MERGERS AND ACQUISTIONS:

THE CASE OF ZON MULTIMÉDIA AND SONAECOM

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ABSTRACT

The possible merger between Zon and Sonaecom is something that has been discussed on the market in the last years, and this dissertation aimed to make a thorough analysis of the companies and whether there is value creation with the completion of the merger.

The telecommunications market in Portugal is reaching a stage of maturity, and the country's economic situation together with the intense competition makes it difficult for companies to have a high organic growth. Instead, in recent years companies had results below expectations mainly due to lower private consumption that is taking place in the country, and its market value significantly devalued. Therefore, a merger between the companies would allow the rapid creation of value for Zon and Sonaecom's shareholders because of both cost and revenue synergies, along with the fact that the merged company would become a stronger business and would be able to compete with the main competitor, Portugal Telecom.

Thus, according to the methodology explained in the literature review, I calculated the Sonaecom standalone value and the synergies from the merger, and the Sonaecom's last closing price is found to be undervalued, with 5% upside potential, and synergies are estimated at around 131% of Sonaecom's market capitalization[1]. It is therefore concluded that Zon must make a tender offer to Sonaecom offering a price of 1.21€ per share plus a premium that covers the total or partial value of synergies.

[1] Calculations made with the closing price of May 29, 2012 – 1,15€

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1. INTRODUCTION

The aim of my thesis is to examine the possible merger of Zon and Sonaecom, and whether it creates value for both companies' shareholders. In order to do this, the dissertation was divided into several key points.

The first section is the literature review, where it was made an analysis of the existing academic literature about valuation approaches and what points should be taken into account in a merger and acquisition operation.

In the following section there is an analysis of the M&A telecom industry, and the situation of the Portuguese telecom market. Then it is analyzed the situation of Zon and Sonaecom in recent years and their goals for the future.

The third section is intended for a standalone valuation of both companies, but before the valuation is made an introduction regarding the economic environment in Portugal.

Then there is a section devoted to the valuation of the merged company, where it is first performed a valuation of the merged company without synergies, and then a valuation with synergies. Lastly, it is considered if the acquisition should be made or not, how much to pay and how to pay it.

2. LITERATURE REVIEW

For years companies have been making mergers and acquisitions, and quite a few studies have shown that these transactions create value for its shareholders with the largest gains occurring in the acquired company (Andrade, Mitchell, and Stafford – 2001). More specifically, studies such as Devos, Kadapakkam and Krishnamurthy (2009) and Houston, James, and Ryngaert (2001) have found that the average gains from mergers are around 10%. However, more than a simple investment, these operations allow companies to make a shortcut to their strategic objectives, but before proceeding with an acquisition it is necessary to find whether the combined company after the merger will be more valuable than the sum of both companies and from where the creation of value comes. According to Andrade, Mitchell, and Stafford (2001) this creation of value can result from several sources such as synergies due to efficiency reasons, like economies of scale; creation of market power, resultant from the creation of an oligopoly, however this possibility has become more difficult since the 1940s due to antitrust laws; improvement of the management of the acquired company, thereby making it more efficient; and in order to diversify the company. Damodaran (2002) also refers that this decision may be made without taking into account the shareholders wealth maximization, but managerial self-interest, and therefore instead of creating opportunities for the company, may even destroy value.

There are various types of acquisitions and all of them can result in very good investments and enable the company to reach its goals faster because it can boost the expansion of the business and create several sources of returns, assuming that the valuations are well made.

In order to facilitate the understanding and make clear the procedures which are required when making an acquisition, this literature review is divided into four main sections: types of mergers and acquisitions, factors to be taken into account when making a valuation, valuation of the acquisition and methods of payment.

2.1. Types of Mergers & Acquisitions

According to Damodaran (2002) there are several types of mergers and acquisitions, differing from each other in the way of how both companies reach an agreement, the percentage of the target company that is acquired and how is the company resulting from this operation.

- When one company acquires another this may be a merger if the board of directors of both companies reached an agreement to combine them, and if most of the

shareholders have agreed with the decision, being the result of this operation the end of the target company since it will be fully incorporated in the acquiring company;

- It is a consolidation if the merger of both companies results in a new company owned by shareholders of both companies that have joined;
- It is a tender offer the acquiring company makes an offer directly to shareholders and the managers and board of directors of both companies do not reach an agreement, thus the merger will happen if the shareholders sell their shares to the acquiring company (this method is used to make hostile takeovers);
- It can also be an acquisition of assets, when the company simply buys assets from another (there is still needed an approval by votes from shareholders).
- Lastly, another form of acquisition is a buyout and occurs when the management of the company or outside investors acquires the company through a tender offer, thus the target company will no longer be a publicly traded and will become again a private company.

Of all these types of acquisitions, according to Loughran and Vijh (1997) the one that has a greater postacquisition wealth gains is the tender offer, however according to Travlos (1987) the explanation for this to happen may be due to the fact that this type of acquisition usually uses cash offers as method of financing.

Brealey, Myers, and Allen (2008) suggest a different way to divide the types of acquisitions as horizontal, vertical and conglomerate merger. When the acquisition occurs between companies that belong to the same industry is known as horizontal merger, and if it is between companies at different stages of production, such as client-supplier, is knows as vertical merger. Finally, the operation is classified as conglomerate merger if involves companies from unrelated business.

2.2. Factors to be taken into account when making a valuation

By proceeding with a valuation, in order to avoid errors, it is important to try to understand why the market is very skeptical about the value created by acquisitions and Sirower and Sahni (2006) suggest that this is because an acquisition requires a full payment upfront, and if the company had invested in other areas instead, such as R&D, the payment would be made in different phases and thus with a lower risk; the authors also refer that synergies only occur when the new company can overcome the performance that was already expected for the companies separately, and often in the calculation of synergies it is considered a certain

performance improvement that was already expected, which leads to errors; furthermore, no synergy is free and it is necessary to incur in costs to achieve it, and finally once an acquisition goes wrong, if the integration was already started it will be very expensive to cancel it. Thus, when making a valuation, these points should be considered to transmit a good image to the market.

Lastly, another point that it would also be interesting to check would be to verify why some acquisitions are successful and others not and what are the long-term effects resulting from a merger, but the studies that were conducted on this issue do not have much to say (Andrade, Mitchell, and Stafford – 2001). Therefore, the specific situation of each company must be taken into account when an acquisition is being considered, the managers should not be carried away by the enthusiasm of the acquisition and overestimate the value that result from it, and should be very critical in order to make a rigorous analysis and as true as possible.

2.3. Valuation of the acquisition

In order to decide how much to pay for a company when making an acquisition it is necessary to value the target company and the value created that will result from the operation. One of the most common ways to compute the value of the final company is by calculating the value of both companies separately, the value of synergies that will occur after the merger and the value created due to better management and improvement of the acquired company in terms of efficiency (Damodaran – 2005).

2.3.1. Valuation Approaches

Understanding the process of valuation is an important prerequisite for those who want to have an important role in resource allocation decisions of a company (Luehrman 1997a). For instance, this process is essential not only for the acquirer but also for the target firm. The first will have to make a valuation of the target firm in order to know how much it will be the initial offer. On the other hand, the target firm will also have to make a valuation of itself in order to know how much it's worth and decide if it should accept or reject the offer (Damodaran – 2002).

There are several methods that can be used to value a company, and the opinions vary regarding which method is the best. Discounted cash flows methodology is the one chosen and

used by the academics over the past 20 years (Luehrman 1997b). However, by using both discounted cash flows and relative valuation the results will be more complete (Kaplan & Ruback 1996).

2.3.1.1. Discounted Cash Flow Valuation

When using a discounted cash flows methodology it is necessary to predict the future value of cash flows and then discount them to the present, using a discounting rate that will represent their riskiness (Luehrman 1997b). However, there are different ways to execute the valuation. The discounted cash flows methodology using the weighted average cost of capital (WACC) has a discounting rate that has been used in the last years as the standard version, but nowadays the adjusted present value (APV) is viewed from many as the best methodology (Luehrman 1997a).

2.3.1.1.1. WACC

The WACC is estimated as the weighted average of the cost of debt and the cost of equity, being the combination called as the weighted average cost of capital (Brealey, Myers, and Allen - 2008). Since this discounting rate has to represent the level of risk of the cash flows (Luehrman 1997b), it has to be adjusted to reflect the value that results from the financing program. As a result, to calculate the cost of capital it is needed both the cost of equity and cost of debt, as well as the weight of debt and equity in the company.

According to Brealey, Myers, and Allen (2008), the formula for estimating the after-tax weighted average cost of capital is the weighted average of after-tax cost of each source of capital:

$$WACC = r_D(1 - T_C)\frac{D}{V} + r_E\frac{E}{V}$$

Where the D and E are the market values of debt and equity, and V is the total market value of the firm. The r_D and r_E are the costs of debt and equity, and T_c is the marginal tax rate.

- Cost of Equity

The cost of equity is the expected rate of return to investors and the capital asset price model, or CAPM, is the standard model to measure it (Brealey, Myers, and Allen - 2008). According to

Damodaran (2002), the model assumes that there are no transaction costs and that all the investors have access to the same information. Because of that, all the investors are diversified by holding a market portfolio, not being exposed to the firm specific risk. Thus, it will be measured the rate of return that diversified investors demand to put money into the firm.

Concerning the capital asset price model, according to Booth (1999) the cost of equity will be primarily determined by the estimation of the appropriate risk-free rate and the risk premium, and lastly the equity risk premium will be adjusted for the particular risk of the firm. Then, the cost of equity can be calculated by using the next formula:

$$k_j = r_F + \beta_j * (E(r_e) - r_f)$$

Where the k_j is the required return to investors, the r_F is the risk-free rate and the value that is used in most equity discount rates calculations is the Long-term Treasury Bond yields (Booth - 1999). The risk premium will be the difference between the expected return of the market (E(re)) and the risk-free rate, and the most used estimation of the risk premium is comparing the returns on stocks over a long time period with the returns earned on a default-free asset, and the difference among the two returns will represent the historical risk premium (Damodaran - 2002). However, according to the same author, another way to calculate the risk premium is to add the adjusted country risk premium (that is estimated by multiplying the default spread according to the specific country's rating, by 1,5[2]) with the historical risk premium for a mature equity market. Lastly, the β_j is the firm's beta coefficient that represents the non-diversified risk and it is estimated by the slope coefficient of the regression between past returns of the firm and the market (Bruner, Eades, Harris and Higgins – 1998).

- Cost of Debt

In addition to obtaining money through equity investors, the company is also financed through lenders. These last lend money to the company and expect to get a certain return, represented by the cost of debt. This rate is determined by the risk-free rate plus the default-risk of the company, thus the cost of borrowing money will increase as the riskless rate and the default-risk increases (Damodaran - 2002).

[2] Average of equity to bond market volatility available in Damodaran's website.

2.3.1.1.2. Growth Rate

According to Damodaran (2002) the growth rate can be estimated in three ways: (1) by looking at the historical earnings and analyze how it has developed, however this method does not become suitable for the case of a company that does not have stable results, and this happens with the companies that are being analyzed, which in recent years showed considerable variations in the results. (2) a second way is by using the estimations of the equity research analysts, and if these values are trustworthy it can be a good estimation of the growth rate, as the analysts have been following and analyzing the firm for a long period of time. (2) Lastly, by estimating the growth from firm's fundamentals, determined by the return on investment (ROC) and the reinvestment rate[3]. Although those determinants can remain stable for most businesses, for high growth firms the estimation of those values can be challenging.

Regarding the estimation of the evolution that cash flows will have in the long term it is needed to calculate the terminal growth rate, and according to Kaplan and Ruback (1996) the terminal growth rate should reflect both expected real growth and inflation growth. Thus, the latter method of calculating this rate will be used to obtain the terminal value during the valuation.

2.3.1.1.3. Equity Valuation

According to Damodaran (2002), the equity valuation model discounts the expected free cash flows to the equity (that are what result after the firm meets "all expenses, reinvestment needs, tax obligations and net debt payments"), using a discounting rate that represents the rate of return required by the equity owners, i.e., the cost of equity.

Damodaran (2002) states that in this method it is necessary to calculate the forecasted values of FCFE by subtracting the Net Capital Expenditure, Change in Net Working Capital and Debt Repayment to the Net Income, and finally by adding the value of New Debt[4]; and also the cost of equity in order to calculate de value of equity.

$$\text{Value of Equity} = \sum_{i=1}^{n}\left(\frac{FCFE_i}{(1+k_E)^i}\right) + \frac{FCFE_{n+1}}{(k_E - g)} * \frac{1}{(1+k_E)^n}$$

[3] Growth rate = ROC * Reinvestment rate

[4] FCFE = Net Income - Net Capital Expenditure - Change in Net Working Capital + New Debt - Debt Repayment

- Limitations

According to Copeland, Koller and Murrin (2000) this method is very simple in theory but it will present many difficulties in its practical application. Firstly, when performing these calculations it is only obtained the equity value of a company, instead of the enterprise value. Thus, does not take into account the debt and its positive and negative effects. The same authors also reported that this method of discounting cash flows to the equity is less transparent regarding sources of value created and it is not useful in identifying opportunities to create value to the company.

2.3.1.1.4. Firm Valuation

The firm valuation model values the equity as the value of a firm's operations less the value of debt and other investor claims that are superior to common equity (Copeland, Koller and Murrin – 2000). Thus, according to Damodaran (2002), the future cash flows to the firm will be obtained after the firm meets all its "operating expenses, reinvestment needs and taxes", and before payments to equity holders and debt.

In this method it is used the forecasted values of FCFF that are calculated by subtracting the Taxes, Depreciation, Changes in Net Working Capital and Capital Expenditures to the value of EBIT[5]; and it is also used the weighted cost of capital in order to calculate de value of the firm (Damodaran – 2002):

$$\text{Enterprise Value} = \sum_{i=1}^{n}\left(\frac{FCFF_i}{(1+WACC)^i}\right) + \frac{FCFF_{n+1}}{(WACC-g)} * \frac{1}{(1+WACC)^n}$$

- Limitations

According to Luehrman (1997b) this version of discounted cash flow valuation became the standard since 1970s, however nowadays this method is considered by many authors as outdated since there is a wide range of technology and information available and consequently other valuations methods became better, cheaper and easy to use. Regarding this methodology, there is a simplification that is made when the weighted average cost of capital is being calculated that assumes a constant financial leverage until perpetuity when calculating

[5] FCFF = EBIT (1 - tax rate) + Depreciation - Capital Expenditure - Δ Working Capital

the terminal value, thus if the capital structure is expected to change the result of the valuation will not be longer correct since the cash flows should be discounted at a different discounting rate (Brealey, Myers, and Allen – 2008). Luehrman (1997a) also refers another pitfall of using this method concerning the valuation of the financial effects since it only addresses tax effects, not taking into account other possible effects.

2.3.1.1.5. Adjusted Present Value

The Adjusted Present Value methodology appeared about 20 years ago as an alternative to the use of the WACC as the discount rate (Luehrman – 1997b). At that time the several components that needed to be calculated by the APV made the method expensive to be used. However nowadays, due to technological developments, that extra informative component is very inexpensive (Luehrman – 1997a).

This approach is view for many as a more transparent and versatile method since it allows to easily see the various sources of value and also to tailor the analysis. For instance, the valuation can be more specific where it makes more sense for a specific industry (Luehrman – 1997a). Moreover, it has the advantage of being more useful in valuing companies that do not have a constant level of leverage, and the same does not happen in WACC which assumes a fixed capital structure for calculating the discount rate (Copeland, Koller and Murrin – 2000).

In this approach the valuation will have several steps. Firstly will be calculated the value of the company without debt. Subsequently, as the debt is added, it will have to be considered both positive and negative effects that the leverage will bring to the firm (Damodaran – 2002). On the positive side it will be considered interest tax shields resulting from the reduction of the taxable income by the amount of the interest, which will reduce the tax amount to be paid by the company (Luehrman – 1997a). Moreover, the bankruptcy costs should also be considered in this valuation as a negative effect of the financing program, this happens because the more indebted a company is, the higher will be the risk of bankruptcy (Damodaran – 2002).

- Unlevered Firm Valuation

The first step will be to forecast the Free Cash Flows to the Firm and then discount all those cash flows to their present value using the unlevered cost of equity as the discounting rate (Luehrman – 1997a) and it also has to be considered the growth rate in case there is a steady growth of cash flows until perpetuity (Damodaran – 2002).

$$\text{Value of Unlevered Firm} = \sum_{i=1}^{n}\left(\frac{FCFF_i}{(1+k_{E\,unlevered})^i}\right) + \frac{FCFF_{n+1}}{(k_{E\,unlevered}-g)} * \frac{1}{(1+k_{E\,unlevered})^n}$$

Where FCFF is the Free Cash Flow to the Firm, $k_{E\ unlevered}$ is the unlevered cost of equity and g is the expected terminal growth rate (Damodaran – 2002). In order to proceed with the valuation it is necessary to estimate the unlevered cost of equity. It was seen before how to estimate the cost of equity, however was being used the current equity beta of the firm and in this point it will be need the unlevered beta,

$$\beta_{\text{unlevered}} = \frac{\beta_{\text{levered}}}{1+(1-t)\frac{D}{E}}$$

Where $\beta_{unlevered}$ and $\beta_{levered}$ are respectively the unlevered and levered equity beta of the firm, t is the tax rate for the firm and D/E is the current debt/equity ratio (Damodaran – 2002).

- Expected Interest Tax Shields

The next step will be the calculation of the interest tax shields that result from a certain level of debt and in this calculation it will be used the tax rate and the interests that the company pays, being discounted at a rate that represents the risk of these cash flows (Damodaran – 2002). However, academics do not agree on the rate that should be used to discount the interest tax shields. Some argue that the discount rate to be used should be higher than the cost of debt since the managers will adjust the level of debt as the company's performance change, and this will result in fluctuation of the level of debt depending on how the operating results will fluctuate (Luehrman – 1997a). On the other hand, Miles and Ezzell (1985) propose discounting the tax savings in the first year at the cost of debt and the following years at r_A, thus the correct formula for the Terminal Value of Tax Shields with a perpetuity growing at a rate g would be:

$$TV(TS) = \frac{tK_D D_T (1+K_A)}{(K_A - g)(1+K_D)}$$

Nevertheless, most academics such as Damodaran (2002), Brealey, Myers, and Allen (2008), Modigliani and Miller (1963) and Myers (1974) propose that the cost of debt should be used assuming that tax shields have a similar risk to debt, so the Present Value of the Tax Shields will be:

$$\text{Present Value of the Tax Shields} = \frac{D * K_D * T_c}{K_D} = D * T_c$$

- Costs of Financial Distress and Net Effect

According to Damodaran (2002), when a company has a certain level of debt, there is a risk of default that results from the probability that a company will be unable to pay the debt. If this happens the company will incur in costs of financial distress. In order to calculate the present value of those costs it is used the following formula, where $\Pi_{default}$ is the default probability:

Costs of Financial Distress = $\Pi_{default}$*(Value of the unlevered firm)*%loss

According to Korteweg (2007), the percentage of loss of the firm value in case of financial distress is 18,5% for the telecom industry, and the default spread will be related with the rating of the company. Thus, after calculating the CFD for each year, it will be discounted at the cost of debt (the same as tax shields).

- Limitations

According to Luehrman (1997a) this is a very versatile and transparent methodology but it has some limitations, one of them is related with the inability to adapt this discounted cash flow methodology to valuing projects that are essentially options. Another fact that the author point out is the difficulty in estimating the costs of financial distress, and if this value is not well calculated the firm value will be overvalued, especially if it has considerable high debt ratios (Damodaran - 2002).

2.3.1.2. Multiples

The method of relative valuation is based on how similar are the assets that are listed in the market (Damodaran - 2002), and the result of this valuation will be directly proportional to future payoffs and inversely proportional to risk (Liu and Thomas – 2000). Therefore, Liu and Thomas (2000) suggest that this method can be a substitute for comprehensive valuations since it has the same essence, or that can also be used as a complement for those comprehensive valuations, by helping to calibrate them and to obtain terminal values. This last suggestion is also made by Kaplan and Ruback (1996) that after their study of the valuation of 51 HLTs found that although discounted cash flows methods perform better than relative

valuation, suggest that both methods should be used in order to have extra explanatory power in the estimations.

According to Kaplan and Ruback (1996) the firms' value is calculated by multiplying a specific multiple by the performance measure for the company to be valued, however it is essential to make the assumption that on one hand it is assumed that the comparable companies will have the same expected growth rate and level of risk for their cash flows as the company being valued has, and on the other hand that the changes in value of the company and the changes in the performance measure will vary in the same proportions. Damodaran (2002) also suggests that the prices of the companies should be converted into multiples of earnings, book values or sales in order to standardized prices.

- Different comparables

There are several multiples that are used in relative valuation, it can be multiples using earnings, book values or revenues, for example. According to Damodaran (2002), the earnings multiple is very intuitive since the price/earnings ratio will result in how much earnings it is expected per share, however when the multiple is being used in order to analyze the value of a company that will be acquired, it is better to use EBITDA instead of earnings. Another multiple that Damodaran (2002) refers is the relationship between the market value and book value of equity, and this multiple is mostly used to analyze if the stock is well valued. However, it may not be good for making analyzes between different industries since it is related with the expected growth and projects available for a company in a specific industry. Lastly, since several multiples are very influenced by accounting rules, this link will be much smaller by using a ratio such as price/sales, and may be beneficial to compare companies that are in countries with different accounting rules. However, Liu and Thomas (2000) suggest that multiples with sales are those with a worse performance in their study. Furthermore, some academics (Damodaran – 2002) suggest that it should be used some multiples that would be specific to certain industries, but Liu and Thomas (2000) do not agree that among different industries it would be better to use different multiples since in their study the best multiples are consistently the same for different industries.

- Limitations

In this methodology it is very important to have a group of comparable firms that are very similar, and a limitation that Kaplan and Ruback (1996) refer is the fact that it is impossible to

have a comparable set of companies that are perfect matches in order to use multiples. Because of this problem Goedhart, Koller and Wessels (2005) suggest to use peers with similar prospects for ROIC and growth in order to minimize the differences among companies and to have similar perspectives of growth and investments for them to be compared. Another limitation is the fact that there is no measure of performance that it is considered the best among all the others, thus the choice of the multiple to use is not obvious (Kaplan and Ruback - 1996). Lastly, Damodaran (2002) also suggests that because this method represents the expectations of the market it can be influenced with some speculations and furthermore it also refers the fact that the method can be subject to some manipulation because it is not very transparent.

2.3.2. Premium

When there is an acquisition there will be a value creation which is why in order to increase the wealth of its shareholders, the acquiring company makes a bid to buy another company. Thus, the price to be paid for the target company is not only its value but that value plus a premium, so it is necessary to calculate that difference in order to decide what premium must be paid.

This premium may result through improved management of the acquired company in order to become more efficient (Value of Control), increased market power or from the synergies that will result from the merger between the two companies (Andrade, Mitchell, and Stafford - 2001). However, it is very important to calculate these values separately to avoid any double counting (Damodaran – 2005).

2.3.2.1. Value of Control

According to Damodaran (2005), the value of control occurs when the target company is being mismanaged and it is not being as efficient as possible, so there is potential to create value by improving these aspects. However, this improvement could be held without the target being acquired and because of that, it is acceptable to offer 100% of the value of control as premium. The author also suggests that the value of control should be found by calculating the value of the acquired company assuming a better management and all the improvements minus the status quo (valuation of the target with the same management).

2.3.2.2. Synergies

Synergies are usually the main justification of the acquiring company to proceed with an acquisition and result from the value that is created by merging two companies that would not be created if they were independent from each other. Synergies may arise from various sources and according to Damodaran (2005) and Devos, Kadapakkam and Krishnamurthy (2009) the most common way to divide them is by categorizing as operating and financial synergies. However, these sources of value creation for the company are often overvalued by analysts (Damodaran – 2005), and managers also tend to give a greater value to it due to the enthusiasm resulting from the acquisition, thus the correct valuation of synergies becomes a focal point in order not to pay a premium above the one that is really created. Therefore, corporate boards should always check whether there are sufficient procedures to avoid criminal activity by management and if the data given to shareholders represent the true state of business (Sirower and Sahni – 2006).

2.3.2.2.1. Operating Synergies

This type of synergies result from changes that occur in cash flows that are related with operations (Devos, Kadapakkam and Krishnamurthy - 2009) and according to Damodaran (2005) it can be created through economies of scale that occur mostly in companies from the same sector since it will allow the company to be more cost-efficient and profitable by joining the assets of both companies and create a production with a larger scale; additional pricing power resulting from a less significant competition and higher market share, also more likely in horizontal mergers; a higher potential to grow that occur, for example, when acquiring a company in an emerging market; or due to combination of functional strengths among both companies.

2.3.2.2.2. Financial Synergies

According to Damodaran (2005) these synergies arise when there is an increase in cash flows or a decrease in the discount rate, and it can result from tax benefits that can occur, for example when a company acquires another that is losing money; diversification, although this point does not have much consensus among academics, and the markets seem to not believe in creating value through diversification; higher debt capacity since the cash flows of both companies are not perfectly correlated resulting in a lower risk; or uses of excess cash and this

happens, for example, when a company that does not have investment opportunities and has excess cash purchases another that has many investment opportunities.

2.3.2.2.3. Valuation of Synergies

Damodaran (2005) suggests that synergies should be valued by using the discounted cash flows approach by first valuing both companies and then find the value of synergies by changing different inputs depending from where the synergy to be valued manifests itself. For example, if the company has cost savings the costs account will be smaller and consequently it will result in higher cash flows. However, it is necessary to have some tact to estimate synergies, since there is synergies that can be calculated in a controlled manner as is the case with cost synergies, but on the other hand there are others such as growth synergies, that will put a higher growth rate in calculations and that must be limited to the skepticism of who is calculating it.

- Limitations

The limitation that is most obvious is that it is difficult to estimate the value of synergies that are created with an acquisition. Several values are estimated, which makes the calculation prone to error, and it is also easier to generate synergy theoretically than in practice. Consequently, according to Damodaran (2005) the limitations of the synergies are due to common errors incurred by analysts that are making the valuation such as subsidizing target firm shareholders by offering a premium higher than they deserve since shareholders do not play any role in the value creation resulting from the synergies, and therefore the acquiring company must keep part of that increased value; the use of an incorrect discount rate also results in synergies being miscalculated; another common mistake is to confuse the value of control and the synergies, and the best way to avoid this error is by assess both values separately as mentioned above. Sirower and Sahni (2006) also suggests that synergies are not free and it is necessary to incur in costs to achieve them, and those costs are never considered during the valuation.

2.4. Methods of Payment

After making the valuation of the acquisition becomes necessary to decide how the acquiring company will pay for it. There are two main ways to finance an acquisition, either through a

cash offer or a common stock exchange offer. But these two methods are seen differently by the market due to the existence of asymmetric information, so Sirower and Sahni (2006), Travlos (1987), Loughran and Vijh (1997) and many other authors have conclude that cash deals outperform stock deals.

It is observed that cash offers usually occur in tender offers (Travlos – 1987) and that are less common to occur - on average only represent 12% of all deals (Sirower and Sahni – 2006). The choice for this method of payment is because the acquirer's managers will decide to pay the acquisition in way that results in a higher profitability for its shareholders (Travlos - 1987), so it is expected that they will make cash offers when the stocks are overvalued (Loughran and Vijh - 1997). Moreover, common stock exchange offers usually occur in mergers and, for the same reasons, the managers will choose this method when they believe that stocks are undervalued (Travlos – 1987).

Travlos (1987) suggest that if the market receives a common stock exchange offer to an acquisition as bad news and a cash offer as good news, this will have an impact on the value of the stock of the acquiring company. So, the change in value of the company after the acquisition will not only reflect the creation of value through the acquisition but also the reaction that the market had to the method of payment. Therefore, as the market has a good reaction to cash offers and since the majority of tender offers are financed with cash, this will result in greater gains for acquisitions through tender offers.

Furthermore, these two payment methods have different policies regarding taxes. On the one hand, with a cash offer the company will pay taxes but will also be able to increase the depreciation basis of assets acquired, resulting in a higher acquisition price; on the other hand with a common stock exchange offer the company will not need to pay taxes but the depreciation basis of the new assets will also remain the same. Thus it is not clear whether the benefit resulting from the good reaction of the market to a cash offer will be greater than the extra taxes that will have to be paid (Travlos - 1987).

3. COMPANY AND MARKET ANALYSIS

3.1. M&A in the telecom industry

Mergers and acquisitions deals have always been very significant in the telecommunications industry, and by 2008 this industry was in the midst of a wave of such businesses, since the operators were looking for inorganic growth, but in recent years these operations decreased a lot (Sabbagh, Goussous and Mastoras – 2011). According to Lebraud and Karlströmer (2011), besides the decrease in the number of transactions, is also observed a greater share of transactions in emerging markets. From 2001 to 2006 most of the business occurred in Europe and North America, while from 2007 to 2010 emerging markets began to perform more of this type of business and started to generate roughly half of total activity in value terms (whereas from 2001 to 2006 generated less than a quarter of the total activity).

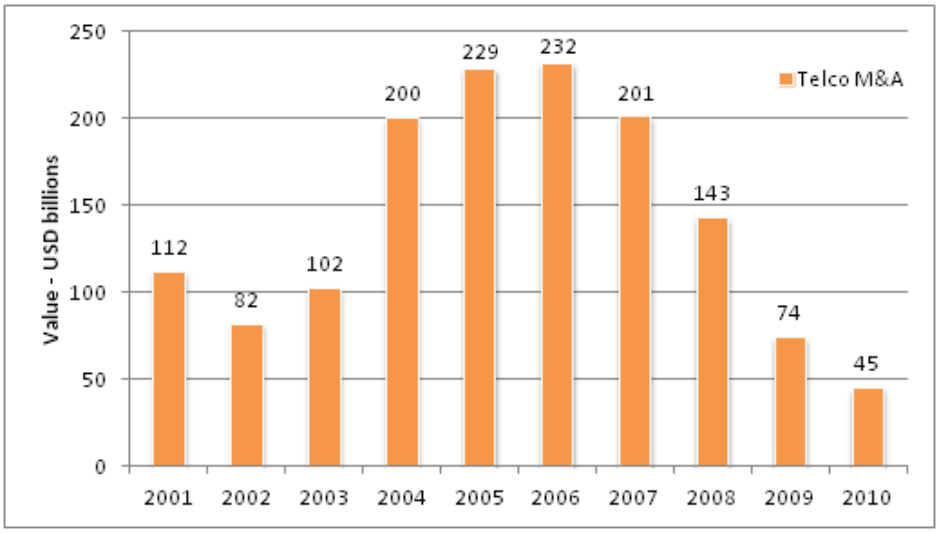

Figure 1: M&A activity in the last 10 years in telecom (SOURCE: Dealogic)

In recent years there have been changes in the nature of transactions in this industry. Firstly, cross-border M&A deals in the core business area[6] have decreased, and a possible factor for this to happen is the slowdown in subscriber growth across the world, so it became less interesting to carry out many cross-border deals. Second, during the past 5 years adjacent[7] segment deals have been increasing in value (and now represent about half of the number of deals made by operators), one possible reason why this could occur is the choice of telcos to

[6] Voice, Broadband, Internet, Network Equipment and Infrastructure.
[7] ICT, Multimedia and Financial Services.

explore growth outside of their core operations. Finally, deals that occur within the same country continue to be higher, both in number and value, than the cross-border M&A, this highlights the value telecom players have on their countries' markets, and also may indicate that managers are taking into account that the home environment is more conducive to capture synergies. (Lebraud and Karlströmer - 2011)

Lebraud and Karlströmer (2011) also believe that there are three key points that will determine the future of mergers and acquisitions deals in the telecommunications industry: if operators are eligible to gain scale benefits and if they can reach those gains in a cross-border basis; the amount of consolidation that regulators will allow within each country; and if the operators will decide to expand into non-core areas.

In the case of Portugal, to study the possibility of a M&A deal, it must be taken into account whether regulators will allow a merger between two major players in the market, and analyse if the current situation of the country together with the little confidence in the markets will allow to proceed with this operation.

3.2. The Portuguese telecoms market

In recent years several sectors have been affected by serious macroeconomic conditions, particularly the European sovereign debt crisis, that has deteriorated over the year 2011 with the worsening situation in Greece. In the specific case of Portugal, due to austerity measures in force, associated with restrictions on access to credit and high unemployment, it is expected a decrease in private consumption in 2012 (Table 3), which makes the macroeconomic environment very challenging and uncertain.

According to Anacom[8], in Portugal the telecommunications sector had revenues of 5.2 billion euros[9] in 2010 (a decrease of 3,2% compared to 2009), representing 4,4% as percentage of GDP (decreased since in 2009 since the total sector revenues as a percentage of GDP was 4.49%).

[8] ANACOM makes the regulation, supervision and representation of the communications sector.
[9] Excluding interconnection revenues between operators.

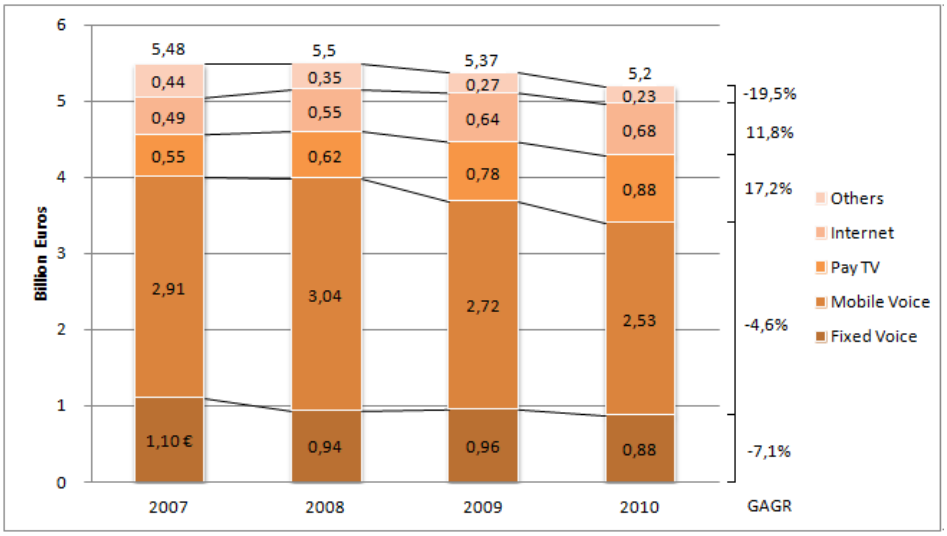

Figure 2: Portuguese Telecommunications Market

The various telecommunications businesses are the fixed voice, mobile voice, pay TV, internet, and others, and within those, mobile voice is the one with higher revenues, followed by fixed voice and pay television. According to the data, in 2010 there was a decrease in voice revenues but the market for pay television and internet increased.

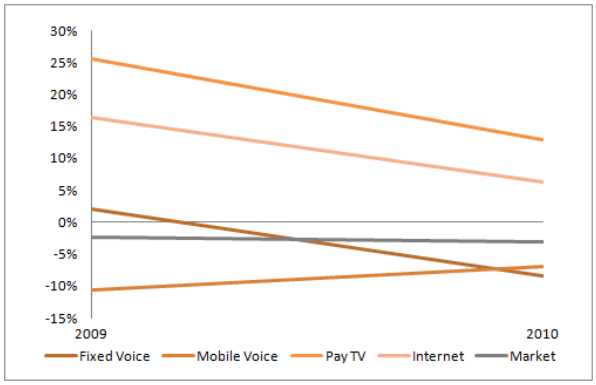

Figure 3: Market Growth Rates (%)

Although this market has shown growth in previous years, 2010 was not favorable for the telecommunications market. However, in order to analyze the market it is necessary to take into account several factors such as the country and its economic climate, growth rate, rate of penetration of services, competition in this market, among others. As mentioned above, Portugal is experiencing a climate of austerity and this may be causing a decrease in private consumption and in 2010 the growth rates of all areas of business telecommunications decreased, but the business of pay television and the Internet continued to grow.

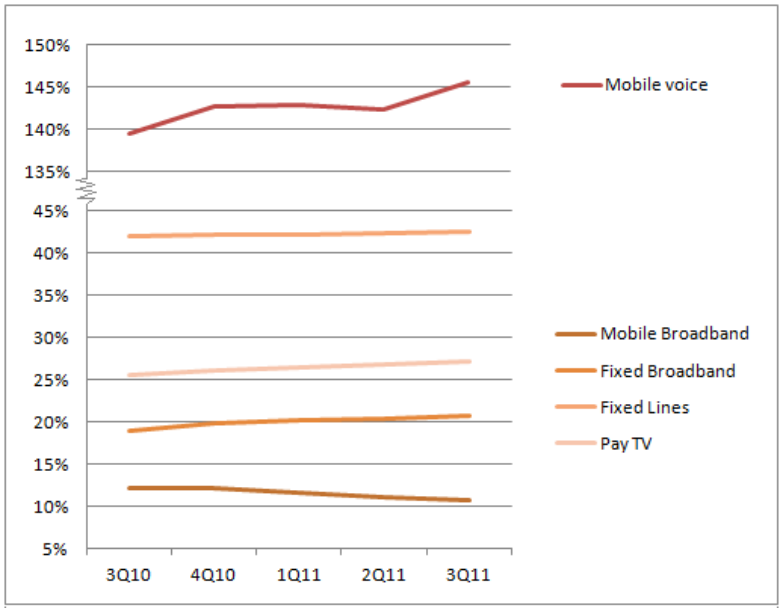

Figure 4: Penetration Rate (%)

The mobile voice showed the greatest increase in penetration rate, reaching more than 15.4 million subscribers, mainly due to the growth of post-paid and pre-paid subscribers. But mobile voice revenues have been declining despite a penetration rate of around 145%. The pay television and internet have been showing revenues growth, and in addition also have a higher penetration rate demonstrating the trend of growth in these markets.

Regarding the evolution of the market share of Portuguese telecommunications operators (number of business customers Voice Mobile, Fixed Voice, Mobile Internet, Internet and Fixed Pay Television), can be seen that only Zon and Vodafone have increased their market shares by 0.4 pp, being the Optimus the company that had a greater loss of market share of 0.5 pp.

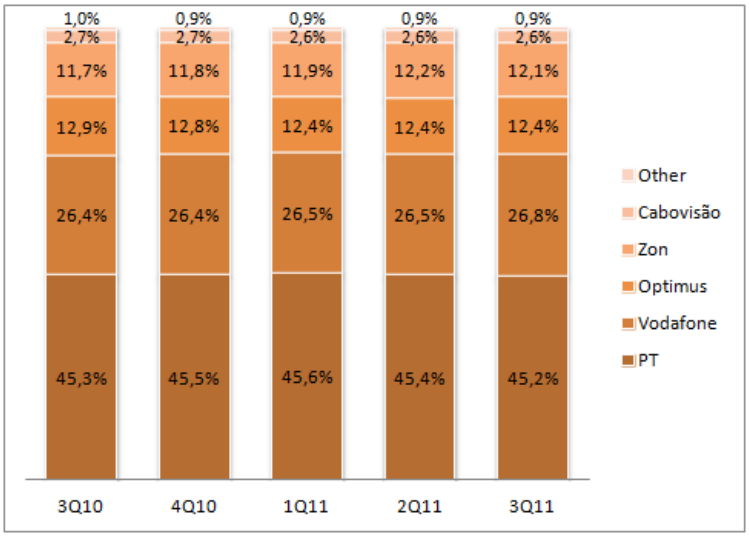

Figure 5: Telecommunications Market Share in Users

And finally, looking more particularly to the companies, at the Figure 6 it is clear that in the last six months the share price of both companies continue to have a negative trend. Therefore, the average price in the last six months of Sonaecom and Zon was 1.23€ and 2.45€ respectively.

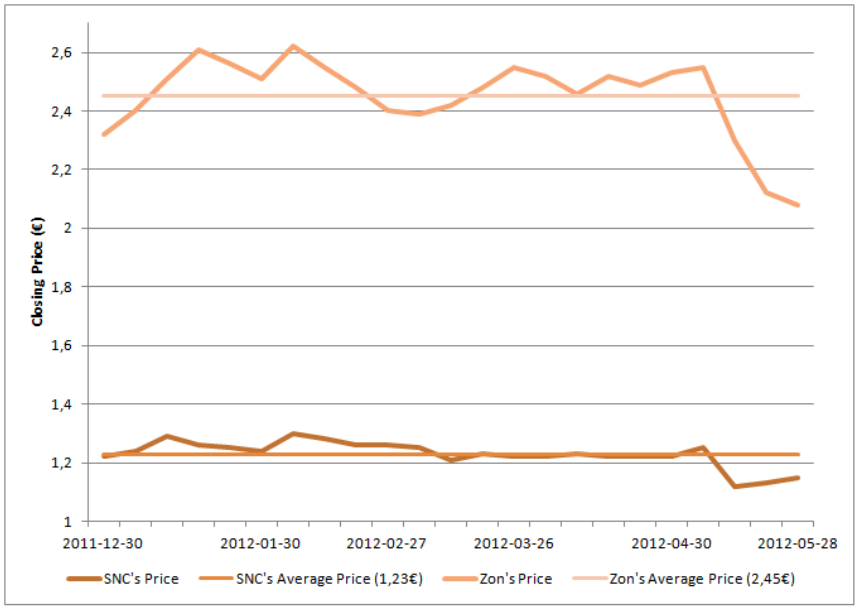

Figure 6: Zon and Sonaecom's Closing Price (last 6 months)

3.3. Sonaecom SGPS, SA

Sonaecom emerged in 1994 and is a Portuguese company that is being transacted in the PSI-20 (Portuguese Stock Index with the twenty largest companies listed in the Lisbon stock exchange). It is a sub-holding of the Sonae Group and operates in three main business areas: Telecommunications, Media and Software and Information Systems. Optimus is the only brand of Sonaecom for the telecommunications sector and covers all market segments - residential, private, mass business, corporate and wholesale. This sector has about 4 million users and offers services for voice, internet, TV and data via mobile or fixed terminals. In the media sector the group has the daily newspaper Público that disseminates information through its various platforms: media, internet and phone. The area of SIS was established in 2002 and includes companies Bizdirect, Mainroad, WeDo and Saphety.

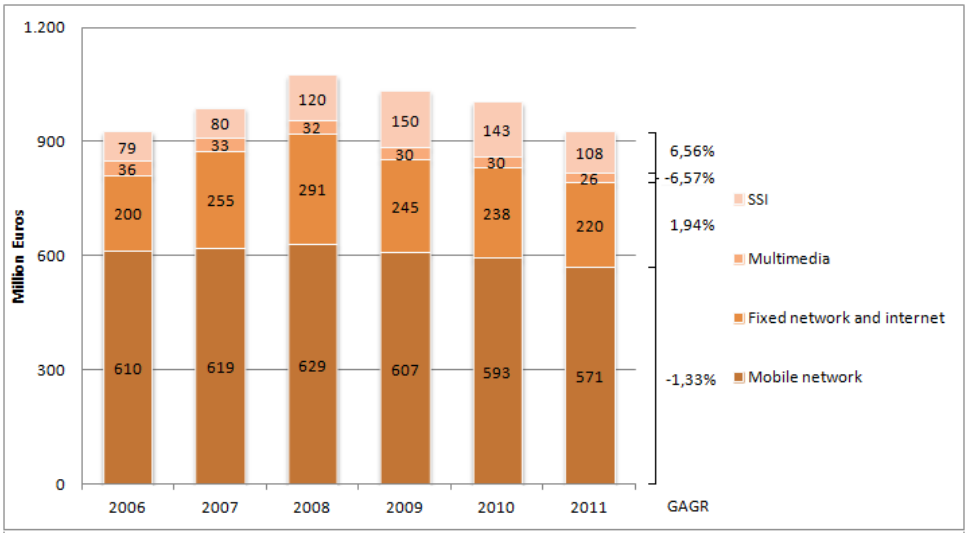

Figure 7: Sonaecom - Breakdown of Revenue

There has been a decrease of sales in both mobile network and fixed network and internet which have greater weight in terms of revenues. The mobile revenues have been declining since 2009, and although the number of customers in this business have increased from 3.6 to 3.64 million (1%), there were negative impacts on key performance indicators (KPIs) such as in the MOU (minutes of usage) and ARPU (average revenue per customer). MOUs decreased 5.8% y.o.y. to 126 minutes per month and mobile customers' ARPU decreased to 12.9 euros (less 0,8 euros than in 2010). The wireline (fixed network and internet) revenues have been declining since 2008, but the company claims that the SMEs and corporate segments have been increasing and that those are a strategic part in this business area. Moreover, both multimedia and SSI also had a decrease in revenues from 2010 to 2011 of 12,5% and 23,9% respectively.

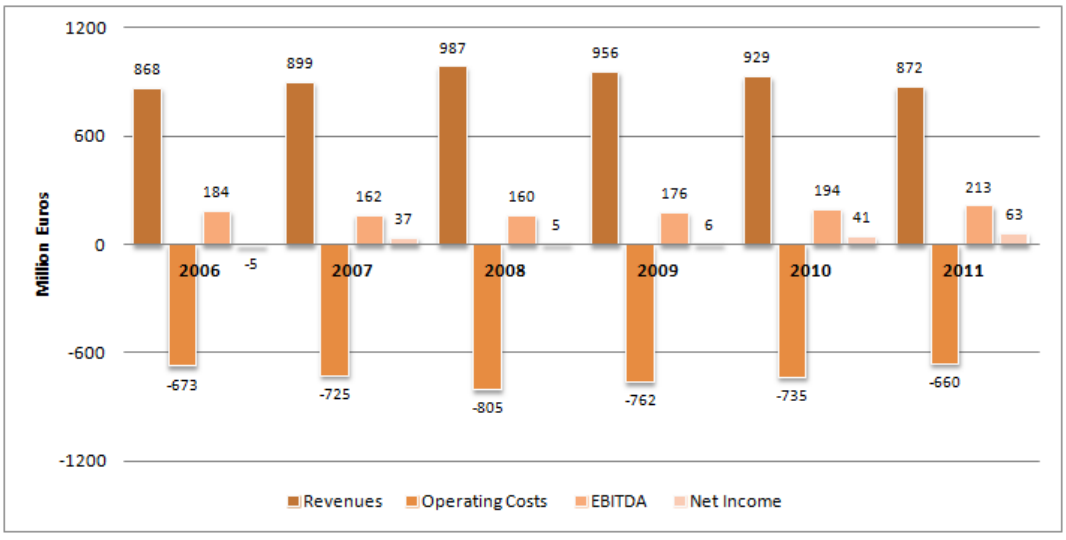

Figure 8: Sonaecom Performance

Although revenues have been declining since the year 2008 to the current years, the rate of decrease of these values is easing. Moreover, the net income has increased considerably since 2008, reaching the 62.5 million in 2011. By analyzing the EBITDA margin is also observed an upward trend, and the EBITDA/revenue rate of 2011(24,4%) is even higher than in 2006 (21,2%), which may indicate that the company is having a better control of operating costs.

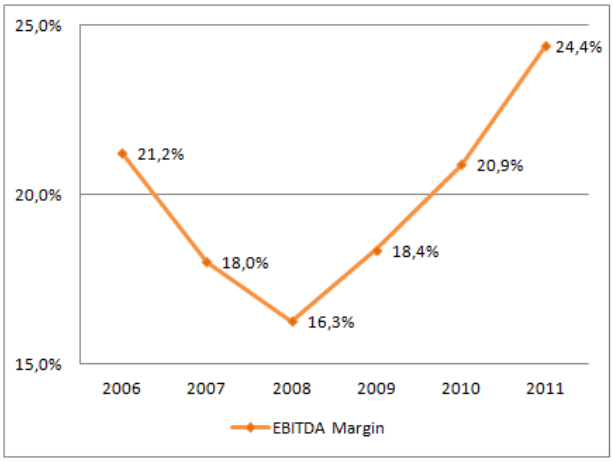

Figure 9: EBITDA/Revenues (%)

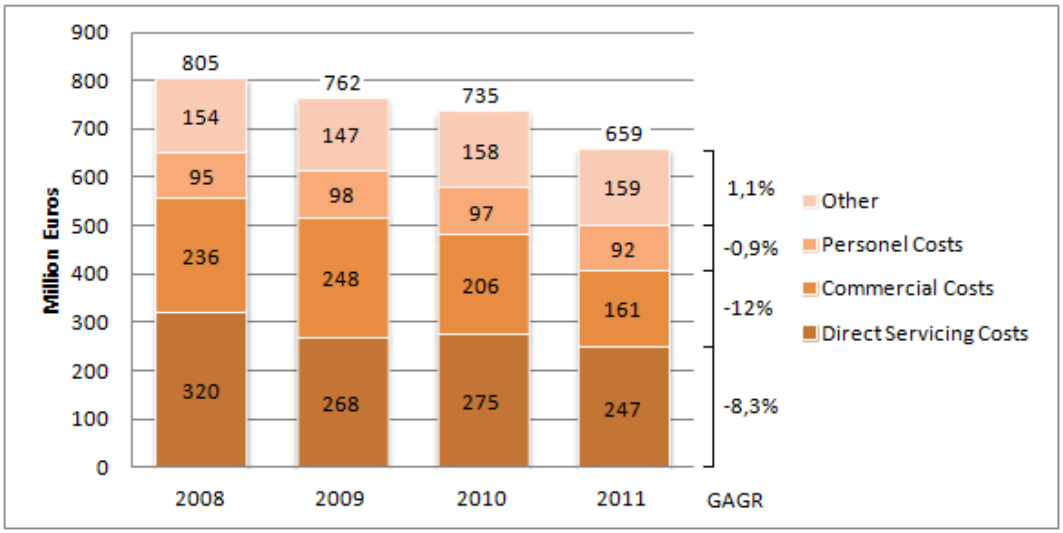

Figure 10: Sonaecom - Operating Costs

Regarding costs, the major one is the direct servicing costs, representing 37% of operating costs, and includes interconnection and content, leased lines and other network operating costs. The commercial costs are biggest costs after the direct servicing costs and include cost of goods supplied (COGS) and marketing and sales costs. The other operating costs account also has a significant weight on the total operational costs and has been increasing its percentage, being 24% in 2011. This item includes outsourcing services, general and administrative costs (G&A), provisions and others. In 2011 operating costs decreased 10.3% to 659.5 million euros. Sonaecom states that the optimization plan implemented in recent years has enabled Optimus to create an organization more efficient, resulting in the generation of positive results in several business areas.

3.3.1. Capital Structure

Sonaecom is listed since 2000 and have a stable shareholder structure. Sonae SGPS is the largest shareholder with a position of 53.17%, followed by France Télécom that holds a 20% stake of Sonaecom. Sonae SGPS is a Portuguese multinational group that has interests in retail, shopping centers and insuranc; and France Telecom is the leading telecommunications company in France and one of the largest telecom operators in the world, developing and commercializing products in the business of fixed line and mobile telephony, Internet, digital television and IT services.

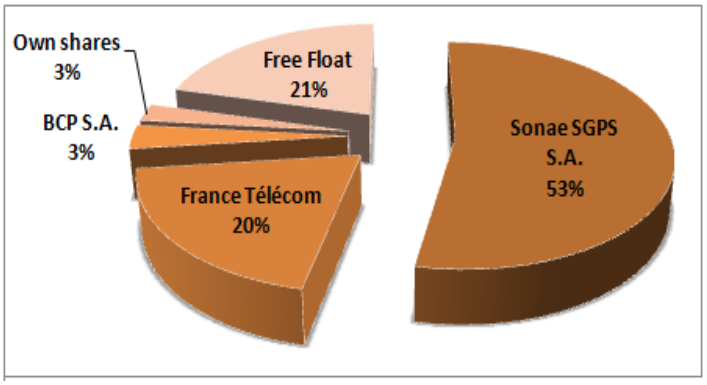

Figure 11: Sonaecom Shareholding Structure

3.3.2. Business Areas

3.3.2.1. Telco Business

- **Mobile**

The Optimus brand was launched in 1998 (after having won the third GSM mobile license in Portugal) and develops mobile communications activities. Later in 2007, the subsidiary that developed the activities of Sonaecom's mobile communications (Optimus) and the former subsidiary of fixed communications services (Novis Telecom, SA) merged, and the new company adopted the name of Sonaecom - Serviços de Comunicações, SA, now known as Optimus - Communications, SA since 2010. So today the Optimus brand covers all activities of telecommunications, with a significant presence in all market segments. Optimus offers a wide range of mobile communications services to both residential and corporate customers, including offers of voice, data, mobile TV and mobile solutions and various roaming services, as well as wholesale services to third parties. Moreover, in 2001 the company created some

shared services between fixed and mobile teams in order to obtain synergies and allowing them to offer a product resulting from this convergence, the Optimus Home.

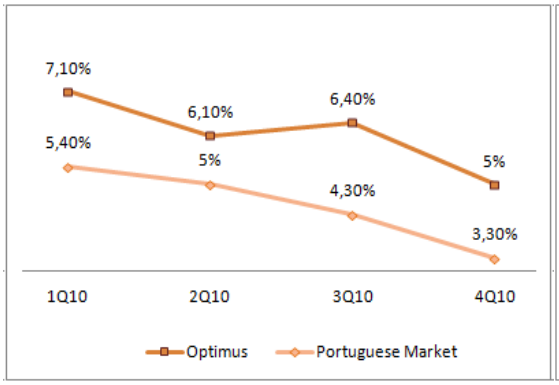

Figure 13: Growth of Mobile Subscribers (y.o.y.)

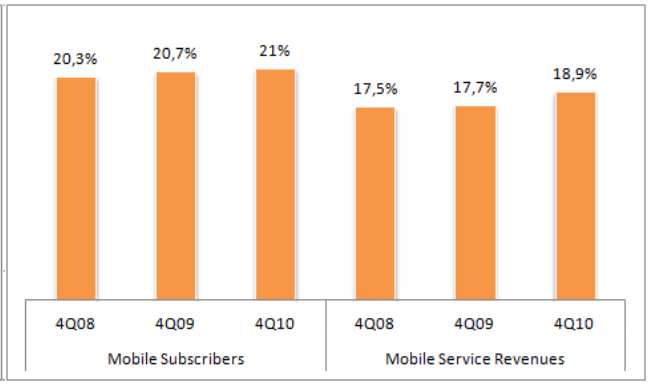

Figure 12: Mobile: Optimus Market Share

Optimus Mobile customer base has been growing above market, ensuring a steady market share growth, allowing Optimus to consolidate its position in the Portuguese market in 2011 with 3.64 million customers and a market share of about 21%.

Table 1: Sonaecom's Operational KPIs from Mobile Segment

	2008	2009	2010	2011	GAGR
Customers (EOP) ('000)	3191,6	3432,57	3604,1	3639,37	4,5%
Net additions ('000)	298,1	241	171,5	35,3	-50,9%
MOU[10] (min)	128,4	132,4	133,9	126,1	-0,6%
ARPU[11] (euros)	16,8	14,8	13,7	12,9	-8,4%
ARPM[12] (euros)	0,13	0,11	0,1	0,1	-8,4%
EBITDA margin	22,6%	27,5%	31,3%	35%	15,7%
Operating CAPEX as % of turnover	23,1%	13,6%	14,2%	16%	-11,5%

Despite the growth of mobile customers, revenues have been declining since 2008, as many KPIs, such as minutes of use per customer per month (MOU), average monthly revenue per user (ARPU) and average revenue per minute (ARPM). This may happen because the attempt to acquire new customers is often based in lowering prices, such as the TAG promotion which

[10] Minutes of use per customer per month.
[11] Average monthly revenue per user.
[12] Average revenue per minute.

is targeted to young people and enables subscribers to conduct free communications between the clients of this package. But in this market the mere fact of offering the lowest prices and the more appealing packages does not automatically result in new customers, since the decision about which operator to use is very dependent on the client's group of friends and their operators. This happens because the communications between clients with the same mobile service is cheaper and so individuals will choose the mobile operator that offers the lowest prices in order to communicate with their networking. Finally, it should be noted that the EBITDA margin has improved which can result from better control costs, creation of operational synergies, among others.

- **Wireline**

Wireline activities were carried out after the liberalization of the Portuguese fixed communications market in 2000, and the subsidiary Novis Telecom, SA, developed the activities in this segment until 2007, when it was merged and incorporated the Optimus Telecommunications SA. Also in 2007 the fixed communications services were strengthened with the acquisition of Tele2 Portugal and a former competitor's residential and small office-home office (SOHO) customer base. Sonaecom is present in the residential market and the business market, offering services of voice, data and television.

The Corporate and SMEs segment increase its presence in the market by having more 7 thousand accesses (a growth of 4,7% between 2010 and 2011). However, the number of total accesses decreased 9.9% y.o.y. to 376 thousand accesses, mainly because of the residential segment.

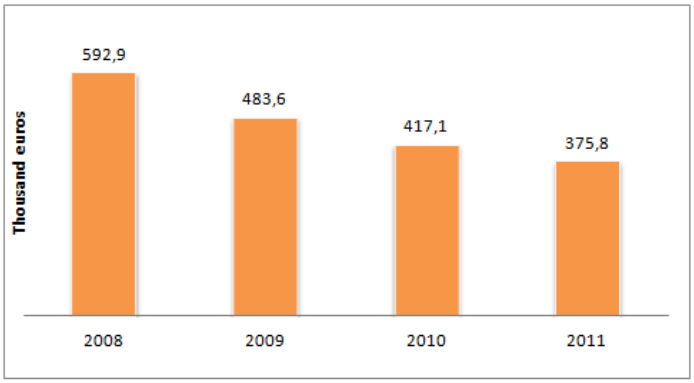

Figure 14: Wireline: Total Accesses (EOP)

3.3.2.2. SSI Business

The division of SSI was established in 2002 and currently includes four companies:

- WeDo Technologies - Provider of business assurance solutions, focusing its activity on the optimization of systems and processes of performance and risk management. With

the acquisition of Cape Technologies Limited, since 2007 has become a world leader in the software market integrated of revenue assurance.

- Bizdirect - It is a leading reference in the commercialization of multi-brand IT solutions, supported by partnerships with leading manufacturers in the market, and in the management of corporate contracts for software licenses, based on new business models.
- Mainroad - It is a leading company in information technologies, providing services and solutions for IT managed services, IT security, business continuity and ITIL consulting, backed in its data centre.
- Saphety - It was created in 2006 from the operations of fixed telecommunications, is a provider of certification services, electronic billing and security in B2B transactions. A decision was made to integrate the previous drive B2B Bizdirect in Saphety in late 2008, a restructuring designed to capitalize on the synergies between the two companies.

The SSI subsidiaries' revenues have been increasing not only to organic growth, but also to mergers and acquisitions at WeDo Technologies. In 2011 there was a drop of 51,5% in equipment sales (impacted by the end of e-initiatives program), but there was an increase in service revenues of 4.7% y.o.y.. However, from 2010 to 2011 the number of total SSI revenues decreased 23.9% y.o.y. to 108,5 million euros.

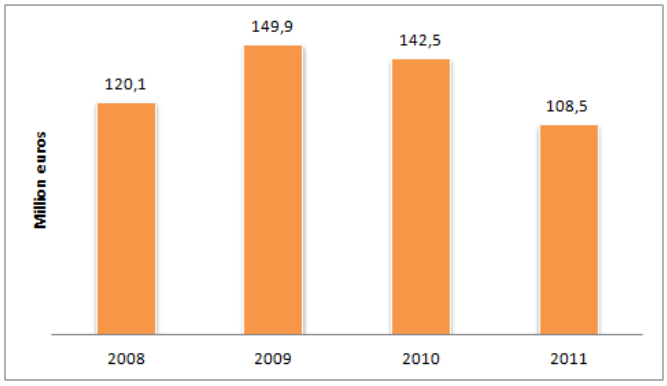

Figure 15: SSI Total Revenues

3.3.2.3. Online & Media

This segment includes a range of businesses like Miau.pt and Público, the latter is a newspaper of reference in Portugal, which has completed 22 years of existence, and the Publico.pt is currently the leader in digital media sector in Portugal, being online since 1995.

Service revenues were 3.9 million euros in 2011 and are mainly related to management services provided to subsidiaries. In 2010 the same account had a value of 6.3 million since it has included: management of the regulatory framework; support in the search for new

financing, internal audit and risk management, legal and tax support, and allocation of temporary employees to subsidiaries.

3.4. ZON Multimédia SGPS, SA

ZON Multimedia is a business group that is present in the main national stock index, the PSI-20. In 2006 Sonaecom launched a bid to the capital of Portugal Telecom and PT Multimedia, beginning at that time the split (spin-off) between PT Comunicações and PT Multimedia. Then in 2008, after the separation of TV Cabo and its incumbent operator, ZON Multimedia emerges as an independent brand. Nowadays the company leads the market for pay TV in Portugal and is the second largest internet provider. Nationally, it is also a leader in cinema market. Its main services are cable TV, internet, distribution of audiovisual content, film and telecommunications. The ZON brand is applied to all its services, being named as ZON Lusomundo (film and audiovisual), ZON Netcabo (internet), ZON TV Cabo (television), ZON Phone (landline), ZON contents (content distribution) and ZON mobile (mobile).

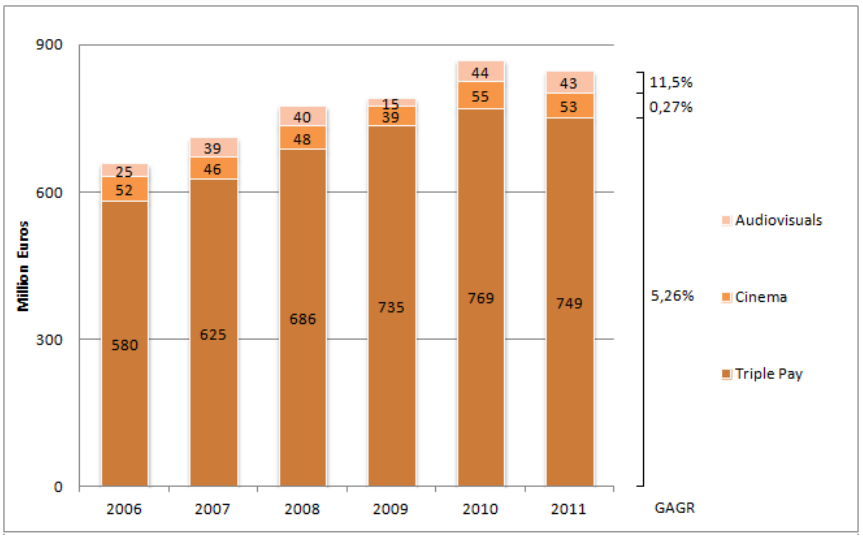

Figure 16: Zon - Breakdown of Revenue

Revenues from pay TV, broadband and voice recorded an annual decrease of 2.6% (2010 to 2011) to 749.2 million euros. In the main business of ZON there was a decrease in the last quarter of 2011 (over the last quarter of 2010) on revenue of Premium subscribers. But Zon states that Triple Play services have proved resilient to the challenging economic environment. Cinema revenues decreased 3.6% in 2011 to 52.6 million euros due to falling revenues not related to the sale of tickets. The revenues of the audiovisual division grew 9,2% from the third to the fourth quarter, driven by an improvement in revenues from film distribution, and joint

venture Dreamia. But DVD sales continue to show a negative trend, thus diluting the positive performance of this business unit, and in relation to the year 2010 revenues from audiovisual decreased 1.6%.

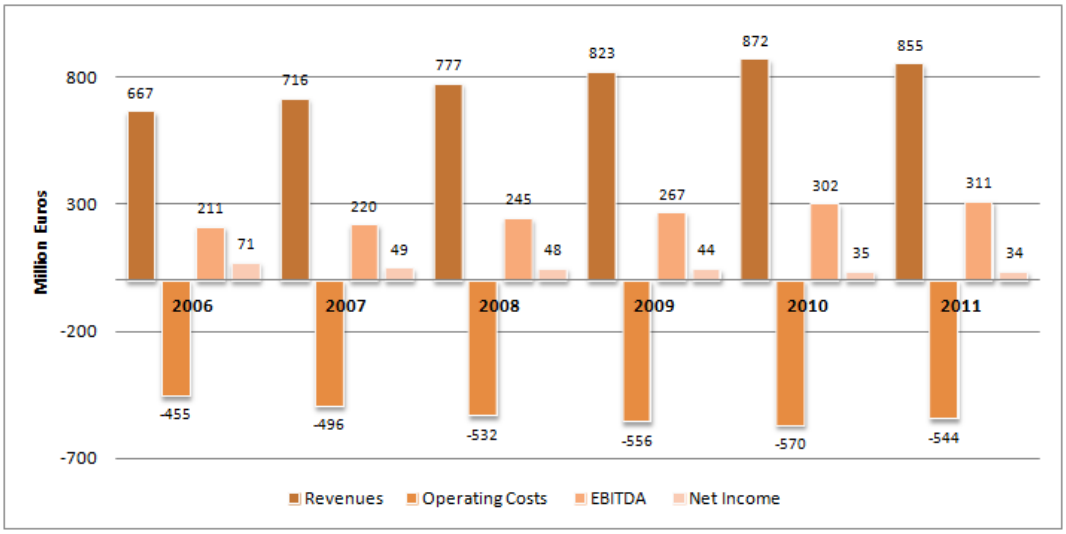

Figure 17: Zon Performance

Zon's EBITDA had a continuous growth over the last few years, even though revenues in 2011 have suffered a decrease of 2.01%. But the net income has been declining since 2008, which is not related to operational costs. From 2008 to 2009, the net income declined from 48 million to 44 million euros, despite the increase in revenues, so this decline was due to increased depreciation by 34.4%. In 2011, although revenues have risen 2.9% the net income declined by 3.4%, having a value of 34 million euros. This decrease was due to increased income taxes, which in 2010 were approximately 20% of EBIT, moving in 2011 to be approximately 30% of EBIT.

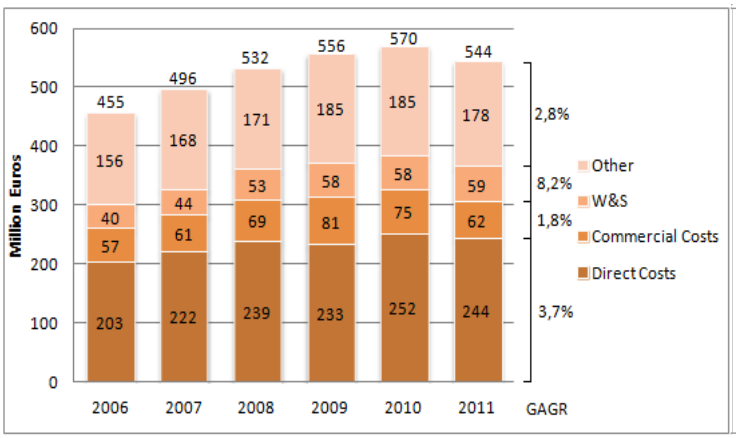

Figure 19: Zon Operating Costs

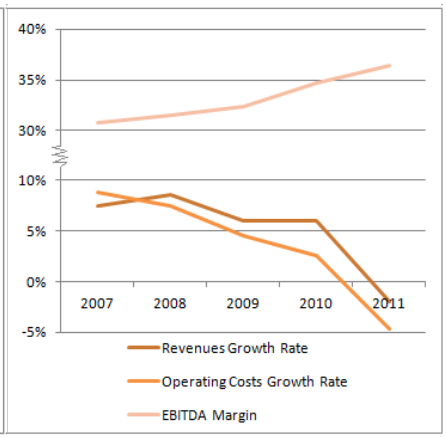

Figure 18: Growth rates and EBITDA/Revenues

Regarding costs, the major one is the direct costs, representing 45% of operating costs, and includes programming and exhibition costs (being the most significant), telecommunications costs, advertising shared revenues and others. The commercial costs are biggest costs after the direct costs and include commissions, marketing and publicity expenses and costs of equipment sold. These costs have been decreasing as a result of a more efficient use of available sales channels and because there is a less aggressive competitive and promotional environment. The growth rate of revenues has remained higher than the growth rate of operating costs, which means that besides the company is being able to continue to have a good level of revenues, is also able to control costs more effectively, increasing the EBITDA margin.

3.4.1. Capital Structure

The ownership structure of Zon Multimédia is widespread, and CGD is the main shareholder holding 11% of the shares. In addition, Kento Holding Limited also owns 10%, being the second largest shareholder. The latter came into the ownership structure of Zon just a few years ago and allowed to strengthen the partnership with Angola. Thus, a large percentage of Zon belongs to a wide number of shareholders, ie, over 33% of the company belongs to shareholders who hold less than 2% of capital each.

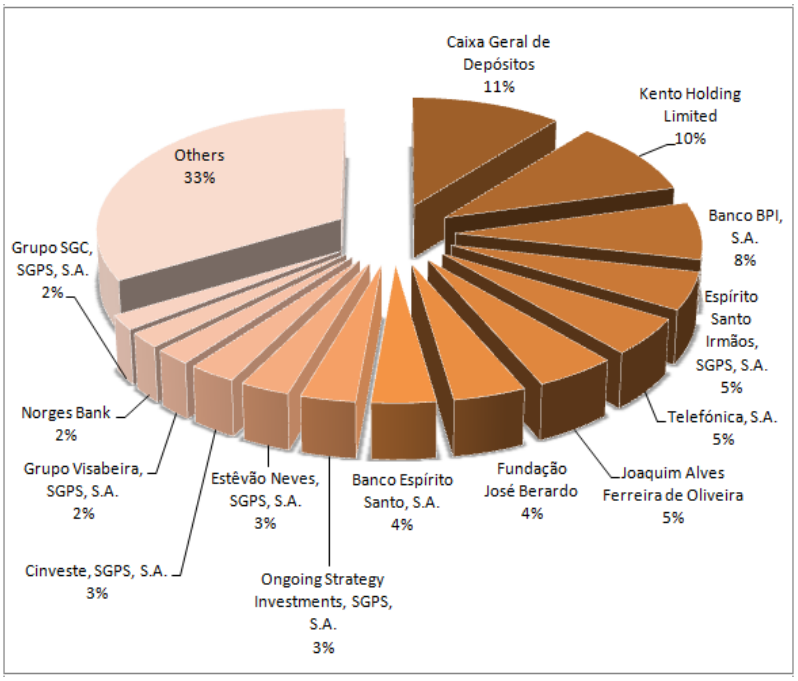

Figure 20: Zon Shareholding Structure

3.4.2. Business Areas

3.4.2.1. Triple Pay

The performance of core services of Triple Play has improved due to the resistance that the communications and entertainment services are having in this challenging economic environment. Although consumers are being more cautious in their consumption and in some cases altering their service packages for less expensive ones, this effect has been offset by the exchange of packages in the opposite direction from other consumer groups, which adhere to next generation TV services that are more sophisticated. An example is the IRIS by ZON Fibra that it's a new generation multi-screen TV offer, that Zon lauched in January 2011. In addition, there is a new group of customers that are joining the Pay-TV market, driven by the shutdown of the analog signal that recently took place in Portugal. Revenues from triple play services have shown resilience despite some dilution of ARPUs due to adherence to pay TV services and service packages for the lowest range, for customers affected by the aforementioned shutdown of the analog signal.

Table 2: Zon's Operational KPIs from Triple Pay Segment

	2008	2009	2010	2011	GAGR
RGUs[13]	2982,2	3506,5	3147,4	3315,1	3,6%
Basic Subscribers	1613,5	1594,8	1571,6	1567,1	-1,0%
Triple Play Customers	275,4	484,4	642,3	708,7	37,0%
Broadband Subscribers	519	610,7	690,2	739,2	12,5%
Fixed Voice Subscribers	346,6	584,1	777,6	883,9	36,6%
Mobile Subscribers	7,2	68,9	107,9	125	158,9%
Blended ARPU (euros)	32	33,8	35,4	35,7	3,7%

The number of customers of Triple Play services in late 2011 was 708,700, and according to Zon this represents a penetration rate of 60.1% of the customer base of cable, an increase of 5 percentage points compared to 2010. There was also an increase in the number of pay TV subscribers, an increase to 1,567,100 customers. ARPU in 2011 also recorded an annual increase of 0.8%, and Zon says that this is supported by a solid performance in packages of

[13] Total RGUs reported reflect the sum of Pay TV, Broadband, Fixed Voice and Mobile subscribers.

multiple services as well as a more stable environment with regard to pricing. However, this increased level of basis ARPU was diluted by a decrease of 11.0% ARPU Premium.

3.4.2.2. Cinema and Audiovisuals

The film market in Portugal over the past five years had an average of 16 million tickets sold each year and is already a mature market. The business model is based on incorporating cinema complexes in shopping malls. All of its cinema complexes allow receiving and performing live shows in 2 or 3D and digital. This year the company began the process of receiving content (movies) via satellite, allowing an optimization of the logistics process and costs reductions.

According to ICA (Portuguese Institute for Cinema and Audiovisual), the film market in 2011 decreased approximately 867 000 tickets sold compared to 2010, representing a decrease of 5.2%, and ZON Lusomundo Cinemas decreased by 3.9%, being a lower decrease than the market. ZON Lusomundo Cinemas won in 2011, 0.8 pp market share in terms of number of tickets sold, and now holds 55.7% compared with 54.9% for the year 2010.

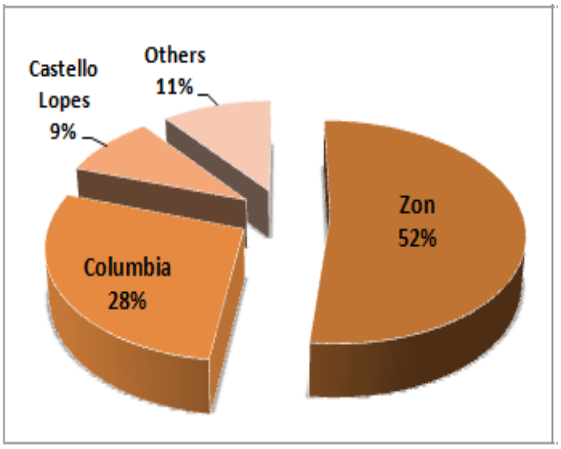

Figure 21: Market Share of Cinema Distribution Revenues - 2011 (%)

Regarding audiovisuals the year 2011 was marked by a decrease in the market for distribution of cinema in Portugal. Gross revenue from ticket sales was 79.9 million euros, 2.9% less than in 2010. Nevertheless, ZON Lusomundo Audiovisual kept the lead, registering a market share of 51.7% of spectators and 52.0% in revenue. In the business of management rights, the Audiovisual ZON Lusomundo began in 2011 the sale of TV content for Angola and Mozambique that is experiencing a strong evolution in the field of digitization.

ZAP is currently operating in the markets of Angola and Mozambique since 2010, being a joint venture owned 30% by ZON and 70% by SOCIP - Sociedade de Investimentos e Participacoes SA an Angolan society. ZAP operates in pay television markets in Angola and Mozambique, and in 2011 these markets had a strong economic growth, reflected in the development of a middle class with purchasing power and appetite for the consumption of pay-TV services.

According to the latest estimates of the IMF (September 2011), in 2011 the real GDP for Angola and Mozambique has grown 3.7% and 7.1%, respectively.

4. STANDALONE VALUATIONS

In order to analyze the possibility of a M&A among the companies studied, it was perform a valuation of the companies and synergies resulting from the operation. Thus, as mentioned in the literature review, it was necessary to compute the value of both companies separately and the value of synergies that will occur after the merger, and to do so various methods were used (WACC, APV and Multiples) in order to the valuation be as complete as possible.

Throughout the calculations was taken into account information provided by both companies, and in addition to data from financial statements were also used growth objectives and strategies of Sonaecom and ZON. Furthermore, in order to estimate the growth that companies would have in the future were also considered analyzes made by the Portuguese government and published in the Country Strategy Paper 2012-2016, ANACOM data on the telecommunications industry, Damodaran website, among other sources.

4.1. Analysis of the Economic Environment in Portugal

The telecommunications sector in Portugal has suffered from the economic crisis, as has the country. Moreover, since it is an industry with similar performance to the market it becomes important to study the future prospects of the crisis that is happening in Portugal, in order to gain a perspective on the future of this segment. Thus, it is essential to analyze the development that the GDP is expected to have in coming years on the point of view of the Portuguese Government.

According to the Country Strategy Paper 2012-2016 (Documento de Estratégia Orçamental[14]), it is expected a real GDP contraction of 3.0% for 2012. This performance is associated with a sharp reduction in the private and public consumption and investment, being offset by the positive contribution of external demand. In 2013, economic activity will register a positive growth of 0.6%. In subsequent years it is expected a continued expansion of economic activity associated with the gradual recovery of domestic demand and a continued good performance of exports. Economic activity should accelerate gradually until 2016, the year in which the product must be equal to potential output.

[14] Document released on April 30, 2012.

Table 3: Portugal's GDP

	2012	2013	2014	2015	2016
GDP	-3,0	0,6	2,0	2,4	2,8
Private consumption	-6,3	-0,7	0,5	1,0	1,4
Public consumption	-3,2	-2,9	-2,6	-2,0	-1,6
Inflation	3,2	1,3	1,1	1,2	1,2

SOURCE: Ministry of Finance - DEO

In addition to the contraction in GDP companies also have problems like the fact that financing is difficult, and only large bodies like the European Union finance the country; and high unemployment that the European Commission expected to reach 15.5 per percent of the population in 2012 and decline only to 15.1 percent in 2013[15].

4.2. Sonaecom's Standalone Valuation

4.2.1. Cost of Capital

In order to compute the value of the company through discounted cash flow methods it is necessary to estimate the discount rates, and those will vary according to the methodology to be used. As stated before in the literature review, to calculate the firm valuation is necessary to discount the free cash flows to the firm at the weighted average cost of capital, therefore it is required to know the company's financial structure, the cost of debt and the levered cost of equity. On the other hand, the free cash flows to the firm will be discounted at the unlevered cost of equity to determine the unlevered firm valuation.

4.2.1.1. Financial Structure

In recent years the Debt / Value[16] ratio has increased and ranged between 16% and 38% between 2009 and 2011. However, the value of net debt[17] remained similar over the years, and therefore variations were mainly due to fluctuations in market capitalization. Thus, it was estimated that by 2013 the company will have a net debt of 269 million euros, and from 2016 the net debt will remain stable (see Appendix 4).

[15] http://www.rtp.pt/noticias/index.php?article=552698&tm=6&layout=121&visual=49
[16] Net Debt / (Net Debt + Market Capitalization)
[17] Net Debt = Short-Term Debt + Long-Term Debt – Cash and Equivalents

4.2.1.2. Cost of Debt

According to Damodaran (2002), in order to calculate the cost of debt is necessary to estimate and add both the risk-free rate and the default-risk of the company.

- The risk free rate that was used was the same as the yield on the Portuguese 10-year government bonds, and because that yield had significant changes in recent years, it was used the average of the last three years, from May 2009 until May 2012 (See Appendix 1Appendix **1**: Portuguese Government Bonds 10 Yr), which is 7,564%.
- Regarding the default risk of the company, was considered that Sonaecom has the same rating as Portugal, since a company cannot have a rating higher than the rating of the country where it operates. Thus, the Moody's rating for Portugal is Ba2, and therefore the spread will be 4,75% (See Appendix 2).
- Adding the two values was obtained a cost of debt of 12.31%.

4.2.1.3. Cost of Equity

The cost of equity will be determined by the estimation of the appropriate risk-free rate, risk premium, and lastly the equity risk premium will be adjusted for the particular risk of the firm (Booth - 1999). Thus, according to the capital asset price model the cost of equity can be calculated by using the next formula:

$$k_j = r_F + \beta_j * (E(r_e) - r_f)$$

- The risk free rate that was used to calculate the cost of debt was the same as the yield on the Portuguese 10-year government bonds, since the investors set is Portuguese. Regarding the cost of equity, as the company is held predominantly by Portuguese investors, it was used the same risk free rate than previously, which is 7.564%.
- As suggested by Damodaran, the risk premium was estimated by adding the adjusted country risk premium default spread with the historical risk premium for a mature equity market. The adjusted country risk premium was estimated by multiplying the default spread according to the specific Portugal rating by 1.5[18] (1.5*0.0275 = 4.125%), and according to Damodaran the current risk premium for a mature equity market is 6%. Thus, the total risk premium for Portugal is 10.125% (See Appendix 3Appendix 3: Estimation of Risk Premium).

[18] Average of equity to bond market volatility (Source: Damodaran website).

- According to Damodaran's website, Sonaecom belongs to the telecom (Wireless) industry, and the unlevered beta corresponding to this industry is 0.70.

Therefore, using the formula above with the unlevered beta, the unlevered cost of equity calculated is 14.61%. Furthermore, in order to calculate the levered cost of equity is necessary to use the levered beta, and to calculate that beta it was taken into account the company's D/E and the corporate tax rate, according to the following formula:

$$\beta_{\text{levered}} = \beta_{\text{unlevered}} * [1 + (1 - t)\frac{D}{E}]$$

- In Portugal the standard corporate tax is 25% currently, which is added a rate of 1.5% relative to the municipal tax and also a rate of 2.5% for incomes over 2 million. In total, the corporate tax rate is 29%[19].

The levered beta will vary due to changes in D/V ratio, and since 2016 is 0.95. Thus, the levered cost of equity calculated is 17.17% since 2016. Lastly, it was calculated the weighted average cost of capital according to the formula referred in the literature review and the results where:

	2012	2013	2014	2015	2016
WACC	14,28%	14,29%	14,30%	14,31%	14,31%

See Appendix 4 for all the calculations of the cost of capital.

4.2.3. Free Cash Flow to the Firm[20]

In order to calculate the FCFF it is necessary to estimate several values such as EBIT (which is calculated by subtracting a company's operating costs, depreciation and amortization from its revenues), taxes, capital expenditures, changes in working capital, depreciation and amortization. Thus, in the next points will be analyzed the revenues and costs of various segments of the company for the calculation of EBIT, as well as the depreciation, capex, working capital and taxes. The tax rate used was the marginal tax rate on profits, and corresponds to the corporate income tax rate (IRC) of the Portuguese Republic (25%), plus the rate of "derrama" (1.5%). So, the cash flows were estimated until 2016 since the crisis is expected to be overcome that year, and from 2016 the terminal growth rate will be 2.97%[21],

[19] http://www.worldwide-tax.com/portugal/portugal_tax.asp
[20] See Appendix 5 for the forecast of the FCFF.
[21] International Monetary Fund, World Economic Outlook Database, April 2012 - (http://www.imf.org)

representing the sum of real growth of the Portuguese market (1.5%) and the expected inflation rate (1.47%) after 2017.

4.2.3.1. Mobile[22]

4.2.3.1.1. Revenues

The population of Portugal, according to the census of 2011 showed a growth of 0.19% per year between 2001 and 2011. Thus, in estimating the evolution of the Portuguese population was assumed the same annual growth, and although the market is saturated, the company does very appealing promotional campaigns and so it was assumed that Sonaecom's market share will be 23.35%, and then it will remain stable. Thereafter, to estimate the evolution of Sonaecom's customers it is necessary to estimate the behavior of the total number of mobile clients by knowing the value of the penetration rate, and this rate in the mobile segment has high values since it is greater than 100%, indicating that on average each individual is client of more than one mobile service. Moreover, although the value of this rate in Portugal is higher than the EU (25) average penetration rate, it is still expected that will increase a little longer primarily due to the large deals that exist within the same carrier, which means that customers easily adhere to more than one service. As a result, it was estimated that the penetration rate will increase at the same rate as the CAGR (2009-2011) of 2.15% until 2016 and then it will remain stable at 175.7% from 2017.

The average monthly revenue per user (ARPU) decreased from 2009 to 2011 (CAGR of -6.95%), and this decrease is due to the fact that there is a strong competition in this market, coupled with the fact that a recession is taking place in the country. Thus, the competitors are doing price wars to capture and retain customers, and in addition consumers also tend to decrease spending on mobile services (being in line with expectations of a decrease in private consumption – see Table 3). Due to these factors was estimated that the average monthly revenue per user will continue to decline at a nominal rate of 6% until 2013, and it will stabilize thereafter, being with a value of 11.5€.

[22] See Appendix 6 for the forecast of the mobile segment.

4.2.3.1.2. Costs

The company aims to create a leaner organization and become more efficient. Since 2006 there has been a decrease in the total operational costs (CAGR from 2006 to 2011 of -3,25%), with the most significant reductions in direct servicing costs and commercial costs, and as the reduction of the costs in percentage was higher than the reduction of the turnover in percentage, the company has been able to become more efficient. Last year the largest decrease occurred in the direct servicing costs account (-23.3% y.o.y.) and was due to a lower level of leased lines and network-related costs since Optimus is reducing its dependency on third parties infrastructure. A representation of the fact that the company is becoming more efficient was a CAGR of -8% from 2009 to 2011 in total operating costs, moreover the EBITDA margin was 27.7% in 2006 and in 2011 was 34.96%, a CAGR of 4.78%. Once the company has been able to meet its objectives for cost reduction and margin improvement, it was estimated that the company will be able to increase its EBIDTA margin until 2013 at the same rate as the CAGR of this ratio from 2009 to 2011 (12.8%), and from 2014 the margin will remain stable at 44.5%.

4.2.3.2. Fixed[23]

4.2.3.2.1. Revenues

The penetration rate of this segment has decreased over the last years and according to ANACOM the CAGR between 2002 and 2009 was -0.8%. Additionally, the number of total accesses is expected to reduce because the residential segment (Optimus Home) has been decreasing. Thus, it was estimated that the penetration rate will decrease until 2014 at the same rate, stabilizing after 2015 at 38.2%. This lowering in the penetration rate is happening mainly because the increased penetration of bundle offers, with which the Sonaecom cannot compete since they do not have competitive triple-pay offers. Furthermore, being this a mature market the company decided to abandon the residential customer acquisition through the incumbent's infrastructure. However, the company is being able to grow in the corporate and SMEs segment by capitalizing on demand for integrated and convergent solutions. Thus, because of all the above it is expected that there will be a decrease in Sonaecom's market share, but since that in recent years there has been a very sharp decline in market share, it will

[23] See **Appendix 7** for the forecast of the fixed segment.

be estimated that there will be a lower annual decrease in the next 3 years. In the calculations it was estimated a decrease in the market share equal to that which occurred between 2010 and 2011 (-8,48%), and finally it was considered that it would hold steady from 2015.

To calculate the average revenue per access the total fixed revenue was divided by the total number of Sonaecom accesses. This figure grew in recent years (2008-2011 CAGR of 6.08%), but the company cannot enter in price wars with bundle offers. Moreover, the Optimus Home, although it is a market with a declining trend, shows a strategy to maximize profits by maintaining a simple and competitive position and by ensuring cost reduction (although the last one does not affect revenues). Thus, it is expected that the average revenue per access remains stable.

4.2.3.2.2. Costs

From 2010 to 2011 the commercial costs account decreased 26.7% due to decreased marketing and sales costs since the company decided to abandon the residential customer acquisition through the incumbent's infrastructure, as stated previously. However, to take a broader view of the effect of costs on the results, it is important to analyze the evolution of the EBITDA margin. Although this ratio has increased in 2011 compared to the year 2007, do not have stable values over the years. Nevertheless, because this market is already saturated and have a very low growth potential, no significant changes are expected in this margin. Thus, it was estimated that the operating costs will vary at the same rate as sales, so the margin will remain the same, since in the last year has presented a significant growth and it is not expected improvements in the future.

4.2.3.3. SSI

There was a 51.5% decrease in sales of equipment due to the end of the e-initiatives programme, which resulted in declining sales of Bizdirect laptops. However, service revenues continue to grow, and therefore a decrease of 23.9% of revenues from 2010 to 2011 was solely due to the decline in equipment sales. However, the company has a strategy of internationalization and argues that the turnover from international markets will increase

significantly[24]. Thus, it can be estimated that the turnover will maintain approximately the same CAGR that have been taking since 2006 (10.8%), since this segment has great potential for growth. To allow the company to expand this segment and harness its potential, the company will expand its portfolio of customers and invest in internationalization. Thus, it was estimated that this segment will have a CAGR of 10,8% until 2014 in turnover, and from 2015 will show the terminal growth rate of 2.97%.

In this segment the EBITDA margin has been increasing, with a CAGR between 2006 and 2011 of 3.1%. Thus, it was estimated that by 2017 this ratio will have an annual growth of 4%, and from 2017 the EBITDA margin will stabilize.

4.2.3.4. Media

In recent years the media segment revenues have been decreasing. This is due to a strong competition in this area, owing to various newspapers, magazines, television news channels, and in recent years have emerged several free newspapers which reduced the consumption of paid newspapers. In addition to these factors affecting the demand for newspapers, with the economic context firms have more financial difficulties and that result in a decrease in demand by companies for advertising in newspapers and websites. Regarding multimedia costs, it appears that there was a decrease in costs greater than the decline in revenues, while the CAGR (2006-2011) of revenues was -6.6%, the CAGR (2006-2011) of costs was -8.5%. Thus, if this trend continues it will be possible for the company to get a positive EBITDA from this segment. Thus, to estimate the evolution of revenues it was taken into account that the private consumption will continue to decrease until 2013 (so revenues will decrease 3% per year), undergoing a period of growth to recover the decrease occurred in recent years derived from the crisis until 2016 (CAGR of 5%). It was also estimated that the costs will continue to decline at the same rate of 9% until 2013, and until 2016 will have the same growth as revenues (5%). After the year 2016 the revenues of this segment will grow at the terminal growth rate of 2.97%.

[24] See *Diário Económico*'s article with the title "Saphety aposta no Brasil e Angola" – Issue number 5420 of May 8, 2012

4.2.3.5. Depreciation and Capital Expenditures

Over the years the amount of depreciation had small variations, some years increasing and others decreasing and the rate of depreciation of tangible assets was 17.8%, and of intangible assets was 14.4%. Thus, it was estimated that the annual depreciation will be the same as its average between 2006 and 2011, which is 140 million euros per year until 2016, and from 2017 depreciation will grow at the terminal growth rate of 2.97%.

Figure 22: Sonaecom's Depreciation

The operating CAPEX showed a constant growth from 2006 to 2008, due to the investment plan that included a higher level of investment in the mobile business in order to accelerate the extension of coverage and network capacity for mobile access. However, from 2008 to 2009 this figure had decreased by 29%. The company justifies this behavior as a result of cost control initiatives, and because of that kept its cost structure under control and carefully managed its spending on CAPEX. From 2009 to 2010 the total amount of operating capital expenditures also decreased by 4%, but this decrease was due solely to the fixed segment[25], whereas the CAPEX in the mobile and SSI segments increased. In 2011 operating capital expenditures increased significantly but this was due to the spectrum auction that occurred in November 2011 in Portugal, so last year's CAPEX include an amount of approximately 110 million euros, corresponding to the current value of future payments related with the acquisition of rights of use for frequency (spectrum), which will be used to develop 4th generation services (LTE - Long Term Evolution). In addition, during 2011 Optimus continued to

[25] Since the operational CAPEX from the fixed segment continues to benefit from the 'capital light' position, which aims to find alternative ways of expanding coverage of Optimus fiber, without further investment.

develop projects and solutions that will reduce costs for mobile backhaul, while reducing dependence on third-party infrastructure.

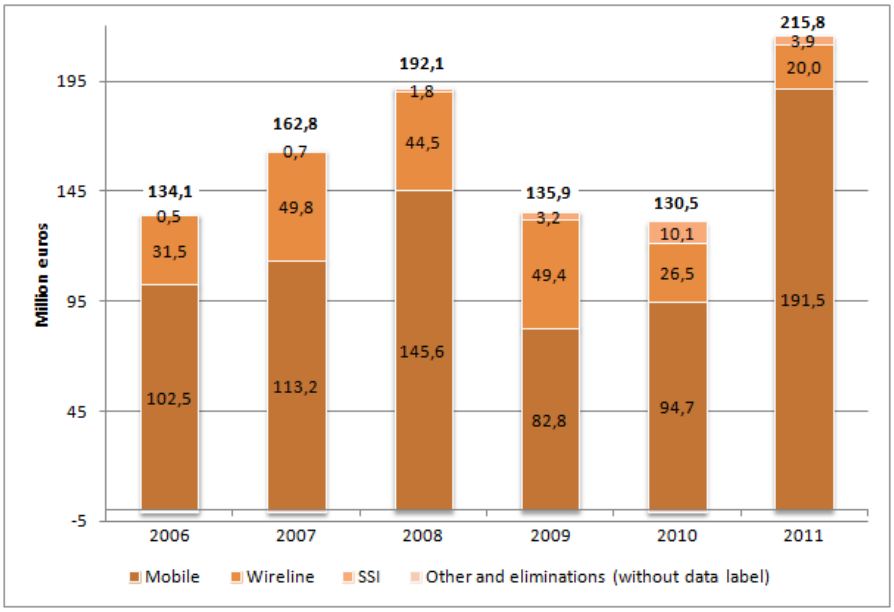

Figure 23: Distribution of Operating CAPEX by segments

It is estimated that by 2014 the annual CAPEX is 143 million euros, similar to the average of the annual value of previous years, from 2015 capital expenditures will decrease a little to 123 million euros, and from 2017 CAPEX will grow at the terminal growth rate of 2.97%.

4.2.3.6. Working Capital

Net working capital represents the operating liquidity available, being a measure of both a company's efficiency and its short-term financial health. This value can be calculated by subtracting a company's accounts payable from its accounts receivable and inventories. Thus, in the calculation of FCFF it is necessary to subtract the changes in net working capital by calculating the variation of the account from one year to another. However, Sonaecom does not provide the values needed to calculate the NWC separately, and so I used the values that are available in the annual reports for changes in working capital, specifically in the consolidated free cash flow (FCF) statements. It was estimated that changes in working capital will be -11.4 million euros in 2012 and that this figure will increase to -5 million euros in 2014, and from that year will be kept constant.

4.2.4. Firm Valuation with WACC

After all the calculations and estimations that were made above, it becomes possible to calculate the enterprise value using the weighted average cost of capital, resulting in a value of 713 million euros, of which 444 million are equity, and 269 million are net debt (See Appendix 8). Thus, by using this method the price for Sonaecom calculated is € 1.21 per share, while the current price is 1.15€ per share[26], and the average price of the last six months is 1.23€ per share (see Figure 6).

4.2.5. Adjusted Present Value

This approach allows to easily see the various sources of value and also to tailor the analysis and it has the advantage of being more useful in valuing companies that do not have a constant level of leverage, and the same does not happen in WACC. Thus, the valuation using this method will have two essential steps: (1) It will be calculated the value of the company without debt; and (2) both positive and negative effects that the leverage brings to the firm will be considered, being the positive effect the interest tax shields that result from the reduction of the taxable income by the amount of the interest, and the negative effect being the costs of financial distress since the risky of bankruptcy increases as the company becomes more indebted.

- Value of the unlevered firm[27] is 687 million euros, and it was easily calculated since the unlevered cost of equity and the unlevered beta had been previously estimated.
- The next step was the calculation of the tax shields, and to do so it was estimated that the tax shields should be discounted at the cost of debt, assuming that those have a similar risk to debt[28]. Thus, the value of tax shields is 78 million euros.
- Lastly, it was estimated the costs of financial distress by calculating for each year the value of the unlevered firm value multiplied by the percentage of loss of the company in distress (18,5%) and by the default spread (2,75%), discounting to the present at the cost of debt. Thus, the Sonaecom's CFD calculated was 44 million euros.

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[26] Closing price of May 29, 2012 – 1,15€

[27] $$\text{Value of Unlevered Firm} = \sum_{i=1}^{n}\left(\frac{FCFF_i}{(1+k_{E\,unlevered})^i}\right) + \frac{FCFF_{n+1}}{(k_{E\,unlevered}-g)} * \frac{1}{(1+k_{E\,unlevered})^n}$$

[28] $$\text{Present Value of the Tax Shields} = \frac{D*K_D*T_c}{K_D} = D*T_c$$

Thus, by using this method the price for Sonaecom is € 1.23 per share (See Appendix 9), while the current price is 1.15€ per share[23], and the average price of the last six months is 1.23€ per share (see Figure 6).

4.2.6. Multiples

Multiples can be used as a complement for the comprehensive valuations that have been previously made, and with this method the firms' value is calculated by multiplying a specific multiple by the performance measure for the company to be valued.

To form the peer group it was choose European companies from the telecom (wireless) industry, and since it is important to put in the group companies with similar expected growth and risk, there was a company that was excluded. The Drillisch AG was excluded because it had a growth rate significantly larger than the rest of the group (ROIC*Reinvestment Rate of 107%, while the average of the group stood at 4%).

Table 4: Sonaecom's Peer Group[29]

Company Name	Country	Market Cap (in US $)	Stock Price in US$	P/Book Value	Price/Sales	EV/EBIT	EV/Sales
Mobile Tornado Group plc	UK	$23.10	$0.13	-	10.31	-	15.12
Net mobile AG	Germany	$75.90	$8.96	1,47	0.58	-	0.74
Mobistar SA	Belgium	$3,156.80	$52.60	7,52	1.41	6.54	1.62
Vodafone Group plc	UK	$140,054.70	$2.78	1.05	1.90	17.51	2.52
Zamano plc	Ireland	$4.61	$0.05	1,50	0.22	-	0.44
Seanet Maritime Communications AB	Sweden	$0.17	$0.07	0,20	0.07	-	1.77
Freenet AG	Germany	$1,660.30	$12.97	1,11	0.37	6.63	0.54
Millicom International Cellular SA	Luxembourg	$10,368.70	$100.99	3,01	2.64	9.63	2.96
Ironroad AB	Sweden	$6.16	$0.87	3,95	7.49	-	7.73
Average	Europe	$17,261	19.9x	2.5x	2.8x	10.1x	3.7x

[29] Damodaran's Website

By analyzing the multiples' calculations it is clear that only the company's EV/EBIT ratio is similar to the peer group (Sonaecom's EV/EBIT ratio is 9.1). The Sonaecom's EV/EBIT ratio is lower than the group average which means that the company is being trade at discount, and that can reflect that there is lower expectations about earnings growth in the future than there is for the peer group.

The remaining Sonaecom's ratios are well below the group average, and this may happen once the company is in a market that is in crisis, so investors may be having a pessimistic attitude like a different growth assumption, which can explain the low price and consequently ratios lower than the peer group.

Table 5: Enterprise Value calculated using the EV/EBIT multiple

	Price per Share	Enterprise Value (Million euros)	EV/EBIT ratio	EBIT
Multiple	1,04	649	10,1	64,4
WACC	1,21	713		
APV	1,23	721		

Thus, when calculating the enterprise value through the multiple EV/EBIT, by multiplying 10.1 by the Sonaecom's EBIT, it was obtained the value of 649 million euros, lower than the results of the calculations previously made for the enterprise value using the WACC and APV.

4.3. Zon's Standalone Valuation

4.3.1. Cost of Capital

As mentioned above, it is necessary to estimate the different discount rates, according to the methodology to be used. Thus, the weighted average cost of capital will be used to discount the free cash flows to the firm and calculate the firm value, and the unlevered cost of equity to discount the free cash flows to the firm to determine the unlevered firm valuation.

4.3.1.1. Financial Structure

Before 2008 Zon had very low levels of debt (having a Debt / Value[30] ratio of 1%), but from 2007 to 2008, the net debt[31] had an increase of 529 million euros, of which 500.1 million euros was explained by the negative Free Cash Flow that the company had in 2008, and an additional 28.9 million euros was due to the acquisition of TVTel and the operations of Parfitel that resulted in the consolidation of the net debt of those companies.

In the last year the Debt / Value ratio reached 47%, having suffered a CAGR from 2008 to 2011 of 13.1%, however, this increase was mainly due to decreased market capitalization. In addition, the Zon's annual report states that the company will negotiate a new line of credit and this will contribute to a greater stability of the capital structure, increasing the average maturity of its net financial debt, and that together with a significant improvement in the cash flow profile will put the ZON in a comfortable position, without refinancing needs expected before the end of 2013. Thus, it was estimated that the net debt will be 630 million euros in the future, and since 2016 the D/V will be 46%.

4.3.1.2. Cost of Debt

The cost of debt can be calculated by adding both the risk-free rate and the default-risk of the company:

- The risk free rate that was used was the same as the yield on the Portuguese 10-year government bonds, and because that yield had significant changes in recent years, it

[30] Net Debt / (Net Debt + Market Capitalization)
[31] Net Debt = Short-Term Debt + Long-Term Debt – Cash and Equivalents

was used the average of the last three years, from May 2009 until May 2012 (See Appendix 1Appendix **1**: Portuguese Government Bonds 10 Yr), which is 7.564%.

- Regarding the default risk of the company, was considered that Zon Multimédia has the same rating as Portugal, since a company cannot have a rating higher than the rating of the country where it operates. Thus, the Moody's rating for Portugal is Ba2, and therefore the spread will be 4.75% (See Appendix 2).
- As a result, the cost of debt is 12.31%.

4.3.1.3. Cost of Equity

As mentioned before, the cost of equity will be determined by the estimation of the risk-free rate, risk premium, and then the equity risk premium will be adjusted for the particular risk of the firm (Booth - 1999). Therefore, according to the capital asset price model the cost of equity can be calculated by using the next formula:

$$k_j = r_F + \beta_j * (E(r_e) - r_f)$$

- The risk free rate that will be the same as Sonaecom's, which is 7.564%.
- The risk premium was estimated exactly as before and as suggested by Damodaran, so the total risk premium for Portugal is 10.125% (See Appendix 3).
- According to Damodaran's website, Zon Multimédia belongs to the cable TV industry, and the unlevered beta corresponding to this industry is 0.65.

Therefore, using the formula above with the unlevered beta, the unlevered cost of equity calculated is 14.19%[32]. Furthermore, in order to calculate the levered cost of equity is necessary to use the levered beta, and to calculate that beta it was taken into account the company's D/E and the corporate tax rate, according to the following formula:

$$\beta_{\text{levered}} = \beta_{\text{unlevered}} * [1 + (1 - t)\frac{D}{E}]$$

- In Portugal the standard corporate tax is 25% currently, which is added a rate of 1.5% relative to the municipal tax and also a rate of 2.5% for incomes over 2 million. In total, the corporate tax rate is 29% [33].

[32] Unlevered cost of equity= 7.56% + 0.65*10.13%

[33] http://www.worldwide-tax.com/portugal/portugal_tax.asp

The levered beta is 1.05[34] since 2016, so the levered cost of equity calculated is 18.20%[35]. Lastly, it was calculated the weighted average cost of capital according to the formula referred in the literature review and the results where:

	2012	2013	2014	2015	2016
WACC	13,84%	13,84%	13,84%	13,84%	13,85%

See Appendix 10 for all the calculations of the cost of capital.

4.3.2. Free Cash Flow to the Firm[36]

The calculation of the FCFF will be similar to that made with Sonaecom, thus it is necessary to compute the EBIT, taxes, capital expenditures, changes in working capital, depreciation and amortization. Therefore, to make the estimations it will be analyzed the revenues and costs of various segments of the company, as well as the depreciation, capex, working capital and taxes. The tax rate used was the marginal tax rate on profits, and corresponds to the corporate income tax rate (IRC) of the Portuguese Republic (25%), plus the rate of "derrama" (1.5%). The cash flows were estimated until 2016 since the crisis is expected to be overcome that year, and from 2016 the terminal growth rate will be 2.97%[37], representing the sum of real growth of the Portuguese market (1.5%) and the expected inflation rate (1.47%) after 2017.

4.3.2.1. Triple Pay

Table 6: Zon's Subscribers

	2008	2009	2010	2011	CAGR
Basic Subscribers	1.613,5	1.594,8	1.571,6	1.567,1	-1,0%
Cable Subscribers	1.176,9	1.181,5	1.163,9	1.178,4	0,0%
Triple Play Customers	275,4	484,4	642,3	708,7	37,0%
% Triple Play Cable	23,4%	41,0%	55,2%	60,1%	37,0%
DTH Subscribers	436,6	413.3	407,6	388,7	-3,8%
Broadband Subscribers	519,0	610,7	690,2	739,2	12,5%
Fixed Voice Subscribers	346,6	584,1	777,6	883,9	36,6%
Mobile Subscribers	7,2	68,9	107,9	125,0	158,9%

SOURCE: Zon's Annual Reports

[34] $\beta_{Levered}$ = 0.65*[1+(1-29%)*85%]

[35] Levered cost of equity = 7.56% + 1.05*10.13%

[36] See **Appendix 11** for the forecast of the FCFF.

[37] International Monetary Fund, World Economic Outlook Database, April 2012 - (http://www.imf.org)

The pay-TV is the most important business of Zon, and in recent years the company has been developing packages that combine the services of pay-TV, broadband and voice. So in addition to pay-TV, customers have the possibility to purchase other services at attractive prices. Therefore, as can be seen in the **Table 6**, in recent years there has been a marked growth of triple play customers (CAGR of 37% between 2008 and 2011), and although the number of pay-TV subscribers have not suffered many variations, there was a significant increase in broadband and voice subscribers.

Table 7: Zon Business Indicators - Pay TV

	2006	2007	2008	2009	2010	CAGR
Total Cable TV,Direct to home (DTH) and other technologies Subscribers	1.859	2.014	2.286	2.528	2.775	11%
Penetration rate (as % of households)	33,6%	35,2%	40,4%	44,2%	48,5%	10%
Zon's Basic Subscribers	1480	1547,1	1613,5	1594,8	1571,6	2%
Zon's Market Share	79,6%	76,8%	70,6%	63,1%	56,6%	-8%
Cable RGUs per Subscriber (units)	1,43	1,56	1,85	2,17	2,25	12%
ARPU	33,1	33,9	35,5	38,6	41,0	5%
Operating Revenue	587,9	629,5	688,2	737,8	773,2	7,1%

SOURCE: ICP-ANACOM (*Situação Comunicações 2010*) and Zon's AR

Although the number of customers has remained relatively stable, Zon has been losing market share since 2008 due to the entry of a competitor in the market. Portugal Telecom has entered this segment with the Meo brand and has been offering very attractive prices and presents a very powerful marketing, which involves the constant publicity in the media which has the participation of a group of comedy cherished by the Portuguese public. Thus, despite the increasing of the penetration rate for pay TV in Portugal, this raise in the market is being captured mainly by the competitor Meo.

Due to the proliferation of pay-TV and bundle offers in Portugal, it was estimated that the penetration rate will continue to rise at the same rate of the CAGR 2006-2010 (10%) by 2013 and it will remain stable thereafter at 64%. Furthermore, it was estimated that the Zon's market share will continue to decrease the rate of the CAGR 2006-2010 (-8%) by 2014, once Meo has been able to better capture new customers, and it will remain stable at 40.9% from 2015.

The ARPU showed a steady growth over the last years years until 2010, but in 2011 fell by 41 to 40,3. However, the ARPU still has room to grow. Despite the tight competition with Meo offering low prices, it is unlikely that the competitor prices continue to fall for much longer, since it will hold a large percentage of market share and will not have interest in reducing its margins. Furthermore, the fact that there are bundle offers makes it possible to increase the ARPU because each customer can buy more and with higher quality services. Thus, it was estimated that the ARPU will decline 1.7% in 2012 due to a lower private consumption, and that from 2013 to 2016 will have the same growth that had between 2006 and 2011 (with a CAGR of 4%), as more people opt for bundle offers and the IRIS service provided by Zon. Lastly, after the year 2016 the revenues of this segment will grow at the terminal growth rate of 2.97% (See Appendix 12).

4.3.2.2. Cinema and Audiovisuals

As stated earlier, regarding the cinema segment, the ticket sales decreased by 3.9%. This decrease stems not only from lower private consumption, as well as changes in the habits of going to the movies. Thus, the film market in Portugal is contracting, but in the Zon's strategy there are three main factors that were considered important for the revenue's forecast: the company continues to analyze the Angolan market and there may be a chance to explore more cinema complexes in that country; the company also continues to be interested in alternative content (namely through events, shows and French cinema), which may attract a different audience segment than the current that is young people who live in cities; in addition Zon focuses on increased sales of complementary products in theaters (to increase the money spent per customer). Besides all this, the company continues to invest in modernizing their cinemas with various technologies such as digitalized equipment, 3D projection technology or the kiosk service (Self Ticket Vending). Thus, it was estimated that revenues from the cinema will decrease 3.6% in 2012 (who suffered the same decline from 2010 to 2011), and from 2013 revenues will grow at the terminal growth rate of 2.97%.

Regarding audiovisuals, the segment has maintained a steady growth over the last years[38], except in 2011 when decreased by 0.5% in revenues, since that year was marked by a contraction of the cinema distribution market in Portugal. Zon has been innovating in this segment, both in the Home Video distribution business, as in the television business (it

[38] CAGR (2006 – 2011) of 11,24%.

launched a new HD channel, a series channel and three new SVOD[39] services in the last year). Thus it was estimated that revenues will continue to grow (although growing at a lower rate than that of previous years), at the terminal growth rate of 2.97% from 2012.

4.3.2.3. EBITDA Margin

Over the past five years the EBITDA margin has been growing consistently, with a CAGR (2006-2011) of 2.8%. Moreover, it is expected that with the stabilization of pay-TV segment there is a decrease in operating costs since the company does not need to spend so much money on marketing & publicity and attracting new customers (which is very expensive to do). It has also been estimated that the successful development of the bundle offers will result in costs falling since each client will have more than one service, contributing to economies of scale. Thus, it was estimated that the EBITDA margin will continue to rise until 2014 at a rate of 2.8%, and from 2015 the margin will stabilize at 40%.

4.3.2.4. Depreciation and Capital Expenditures

The annual value of depreciation has been increasing year after year but the ratio depreciation/assets was always close to 12%, and therefore the increase in the amount of depreciation result from the increase in the assets' value, and not due to a change in the assets' period of depreciation. Thus, since it was estimated that the value of the assets will be kept constant until 2016, it was estimated that the amount of depreciation will be 200 million euros by the same year, and from 2017 depreciation will grow at the terminal growth rate of 2.97%.

[39] Subscription Video on Demand

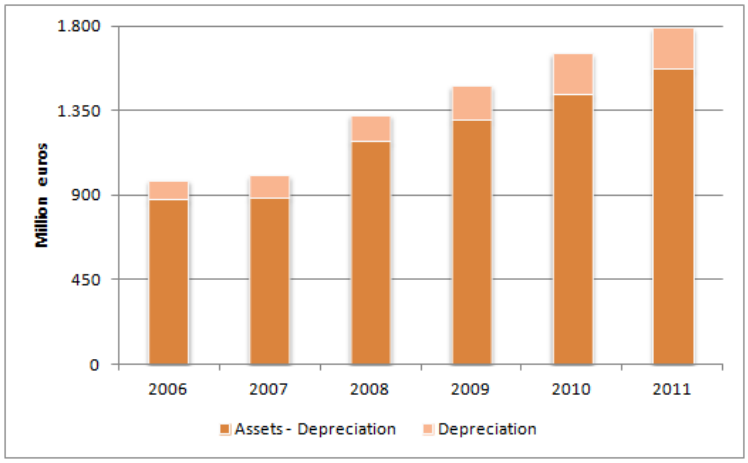

Figure 24: Zon's Depreciation

In recent years the amount of CAPEX has always been near 140 million euros, excluding 2009 and 2010 in which this value was higher than normal. However, in the Zon's annual report can be read that in 2011 the company significantly reduced the level of CAPEX by around 100 million euros due to the completion of all the large network investments and customer equipment upgrades in 2010. Thus, it was estimated that the value of CAPEX will be 138 million euros annually by 2016, from 2017 this value will be 190 million euros (getting near of the value of depreciation) and will grow at the terminal growth rate of 2.97%.

4.3.2.5. Working Capital

Net working capital represents the operating liquidity available, being a measure of both a company's efficiency and its short-term financial health. This value can be calculated by subtracting a company's accounts payable from its accounts receivable and inventories. Thus, in the calculation of FCFF it is necessary to subtract the changes in net working capital by calculating the variation of the account from one year to another. However, Zon does not provide the values needed to calculate the NWC separately, and so I used the values that are available in the annual reports for changes in working capital. In 2011 the value of changes in working capital was -32.8 million euros, and it was estimated that this figure will increase to -4 million euros in 2014, and from that year will be kept constant.

4.3.3. Firm Valuation with WACC

After all the calculations and estimations that were made above, it becomes possible to calculate the enterprise value using the weighted average cost of capital, resulting in a value of 1347 million euros, of which 717 million are equity, and 630 million are net debt. Thus, by using this method the price for Zon is € 2.32 per share (see Appendix 13), while the current price is 2.11€ per share[40], and the average price of the last six months is 2.45€ per share (see Figure 6).

4.3.4. Adjusted Present Value

This approach allows to easily see the various sources of value and also to tailor the analysis and it has the advantage of being more useful in valuing companies that do not have a constant level of leverage, and the same does not happen in WACC. Thus, the valuation using this method will have two essential steps: (1) It will be calculated the value of the company without debt; and (2) both positive and negative effects that the leverage brings to the firm will be considered, being the positive effect the interest tax shields that result from the reduction of the taxable income by the amount of the interest, and the negative effect being the costs of financial distress since the risky of bankruptcy increases as the company becomes more indebted.

- Value of the unlevered firm[41] is 1220 million euros, and it was easily calculated since the unlevered cost of equity and the unlevered beta had been previously estimated.
- The next step was the calculation of the tax shields, and to do so it was estimated that the tax shields should be discounted at the cost of debt, assuming that those have a similar risk to debt[42]. Thus, the value of tax shields is 183 million euros.
- Lastly, it was estimated the costs of financial distress by calculating for each year the value of the unlevered firm value multiplied by the percentage of loss of the company in distress (18,5%) and by the default spread (2,75%), discounting to the present at the cost of debt. Thus, the Zon's CFD calculated was 56 million euros.

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[40] Closing price of May 29, 2012 – 2,11€

[41] $$\text{Value of Unlevered Firm} = \sum_{i=1}^{n}\left(\frac{FCFF_i}{(1+k_{E\,unlevered})^i}\right) + \frac{FCFF_{n+1}}{(k_{E\,unlevered}-g)} * \frac{1}{(1+k_{E\,unlevered})^n}$$

[42] $$\text{Present Value of the Tax Shields} = \frac{D * K_D * T_c}{K_D} = D * T_c$$

Thus, by using this method the price for Zon is € 2.32 per share (See Appendix 14), while the current price is 2.11€ per share[36], and the average price of the last six months is 2.45€ per share (see Figure 6).

4.3.5. Multiples

Multiples can be used as a complement for the comprehensive valuations that have been previously made, and with this method the firms' value is calculated by multiplying a specific multiple by the performance measure for the company to be valued.

To form the peer group it was choose European companies from the cable TV industry.

Table 8: Zon's Peer Group[43]

Company Name	Country	Market Cap (in US $)	Stock Price in US$	P/Book Value	Price/Sales	EV/EBIT	EV/Sales
Eutelsat Communications	France	$8.619,80	$39,17	3,43	5,08	12,59	6,95
PrimaCom AG	Germany	$5,59	$0,24	-	-	-	-
British Sky Broadcasting Group plc	UK	$19.694,00	$11,40	12,17	1,86	13,07	2,20
Sky Deutschland AG	Germany	$1.293,40	$1,83	5,40	0,99	-	1,49
Kabel Deutschland Holding AG	Germany	$4.563,00	$50,70	-	2,01	23,11	3,71
Average	Europe	$6.835	20.7x	7x	2.5x	16.3x	3.6x

By analyzing the multiples' calculations it can be seen that only the company's EV/EBIT ratio is similar to the peer group (Zon's EV/EBIT ratio is 17.4). The Zon's EV/EBIT ratio is higher than the group average and this may result from low margins that the company has since it is in a very competitive market, where is happening a price war and companies have to incur in high costs of advertising and customer retention.

[43] Damodaran's Website

The remaining Zon's ratios are well below the group average, and this may happen once the company is in a market that is in crisis, so investors may be having a pessimistic attitude, which can explain the low price and consequently ratios lower than the peer group.

Table 9: Enterprise Value calculated using the EV/EBIT multiple

	Price per Share	Enterprise Value (Million euros)	EV/EBIT ratio	EBIT
Multiple	2.34	1,352	16.3	83.2
WACC	2.32	1,347		
APV	2.32	1,347		

Thus, when calculating the enterprise value through the multiple EV/EBIT, by multiplying 16.3 by the Zon's EBIT, it was obtained the value of 1,352 million euros, slightly higher than the results of the calculations previously made for the enterprise value using the WACC and APV.

5. MERGED COMPANY VALUATION

To calculate the synergies resulting from the merger of companies, it was used the method suggested by Damodaran (2005) that was mentioned in the literature review. Thus, synergies were estimated by calculating the value of the company after the merger (already with synergies), less the value that companies have without the merger.

The merged company will have a very strong position in the Portuguese telecommunications market, since in addition to result from a merger of two of the largest Portuguese companies, Sonaecom and Zon have different core businesses and because of that the merged company will have operations in mobile voice, fixed voice and multiple-pay.

5.1. Merged Company Valuation - Without Synergies

5.1.1. Cost of Capital

Since both companies operate in the same market, there are several components of the cost of equity that will remain the same. So the risk-free rate, market risk premium, cost of debt and tax rate will be equal to those calculated previously. Furthermore, the explicit period and the terminal growth rate are also identical to those previously used, since they are equal in both businesses. So the remaining calculations that are still needed are the financial structure and the value of the unlevered beta. The financial structure can be easily recalculated taking into account the estimates for the companies' net debt. Since the companies are in different sectors, the calculation of the unlevered beta was done as suggested by Damodaran, it was calculated the weighted average of the betas of the two industries, taking into account the weight of the companies' enterprise value, and the merged company's unlevered beta is 0.67.

Therefore, it was calculated the weighted average cost of capital according to the formula referred in the literature review and the results where:

	2012	2013	2014	2015	2016
WACC	13.98%	13.98%	13.98%	13.98%	13.99%

See Appendix 15 for all the calculations of the cost of capital.

5.1.2. Firm Valuation with WACC

After all the calculations and estimations that were made above, it becomes possible to calculate the enterprise value of the merged company using the weighted average cost of capital, resulting in a value of 2,061 million euros, of which 1,162 million are equity, and 899 million are net debt. Thus, by using this method the price for the merged company is € 1.72 per share (equity value divided by the sum of both companies' shares) – See Appendix 16.

5.1.3. Adjusted Present Value

- Value of the unlevered firm[44] is 1898 million euros.
- The value of tax shields is 260 million euros.
- The merged company's CFD calculated was 95 million euros.

Thus, by using this method the price for Sonaecom is € 1.72 per share (See Appendix 17).

The outcome of the APV is very similar to the WACC, but has a value slightly higher than that given by the WACC. Thus, when making the computation of the price to pay for the acquisition, it will be considered the value resulting of the method that uses the WACC.

5.2. Merged Company Valuation - With Synergies

5.2.1. Synergies

By looking to Zon and Sonaecom it appears that there is potential for synergies, both in cost reduction and increasing revenue. The fact that these companies are not exactly operating in the same sector leverages synergies that can be created, since both companies have strengths that will be beneficial for the merged company. Another fact is that both companies have fixed voice services and internet, which will clearly result in cost savings. Moreover, in the telecommunications market there is always a need for high investments, which becomes even more difficult for companies that are not market leaders, like Sonaecom, so with this merger, the companies will benefit from reduced CAPEX.

[44] $\text{Value of Unlevered Firm} = \sum_{i=1}^{n}\left(\frac{FCFF_i}{(1+k_{E\,unlevered})^i}\right) + \frac{FCFF_{n+1}}{(k_{E\,unlevered}-g)} * \frac{1}{(1+k_{E\,unlevered})^n}$

So, will then be analyzed the operating and financial synergies that may result from this merger. Operating synergies result from changes that occur in the cash flows related with operations and can be created due to an additional pricing power of the merged company, economies of scale, combination of functional strengths of both companies, among others, and will be analyzed in more detail below. Financial synergies result from an increase in cash flows or a decrease in the discount rate due to tax benefits that can occur, diversification, higher debt capacity, among others. Regarding this last type of synergy, it was not considered the possible creation of value through diversification that arises from this merger because the market does not use to believe in this type of synergy and it is also very difficult to estimate. There is also the possibility of having a higher debt capacity because of cash flows of both companies are not perfectly correlated, and the merged company will have a higher D/V ratio in the first two years, which results in higher tax shields and also higher costs of financial distress. However, the variation that will occur in the value of WACC is very small, since there is an increased level of debt, but there is a similar increase in firm value due to synergies.

5.2.1.1. Revenue Synergies

The synergies resulting from the increased revenues are difficult to estimate since they are very dependent on the demand and the company's ability to retain customers and encourage them to acquire new services. According to Sabbagh, Goussous and Mastoras (2011), a merger between two operators from the same market would enable them to increase their subscriber base and acquire higher market share. Thus, the calculation of synergies only took into account the possibility referred before: an increase of the subscriber base in multiple-play services, and consequently a higher market share. To Zon was being estimated that the market share would suffer a decline of 8% until 2014, however due to new customer base and more services available, it was estimated that in 2013 and 2014 the market share will have only a 7% decrease, stabilizing at 41.7% and everything else being equal (See Appendix 18). Thus, only a small variation in the decrease of the market share was estimated, since it is difficult to estimate the changes that will occur in the customer base, being preferable to estimate with only a small variation.

5.2.1.2. Cost Synergies

The synergies resulting from the reduction of costs are generally the most accepted by the market, because they are easier to implement and produce results more quickly. Since both companies are in the telecommunications industry there is great potential for cost reduction in the merged company.

According to an analysis of 150 transactions over a five year period from 2004 to 2008 conducted by Deloitte & Touche LLP[45], mergers and acquisitions from the telecom sector can exhibit savings in their operating costs of 15%. Thus, since a cost reduction of 15% is the historical value for cost synergies in mergers among comparable telecom operators, the calculations that follow on the cost synergies were made taking into account that same percentage.

The main costs that were considered for synergies were:

- Both companies have fixed voice and internet, so it is expected that the costs of those services will be reduced in one company, and since the wireline network from Zon is more advanced, it was estimated that there will be cost synergies in the Sonaecom's fixed segment. Thus, regarding fixed costs it was estimated that there will be a cut of 15%, representing a reduction of 31 million euros per year (See Appendix 19). This value represents only 2.6% of total operating expenses, since fixed costs represent 32% of the Sonaecom's operating costs, and Sonaecom represents 54% of total costs of the merged company.
- Wages and salaries: Once the companies are merged it is expected that the total number of employees will reduce, mainly in the fixed segment of Sonaecom which has about 300 employees. Therefore, it was estimated that there would be a reduction of 45 employees, so the cost reduction will be 0.42 million euros per year (a cut of 15% of Sonaecom's labor costs – See Appendix 19).
- Cost of goods sold: The merged company will be considerably larger, and will have a wider range of products that can combine and publicize in a better way, so it was estimated that the cost of goods sold will be less once the new company will be able to negotiate better with the suppliers of products needed, and will also be able to combine several products in a single customer and because of that the average cost

[45] http://www.deloitte.com/view/en_gb/uk/093ff33b4010e110VgnVCM100000ba42f00aRCRD.htm

per client can also be reduced. Thus, it was estimated that the COGS will have a cut of 15%, representing a reduction of 12.8 million euros per year (See Appendix 20).

- Marketing & Advertising: It is expected that these costs also have synergies since marketing departments of both companies will be merged, and since the brands belong to one company may well benefit from joint advertising. Despite finding that the brand Optimus should be retained for mobile voice (or changed very slowly), and Zon must remain for cable-tv, there will be savings to the level of the marketing mix. Thus, it was estimated that there will be a reduction of 15% in these costs, less 13.3 million euros in marketing costs per year (See Appendix 20).
- CAPEX: Companies will benefit from a reduced capital expenditures need, because the segment that have in common (fixed) is expected to decrease capital expenditures since it will not require such large investments, as will be merging with Zon. Thus, it was estimated that there will be a 15% reduction in CAPEX of the Sonaecom's fixed segment, and that this reduction will be over the next four years, with a total value of 7.7 million euros.

See Appendix 18 to check the revenues and costs reductions.

5.2.1.3. Costs of Merger

Following the acquisition of Sonaecom, in order to accomplish the merger of all components of both companies it is necessary to incur in costs. So to be possible that the different departments come together, and both companies begin to operate as one, that must have various costs.

When performing a merger it is necessary to pay commissions to an investment bank and lawyers, who will accompany and support the whole process. The investment banks ask for a success fee (also known as "transaction fees") and the best known method for calculating this fee is the Lehman Formula[46]: 5% commission for the first million dollars of a transaction, 4% for the second million, 3% for the third million, 2% for the fourth million, and, finally, a 1% commission for everything above $4 million. Thus, based on the Lehman Formula, the fees payable for the transaction will have a value of 9.3 million (See Appendix 21).

[46] The Lehman Formula was developed by Lehman Brothers in the 1970s.

There are also integration costs since it is necessary to incur costs to integrate the two companies and achieve synergies from there, but those costs are difficult to estimate. Moreover, it is necessary to pay compensations to employees that will be fired. On average the Sonaecom' employees are 37 years and was estimated to have an average seniority of 12 years. In Portugal, workers who are laid off are entitled to receive 30 days compensation for every year that they worked for the company, so it was estimated that the compensation for the dismissal of about 45 Sonaecom employees have a value of 0.42 million.

Therefore, it was estimated that the costs associated with the merger will be 9.82 million euros and will be discounted to the results of the merged company in the first year after the merger.

5.2.2. Cost of Capital

All the components of the cost of capital will be exactly the same as in the merged company without synergies, except the D/V ratio that change due to the variation in the company's value (increased value because of synergies) and due to an increased debt value, since it will be suggested that part of the acquisition should be finance through debt. Therefore, the weighted average cost of capital was calculated according to the formula referred in the literature review and the results where:

	2012	2013	2014	2015	2016
WACC	13.96%	13.97%	13.99%	14.00%	14.00%

See Appendix 22 for all the calculations of the cost of capital.

5.2.3. Firm Valuation with WACC

After all the calculations and estimations that were made above, it becomes possible to calculate the enterprise value of the merged company using the weighted average cost of capital, resulting in a value of 2,540 million euros, of which 1,125 million are equity, and 1,415 million are net debt. Thus, by using this method the price for the merged company is € 1.67 per share (equity value divided by the sum of both companies' shares) – See Appendix 23.

The valuation without synergies resulted in an enterprise value of 2061 million euros, thus the value of the synergies are 479 million euros.

5.2.4. Adjusted Present Value

- Value of the unlevered firm[47] is 2284 million euros.
- The value of tax shields is 410 million euros.
- The merged company's CFD calculated was 118 million euros.

Thus, by using this method the price for Sonaecom is € 1.72 per share (See Appendix 24).

The outcome of the APV is very similar to the WACC, but has a value slightly higher than that given by the WACC. Thus, when making the computation of the price to pay for the acquisition, it will be considered the value resulting of the method that uses the WACC.

[47] $$\text{Value of Unlevered Firm} = \sum_{i=1}^{n}\left(\frac{FCFF_i}{(1+k_{E\,unlevered})^i}\right) + \frac{FCFF_{n+1}}{(k_{E\,unlevered}-g)} * \frac{1}{(1+k_{E\,unlevered})^n}$$

6. ACQUISITION

With the current market situation, it may become hard to get a big funding to conduct an acquisition of this magnitude, so if Zon acquires Sonaecom seems to have more funding options (than if it were in reverse) as it is a larger company, another favorable factor is that in the past Sonaecom investors have shown interest in selling their company's position. Moreover, recently the businesswoman Isabel dos Santos has strengthened its position in the Zons's capital (in early May 2012) and now holds 15% stake, and according to the media is seeking to further strengthen its position with a possible acquisition of the CGD and BES stakes[48]. Thus, the problem that occurred in the past, with Zon having a very divided ownership structure and making difficult the decision of a possible merger, could be overcome (although the spokesman said that Isabel dos Santos rejects a scenario of merging with other Portuguese companies[49]).

6.1. Price and Method of Payment

As discussed in the literature review, the most successful acquisition method is the cash offer that usually occurs in tender offers. So Zon should contact the Sonaecom' shareholders directly and offer a price that has a premium above the market price. In this case, the Sonaecom's directors may or may not have endorsed the tender offer.

	Sonaecom
Price (Dec 2011)	1.22
# Shares	366,246,868
Market Capitalization (Dec 2011)	446.8

WACC - Equity Value	443.9
APV - Equity Value	452
Recommended Price	1.21

Synergies	479
Synergies/# Shares	1.31

Recommended Price + Synergies	2.52

[48] See *Diário Económico*'s article with the title "Isabel dos Santos na corrida pela posição da CGD e BES na Zon" – Issue number 5422 of May 10, 2012

[49] See *Diário Económico*'s article with the title "IAngolanos apoiam gestão de Rodrigo Costa" – Issue number 5422 of May 10, 2012

The total value of Sonaecom and synergies is 922.9 million, and the maximum premium that should be paid for each share would be € 1.31, and the maximum price per Sonaecom's share should be € 2.52. Thus, the Zon sould make an offer to the shareholders of a value per share of less than€ 2.52. And to finance this acquisition the company has to pay with cash and debt, since the market price of Zon is not overvalued, it should not pay with shares if not strictly necessary. Thus, Zon should pay the acquisition 44% with cash (since Zon has 407 million euros of cash and cash equivalents) and 56% with debt.

6.2. Portuguese Competition Authority

Zon and Sonaecom are large companies, belonging to the group of the 20 largest public companies in Portugal, and is therefore expected a close eye from the competition authority over the acquisition process. However, since companies are not exactly in the same industry it was considered that the competition authority will not be oppose to the operation.

7. CONCLUSION

The telecommunications market in Portugal is facing several challenges that have become important in the analysis of this transaction. The country is in crisis and this resulted in a decrease in the market value of public companies, since the PSI index has suffered declines due to uncertainty about the future of the country situation. In addition, both companies are facing strong competition in both sectors, so a merger would result in a company with more capabilities to compete in the market. Moreover, this industry is already reaching the stage of maturity, and so there is a strong requirement for companies to become more efficient and make cost savings.

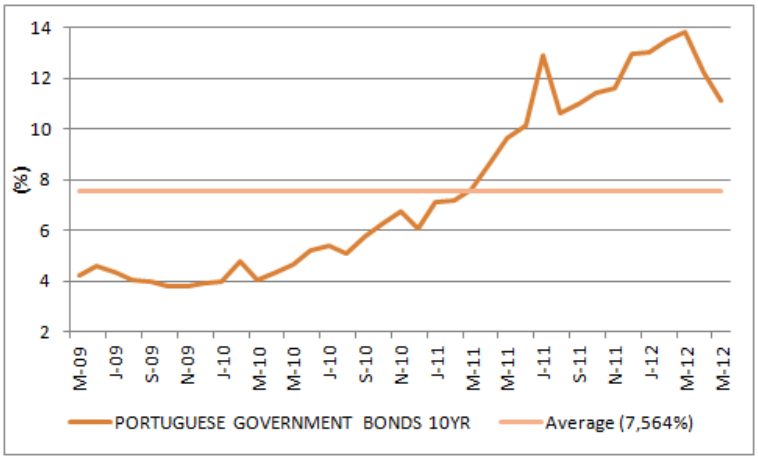
On the one hand, Sonaecom is in a sector that requires heavy investment to compete with its competitors, and such investments are very high for a company like this that it is not a market leader and is competing with large companies. In addition, Sonaecom has a very strong mobile segment that could be used in Zon's bundle offers, and has a weak fixed segment compared to Zon's, which will result in synergies as will be made considerable cuts in this Sonaecom's segment. On the other hand, Zon is a sector where it was the market leader but currently is having a strong competition by the Meo brand that is resulting in a steady loss of market share. Thus, with the merger Zon could use the strengths that Sonaecom has, as the mobile segment, and diversify their bundle offers in order to compete with the Meo. Consequently, the merged company will have a greater ability to compete with Portugal Telecom, and will also become efficient by reducing costs.

The synergies will result from the reduction of costs in the Sonaecom's fixed segment, since it is a common operation for both companies; reducing in the number of employees; decrease in the costs of goods sold; savings in the marketing department; a reduction of Sonaecom's CAPEX; and a smaller decline in the Zon's triple play segment market share. In addition there will also be costs associated with the acquisition, which will result in net synergies of 479 million euros.

To conclude, Zon should make an offer to Sonaecom's shareholders through a tender offer, with a price that corresponds to the standalone Sonaecom's fair value plus a premium to cover part or all of the synergies' value. Finally, if the tender offer is successful the Zon should finance the acquisition 44% with cash and 56% with debt.

8. APPENDIXES

Appendix 1: Portuguese Government Bonds 10 Yr[50]



SOURCE: Bloomberg website

Appendix 2: Default spread by credit rating

Rating:		Spread:
Moody's	**S&P**	
C	D	12.00%
Ca	C	10.50%
Ca	CC	9.50%
Caa2	CCC	8.75%
B3	B-	6.75%
B2	B	6.00%
B1	B+	5.50%
Ba2	**BB**	**4.75%**
Ba1	BB+	3.75%
Baa2	BBB	2.50%
A3	A-	1.65%
A2	A	1.40%
A1	A+	1.30%
Aa2	AA	1.15%
Aaa	AAA	0.65%

SOURCE: Damodaran's website

[50] http://www.bloomberg.com/quote/GSPT10YR:IND/chart (07/05/2012 - 1pm)

Appendix 3: Estimation of Risk Premium

Country	Portugal	
Adjusted Default Spread	2.75%	
Adjusted country risk premium	4.13%	(1,5 * 2,75%)
Risk premium for a mature equity market	6.00%	
Total Risk Premium	10.13%	(4,13% + 6%)

SOURCE: Damodaran website

Appendix 4: Sonaecom's Cost of Capital

Unlevered Cost of Equity:

Risk free	7.56%
Total Risk Premium	10.13%
Unlevered Beta	0.70
Unlevered Cost of Equity	**14.61%**

Levered Cost of Equity:	2012	2013	2014	2015	2016
Risk free	7.56%	7.56%	7.56%	7.56%	7.56%
Total Risk Premium	10.13%	10.13%	10.13%	10.13%	10.13%
Unlevered Beta	0.70	0.70	0.70	0.70	0.70
Corporate Tax rate	29.0%	29.0%	29.0%	29.0%	29.0%
D/E	60%	57%	54%	53%	51%
Levered Beta	0.99	0.98	0.96	0.96	0.95
Levered Cost of Equity	17.63%	17.48%	17.33%	17.25%	17.17%

WACC:	2012	2013	2014	2015	2016
Cost of debt	12.31%	12.31%	12.31%	12.31%	12.31%
Debt/Value	38%	36%	35%	35%	34%
Corporate Tax rate	29.0%	29.0%	29.0%	29.0%	29.0%
Cost of Equity	17.63%	17.48%	17.33%	17.25%	17.17%
WACC	**14.28%**	**14.29%**	**14.30%**	**14.31%**	**14.31%**

SOURCE: Damodaran website

Appendix 5: Sonaecom - FCFF

	2006	2007	2008	2009	2010	2011	2012E	2013E	2014E	2015E	2016E
Operating Revenues	822,2	892,7	976,2	949,4	920,7	863,6	904,2	874,1	883,7	906,7	930,4
Mobile	610,3	619,4	629,1	607,0	592,7	570,7	583,0	560,9	574,0	587,5	601,2
Fixed	200,1	255,4	291,3	245,1	237,6	220,4	200,5	182,4	165,9	170,8	175,9
SSI	65,1	79,5	120,1	149,9	142,5	108,5	120,2	133,2	147,6	152,0	156,5
Multimedia	36,4	33,2	32,3	30,4	29,7	25,9	25,1	24,4	25,6	26,9	28,2
Other and Eliminations	-89,7	-94,8	-96,6	-83,0	-81,8	-61,9	-24,7	-26,8	-29,4	-30,4	-31,4
Other Revenues	5,4	6,4	10,5	7,0	8,2	8,8	7,7	7,4	7,5	7,7	7,9
Operating Expenses	-670,9	-737,2	-826,3	-780,7	-735,0	-659,4	-705,8	-654,4	-659,4	-676,9	-694,7
Depreciation and Amortiz.	-135,7	-140,0	-157,6	-151,8	-129,5	-130,5	-140,0	-140,0	-140,0	-140,0	-140,0
EBIT	21,0	21,9	2,8	24,0	64,4	82,5	66,1	87,1	91,7	97,6	103,6
Taxes on EBIT	-5	0	0	-5	-17	-11	-18	-23	-24	-26	-27
Dep + Amort	135,7	140,0	157,6	151,8	129,5	130,5	140,0	140,0	140,0	140,0	140,0
CAPEX	-134,1	-162,8	-192,1	-135,9	-130,5	-215,8	-143	-143	-143	-123	-123
Changes in Working Capital	3	-10,4	-26,2	-4,1	-22	51,7	-11,9	-8	-5	-5	-5
FCFF	14,3	9,5	-5,5	38,8	68,7	-65,5	57,6	69,2	69,6	93,9	98,3

Appendix 6: Sonaecom - Forecast of the Mobile Segment

	2006	2007	2008	2009	2010	2011	CAGR (09-11)	CAGR (06-11)	2012E	2013E	2014E	2015E	2016E
Penetration Rate EU(25)	105,4%	114,4%	119,0%	120,9%	125,5%	-							
Penetration Rate Portugal	115,4%	126,7%	140,7%	151,0%	154,9%	157,6%	2,1%	6,4%	161,4%	164,9%	168,4%	172,0%	175,7%
Total Population	10.607	10.638	10.627	10.546	10.635	10.556	0,0%	-0,1%	10.576	10.596	10.617	10.637	10.657
Total Subscribers	12.236	13.477	14.953	15.929	16.474	16.635	2,2%	6,3%	17.069	17.469	17.878	18.297	18.725
Sonaecom Customers (EOP)	2.602	2.894	3.192	3.433	3.604	3.639	3,0%	6,9%	3.986	4.079	4.175	4.272	4.372
Customer's Market Share	21,3%	21,5%	21,3%	21,5%	21,9%	21,9%	0,8%	0,6%	23,4%	23,4%	23,4%	23,4%	23,4%
ARPU	19,7	18,2	16,8	14,9	13,6	12,9	-7,0%	-8,1%	12,2	11,5	11,5	11,5	11,5
Turnover	610,3	619,4	629,1	607,0	592,7	570,7	-3,0%	-1,3%	583,0	560,9	574,0	587,5	601,2
Other Revenues	34,4	37,0	46,5	36,2	33,4	32,2	-5,7%	-1,3%	23,3	22,4	23,0	23,5	24,0
Operating Costs	-475,8	-502,7	-533,3	-476,5	-440,7	-403,4	-8,0%	-3,2%	-376,4	-333,8	-341,6	-349,6	-357,8
EBITDA margin	27,67%	24,81%	22,62%	27,46%	31,28%	34,96%	12,8%	4,8%	39,44%	44,50%	44,50%	44,50%	44,50%
EBITDA	168,9	153,7	142,3	166,7	185,4	199,5	9,4%	3,4%	229,9	249,6	255,4	261,4	267,5

Appendix 7: Sonaecom - Forecast of the Fixed Segment

	2006	2007	2008	2009	2010	2011	2012E	2013E	2014E	2015E	2016E
Penetration Rate	40,0%	39,5%	38,5%	39,7%	39,4%	39,1%	38,8%	38,5%	38,2%	38,2%	38,2%
Total Population	10.607	10.638	10.627	10.546	10.635	10.556	10.576	10.596	10.617	10.637	10.657
Total Accesses	4.246	4.203	4.091	4.191	4.193	4.128	4.103	4.078	4.054	4.061	4.069
Sonaecom Accesses (EOP)	-	776	593	484	417	376	342	311	283	283	284
Accesses' Market Share	-	18,5%	14,5%	11,5%	9,9%	9,1%	8,3%	7,6%	7,0%	7,0%	7,0%
Average revenue per access (euros)		0,3	0,5	0,5	0,6	0,6	0,6	0,6	0,6	0,6	0,6
Turnover	200,1	255,4	291,3	245,1	237,6	220,4	200,5	182,4	165,9	170,8	175,9
EBITDA margin	-3,1%	3,8%	4,7%	2,2%	1,4%	4,4%	4,4%	4,4%	4,4%	4,4%	4,4%
EBITDA	-6,2	9,8	13,8	5,5	3,4	9,6	8,7	7,9	7,2	7,4	7,7
Costs	-206,3	-245,6	-277,5	-239,6	-234,2	-210,8	-191,8	-174,4	-158,7	-163,4	-168,2

SOURCE: Sonaecom Annual Reports

	2002	2003	2004	2005	2006	2007	2008	2009	GAGR (02-09)
Penetration Rate of Main Telephone Lines	42,0%	41,1%	40,4%	40,1%	40,0%	39,5%	38,5%	39,7%	-0,8%

SOURCE: ANACOM, Situação Comunicações 2010

	2008	2009	2010	2011	CAGR
Average revenue per access	0,5	0,5	0,6	0,6	6,1%

Appendix 8: Sonaecom - Firm Valuation with WACC

	Explicit Period					Terminal Value
	2012	2013	2014	2015	2016	2017 - ∞
FCFF	57.6	69.2	69.6	93.9	98.3	101.2
Discount Factor	0.88	0.77	0.67	0.59	0.51	4.52
Discounted CF	50.4	53.0	46.6	55.0	50.4	457.3

Expected NPV:	713
PV Explicit Period	256
Terminal Value	457
Net Debt	269
Equity	444
Recommended Price	1.21

Appendix 9: Sonaecom - Adjusted Present Value

	Explicit Period					Terminal Value	
	2012	2013	2014	2015	2016	2017 - ∞	
FCFF	57.6	69.2	69.6	93.9	98.3	101.2	
Discount Factor	0.87	0.76	0.66	0.58	0.50	4.29	Vu
Discounted CF	50.3	52.6	46.1	54.3	49.5	434.7	687.5

	2012
Net Debt	269.0
Tax Shields	78.0

Probability of Default	2.75%

Unlevered Firm Value	730.9	769.1	812.5	838.0	862.9	888.5	
18,5%*Default Spread*Unlev Firm Value	3.82	4.02	4.25	4.38	4.51	4.64	
Discount Factor	0.89	0.79	0.71	0.63	0.56	5.99	PV(CFD)
CFD	3.40	3.19	3.00	3.00	3.00	28.00	43.6

Expected NPV:	721
Unlevered Firm	687
Tax Shields	78
CFD	-44
Net Debt	269
Equity	452
Recommended Price	1.23

Appendix 10: Zon's Cost of Capital

Unlevered Cost of Equity:

Risk free	7.56%
Total Risk Premium	10.13%
Unlevered Beta	0.65
Unlevered Cost of Equity	**14.19%**

Levered Cost of Equity:	2012	2013	2014	2015	2016
Risk free	7.56%	7.56%	7.56%	7.56%	7.56%
Total Risk Premium	10.13%	10.13%	10.13%	10.13%	10.13%
Unlevered Beta	0.65	0.65	0.65	0.65	0.65
Corporate Tax rate	29%	29%	29%	29%	29%
D/E	88%	89%	89%	91%	89%
Levered Beta	1.06	1.07	1.07	1.08	1.07
Levered Cost of Equity	18.32%	18.36%	18.39%	18.45%	18.39%

WACC:	2012	2013	2014	2015	2016
Cost of debt	12.31%	12.31%	12.31%	12.31%	12.31%
Debt/Value	47%	47%	47%	48%	47%
Corporate Tax rate	29%	29%	29%	29%	29%
Cost of Equity	18.32%	18.36%	18.39%	18.45%	18.39%
WACC	**13.84%**	**13.84%**	**13.84%**	**13.84%**	**13.85%**

SOURCE: Damodaran website

Appendix 11: ZON - FCFF

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Operating Revenues	666,1	715,3	777,0	822,9	872,4	854,8	872,4	924,1	893,9	929,5	966,5
Pay TV, Broadband and Vo	587,9	629,5	688,2	737,8	773,2	757,9	776,0	824,9	793,3	827,5	863,0
Audiovisuals	25,9	40,0	40,2	35,9	44,3	44,1	45,4	46,8	48,2	49,6	51,1
Cinema	52,3	45,8	48,6	49,2	54,8	52,8	50,9	52,4	52,4	52,4	52,4
Operating Expenses	-455,4	-495,5	-532,1	-556,0	-569,9	-543,6	-545,8	-568,4	-540,1	-561,6	-584,0
Depreciation and Amortiz.	-102,5	-115,3	-139,1	-180,4	-219,3	-218,3	-200	-200	-200	-200	-200
EBIT	108,2	104,5	105,9	86,5	83,2	92,9	126,6	155,7	153,8	167,9	182,5
Taxes on EBIT	-29	-28	-28	-23	-22	-25	-34	-41	-41	-44	-48
Dep + Amort	102,5	115,3	139,1	180,4	219,3	218,3	200	200	200	200	200
CAPEX	-133	-150	-160,8	-213,6	-248,1	-138,4	-138	-138	-138	-138	-188
Changes in Working Capital	-24,6	50,6	-59	-15,5	-12,8	-32,8	-15,7	-10	-4	-4	-4
FCFF	73,6	-8,5	115,1	45,9	45,1	181,0	170,3	186,0	178,6	189,0	149,8

Appendix 12: ZON - Forecast of the Triple Play

	2006	2007	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Total Cable TV,Direct to home (DTH) and other technologies Subscribers	1.859	2.014	2.286	2.528	2.775	N/A	11% (2006-2010)	3.389	3.746	3.746	3.746	3.746
Penetration rate (as % of households)	33,6%	35,2%	40,4%	44,2%	48,5%	N/A	10% (2006-2010)	58,3%	63,9%	63,9%	63,9%	63,9%
Zon's Basic Subscribers	1480	1547,1	1613,5	1594,8	1571,6	1567,1	1%	1632,4	1663,6	1534,0	1534,0	1534,0
Zon's Market Share	79,6%	76,8%	70,6%	63,1%	56,6%	-	-8% (2006-2010)	48,2%	44,4%	40,9%	40,9%	40,9%
Cable RGUs per Subscriber (units)	1,43	1,56	1,85	2,17	2,25	2,36	11%					
ARPU	33,1	33,9	35,5	38,6	41,0	40,3	4%	39,6	41,3	43,1	45,0	46,9
Operating Revenue	587,9	629,5	688,2	737,8	773,2	757,9	7,1%	776,0	824,9	793,3	827,5	863,0

SOURCE: ICP-ANACOM (*Situação Comunicações 2010*) and Zon's AR

Appendix 13: ZON - Firm Valuation with WACC

	Explicit Period					Terminal Value
	2012	2013	2014	2015	2016	2017 - ∞
FCFF	170.3	186.0	178.6	189.0	149.8	154.2
Discount Factor	0.88	0.77	0.68	0.60	0.52	4.81
Discounted CF	149.6	143.5	121.1	112.5	78.3	741.6

Expected NPV:	1,347
PV Explicit Period	605
Terminal Value	742
Net Debt	630
Equity	717
Recommended Price	2.32

Appendix 14: ZON - Adjusted Present Value

	Explicit Period					Terminal Value	
	2012	2013	2014	2015	2016	2017	
FCFF	170.3	186.0	178.6	189.0	149.8	154.2	
Discount Factor	0.88	0.77	0.67	0.59	0.52	4.02	Vu
Discounted CF	149.1	142.7	120.0	111.1	77.1	619.6	1219.7

	2012
Net Debt	630
Tax Shields	182.7

Porbability of Default	2.75%

Unlevered Firm Value	1222.4	1209.9	1202.9	1184.6	1203.0	1238.6	
18,5%*Default Spread*Unlev Firm Value	6.22	6.16	6.12	6.03	6.12	6.30	
Discount Factor	0.89	0.79	0.71	0.63	0.56	5.33	PV(CFD)
CFD	5.54	4.88	4.32	3.79	3.42	33.58	55.5

Expected NPV:	1,347
Unlevered Firm	1,220
Tax Shields	183
CFD	-56
Net Debt	630
Equity	716.8
Recommended Price	2.32

Appendix 15: Merged Company (no synergies)'s Cost of Capital

Unlevered Cost of Equity:

Risk free	7.56%
Total Risk Premium	10.13%
Unlevered Beta	0,67
Unlevered Cost of Equity	**14.32%**

Levered Cost of Equity:	2012	2013	2014	2015	2016
Risk free	7.56%	7.56%	7.56%	7.56%	7.56%
Total Risk Premium	10.13%	10.13%	10.13%	10.13%	10.13%
Unlevered Beta	0.67	0.67	0.67	0.67	0.67
Corporate Tax rate	29%	29%	29%	29%	29%
D/E	77%	76%	75%	75%	74%
Levered Beta	1.03	1.03	1.02	1.02	1.02
Levered Cost of Equity	18.03%	17.99%	17.92%	17.92%	17.85%

WACC:	2012	2013	2014	2015	2016
Cost of debt	12.31%	12.31%	12.31%	12.31%	12.31%
Debt/Value	44%	43%	43%	43%	42%
Corporate Tax rate	29%	29%	29%	29%	29%
Cost of Equity	18.03%	17.99%	17.92%	17.92%	17.85%
WACC	**13.98%**	**13.98%**	**13.98%**	**13.98%**	**13.99%**

SOURCE: Damodaran website

Appendix 16: Merged Company (no synergies) - Firm Valuation with WACC

	Explicit Period					Terminal Value
	2012	2013	2014	2015	2016	2017 - ∞
FCFF	228.0	255.3	248.3	282.9	248.1	255.5
Discount Factor	0.88	0.77	0.68	0.59	0.52	4.71
Discounted CF	199	196	167	167	128	1,204

Expected NPV:	2,061
PV Explicit Period	857
Terminal Value	1,204
Net Debt	899
Equity	1,162
Recommended Price	1.72

Appendix 17: Merged Company (no synergies) - Adjusted Present Value

	Explicit Period					Terminal Value	
	2012	2013	2014	2015	2016	2017	
FCFF	228.0	255.3	248.3	282.9	248.1	255.5	
Discount Factor	0.87	0.77	0.67	0.59	0.51	4.09	Vu
Discounted CF	199	195	166	166	127	1044	1,897.9

	2012
Net Debt	899
Tax Shields	260

Probability of Default	2.75%

Unlevered Firm Value	1941.8	1964.6	1997.7	2000.8	2039.2	2099.6	
18,5%*Default Spread*Unlev Firm Value	10.15	10.26	10.44	10.45	10.65	10.97	
Discount Factor	0.89	0.79	0.71	0.63	0.56	5.33	PV(CFD)
CFD	9,00	8,00	7,37	6,57	5,96	58,50	95.4

Expected NPV:	2,063
Unlevered Firm	1,898
Tax Shields	260
CFD	-95
Net Debt	899
Equity	1,164
Recommended Price	1.72

Appendix 18: Revenues and Costs reductions and Costs of Merger

	2012E	2013E	2014E	2015E	2016E
Fixed Segment	31	31	31	31	31
W&S	0.42	0.42	0.42	0.42	0.42
Costs of goods sold	12.8	12.8	12.8	12.8	12.8
Marketing & Advertising	13.3	13.3	13.3	13.3	13.3
	57.50	57.50	57.50	57.50	57.50

CAPEX	-1.93	-1.93	-1.93	-1.93	0.00

Increase in Triple pay Revenues (due to a higher market share)	0.0	7.1	13.7	14.2	14.9

Costs of Merger	9.82

Appendix 19: Sonaecom Fixed Costs and Costs Synergies

	2011	Reduction (Million euros)
Direct Servicing Costs	-152.8	15%
Commercial Costs	-15.6	15%
Other Operating Costs	-40.6	15%
Costs reduction		31

Personnel Costs	-2.8	15%
Costs reduction		0.42

SOURCE: Sonaecom Annual Report - 2011

Appendix 20: Part of Sonaecom's Financial Statement and Costs Synergies

	2011
Operating Revenues	863.6
Operating Costs	-635.8
W&S	-92.4
Costs of goods sold	-85.4
External supplies and services	-442.3
Marketing & Advertising	-88.5
Other operating costs	-15.7

15% of COGS	12.8
15% of Marketing & Advertising	13.3

SOURCE: Sonaecom Annual Report - 2011

Appendix 21: Value of fees, according to the Lehman Formula

% Fees	Millions	Fees
5%	1	0.05
4%	1	0.04
3%	1	0.03
2%	1	0.02
1%	919[51]	9.2
	Total:	9.3

(Million euros)

[51] 444 millions (Sonaecom's equity value) + 479 millions (Synergies) – 4 millions

Appendix 22: Merged Company (with synergies)'s Cost of Capital

Unlevered Cost of Equity:

Risk free	7.56%
Total Risk Premium	10.13%
Unlevered Beta	0.67
Unlevered Cost of Equity	**14.32%**

Levered Cost of Equity:	2012	2013	2014	2015	2016
Risk free	7.56%	7.56%	7.56%	7.56%	7.56%
Total Risk Premium	10.13%	10.13%	10.13%	10.13%	10.13%
Unlevered Beta	0.67	0.67	0.67	0.67	0.67
Corporate Tax rate	29%	29%	29%	29%	29%
D/E	86%	79%	74%	71%	69%
Levered Beta	1.08	1.04	1.02	1.00	0.99
Levered Cost of Equity	18.45%	18.11%	17.85%	17.70%	17.62%

WACC:	2012	2013	2014	2015	2016
Cost of debt	12.31%	12.31%	12.31%	12.31%	12.31%
Debt/Value	46%	44%	42%	41%	41%
Corporate Tax rate	29%	29%	29%	29%	29%
Cost of Equity	18.45%	18.12%	17.86%	17.71%	17.62%
WACC	**13.96%**	**13.97%**	**13.99%**	**14.00%**	**14.00%**

SOURCE: Damodaran website

Appendix 23: Merged Company (with synergies) - Firm Valuation with WACC

	Explicit Period					Terminal Value
	2012	2013	2014	2015	2016	2017 - ∞
FCFF	264.9	306.6	306.4	343.4	309.0	318.2
Discount Factor	0.88	0.77	0.68	0.59	0.52	4.71
Discounted CF	232.4	236.0	206.9	203.4	160.6	1,500.2

Expected NPV:	2,540
PV Explicit Period	1,039
Terminal Value	1,500
Net Debt	1,415
Equity	1,125
Recommended Price	1.67

Appendix 24: Merged Company (with synergies) - Adjusted Present Value

	Explicit Period					Terminal Value	
	2012	2013	2014	2015	2016	2017	
FCFF	264.9	306.6	306.4	343.4	309.0	318.2	
Discount Factor	0.87	0.77	0.67	0.59	0.51	3.94	Vu
Discounted CF	231	234	205	201	158	1255	2284

	2012
Net Debt	1,415
Tax Shields	410.4

Probability of Default	2.75%

Unlevered Firm Value	2421	2444	2477	2480	2518	2579	
18,5%*Default Spread*Unlev Firm Value	12.65	12.77	12.94	12.96	13.16	13.47	
Discount Factor	0.89	0.79	0.71	0.63	0.56	5.33	PV(CFD)
CFD	11.26	10.12	9.13	8.14	7.36	71.84	117.9

Expected NPV:	2,576
Unlevered Firm	2,284
Tax Shields	410
CFD	-118
Net Debt	1,415
Equity	1,161
Recommended Price	1.72

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