (2009). Performance Measures: An Application of Economic Value Added. *International Journal of Business and Management*, 4(3), -.
- Schreiner, A. (2007). *Equity Valuation Using Multiples: An Empirical Investigation*. Switzerland: University of St.Gallen.

Seasholes, R. S. (2005). *The Assumptions and Math behind WACC and APV Calculations*. CA: Berkeley Haas School of Business.

Stephen A. Ross, R. W. (2013). *Corporate Finance*. McGraw-Hill Irwin.

Tim Koller, M. G. (2010). *Valuation: Measuring and Managing the Value of Companies*. New Jersey: John Wiley & Sons, Inc.

## **Other Resources:**

Cellnex Telecom S.A. Annual and Half Annual Reports (2011-2017)

Cellnex Telecom S.A. Results Presentations (2015-2017)

TowerXchange Website: [www.towerxchange.com](http://www.towerxchange.com)

TowerXchange Europe Dossier (2016, 2017)

Mobile Europe Magazine, Issue N° 245

Mobile Infrastructure Sharing Report, GSMA

CISCO Visual Networking Index: Global Mobile Data Traffic Forecast 2016-2021

Deloitte 2017 Telecommunications Industry Outlook

PwC 2017 Telecommunications Trends: Aspiring to Digital simplicity and clarity in strategic identity

Bloomberg Global telecommunications: 2016 outlook

American Tower Investor's presentation 2014

European Commission: Digital Single Market, 5G technology

QUALCOMM website: [www.qualcomm.com/invention/technologies/wireless](http://www.qualcomm.com/invention/technologies/wireless)

Analysys Mason Report: Global trends for tower markets (2016)