



LISBON  
SCHOOL OF  
ECONOMICS &  
MANAGEMENT  
UNIVERSIDADE DE LISBOA

# **MASTER FINANCE**

## **MASTER'S FINAL WORK**

PROJECT WORK

MICROSOFT-NOKIA: STRATEGY AND VALUATION

DUARTE FILIPE PEREIRA TEIXEIRA

OCTOBER - 2015



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**SUPERVISOR:**

CLARA PATRÍCIA COSTA RAPOSO

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**Abstract**

The constant need for innovation in the technology sector is a major drive for a company's success. Microsoft, one of the largest companies in the sector was lagging behind its competitors (such as Apple and Samsung), not being able to benefit from new market trends: mobile and cloud. The need to innovate, alongside the financial turmoil we are living in, led Microsoft to react and seize the opportunity to acquire Nokia's phone segment. To do that, Microsoft paid Nokia \$9,500 million for its "Devices and Services" segment.

Mergers and Acquisitions are considered one of the best forms for companies to achieve value growth for their shareholders despite the inherent difficulties. The goal of this project is to understand the motivations behind the deal (from Microsoft's perspective), evaluate the possible synergies, and perform a valuation of the company that resulted from this acquisition.

**Keywords:** Microsoft, Nokia, FCFF, WACC, Strategy, Technology Industry

## Resumo

A constante necessidade de inovação no setor tecnológico é uma grande condicionante para o sucesso de uma empresa desse sector. A Microsoft, uma das maiores empresas do setor, tem ficado para trás dos seus principais concorrentes (Apple e Samsung), não beneficiando das novas tendências de mercado: móvel e cloud. Esta necessidade de inovar, aliada à turbulência financeira que estamos a viver, levaram a Microsoft a reagir e aproveitar a oportunidade de adquirir o segmento de telemóveis da Nokia. Para o fazer, a Microsoft dispôs-se a pagar \$9,500 milhões pelo segmento de “Devices and Services”.

Fusões e aquisições são consideradas uma das melhores formas para as empresas aumentarem o valor para os seus acionistas, apesar das dificuldades inerentes ao processo. O objetivo deste projeto é compreender as motivações por trás do negócio, do ponto de vista da Microsoft, estimar as possíveis sinergias e avaliar a empresa que resultou desta aquisição.

**Palavras-chave:** Microsoft, Nokia, FCFE, WACC, Estratégia, Indústria Tecnológica

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## **Glossary**

BL or ( $\beta$ ) - Beta Levered

C - Combined Firm

CAGR - Compounded Annual Growth Rate

CARC - compound annual rate of change

CAPM - Capital Asset Pricing Model

CF - Cash Flow

D - Debt

DCF - Discounted Cash Flow Method

D&C - Devices and Consumer

D/E - Debt to Equity Ratio

E - Equity

EBIT - Earnings before Interest and Taxes

EBITDA - Earnings before Interest Taxes Depreciation and Amortization

EG - Earnings Growth

EV - Enterprise Value

FCF - Free Cash Flow

FCFF - Free Cash Flows to the Firm

FCFE - Free Cash Flows to Equity

G - Growth rate

G<sub>n</sub> - Nominal Growth Rate

G<sub>real</sub> - Real Growth Rate

IDC - International Data Corporation

M&A - Mergers and Acquisitions

MS-DOS - Microsoft Disk Operating System

NDS - Nokia Devices and Services Business

NOWC - Net Operating Working Capital

OEM - Original Equipment Manufacturer

OS - Operating System

P/BV or PBV - Price to Book Value Ratio

PC - Personal Computer

P/E or PER - Price to Earnings Ratio

P/S - Price to Sales Ratio

Rd - Cost of Debt

Re - Cost of Equity

Rf - Risk Free rate

T – Taxes

Tc- Corporate Taxes

S - Sales

SEP - Standard Essential Patents

WACC - Weighted Average Cost of Capital

## 1. Introduction

The purpose of this project is to analyze the acquisition of Microsoft and Nokia, two giants of the technology sector, where the mobile industry belongs. Both firms are presented further, enabling to understand and justify the reasoning behind this deal.

Inserted in a highly competitive market, where the capacity to predict new trends and consumer behaviors are key aspects to increase or maintain their market share, this deal represents a possible game change to Microsoft.

This is the main reason behind the choice of this theme: Microsoft and Nokia have both, on the past few years, lost part of their competitiveness in the market, as a result of poor decisions (Microsoft) or even due to absenteeism of decisions (Nokia):

- Nokia, that had most of the market share during almost a decade has been losing market share each year as a result of a late investment in the smartphone sector. In 2009, they had a market share of nearly 36.40%, versus a 9.9% share in 2014<sup>1</sup>.
- On the other hand, Microsoft, which focused only on software, has nowadays, lost its relevance in the market when compared with either Apple or Google. Even though Windows and Microsoft Office are market leaders in their categories, competitors are threatening their positions. Beside these products, other have fallen short: for example, Internet Explorer is no longer ranked #1 in the category of internet browsers.

Microsoft acquired Nokia's "Devices and Services" segment for \$9,500 million, divided in two parts: \$7,100 million in cash and \$2,100 million in Nokia's convertible notes. Understanding the factors that led to this deal is crucial, understanding how (and why) two

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<sup>1</sup> Source: <http://www.statista.com/statistics/271574/global-market-share-held-by-mobile-phone-manufacturers-since-2009/>

major players were unable to adapt to new trends and technological development and how this acquisition will change the future of Microsoft.

Regarding the structure of this project, chapter 2 will contain a brief Literature Review for the Merger, Acquisitions and Valuation topics, providing a theoretical background for the subsequent sections.

In chapter 3 an Industry and Company analysis will be made, uncovering each of the companies' historical background and market trends, providing more detailed information on their core business, financial indicators and market performance.

Afterwards, on chapter 4, we will study the stock market performance for both companies (and Microsoft main competitors). In chapter 5, we will be addressing the strategy of Microsoft and Nokia. In order to do it, we will be using SWOT analysis and 5 Forces of Porter. Furthermore, a strategic point of view about Microsoft's vision of the future will be presented on this chapter.

In chapter 6, our focus will be on the valuation of Microsoft (calculating the synergies emerged from the deal) and Relative Valuation. In the same chapter, we will cover the assumptions used and the forecasted Income Statement and Balance Sheet.

Lastly, chapter 7 will present the conclusions of this project work.

## **2. Literature Review**

In this section, I present a brief review of the literature that supports the analysis Mergers and Acquisitions and Business Valuation.

### **2.1 Mergers and Acquisitions (M&A)**

An “acquisition is the purchase of some portion of one company by another” (Clayman, Fridson, & Troughton, 2012), either by purchasing assets, a specific segment of other firm, shares or even the entire company. When proceeding with this strategy, the main goal of a company is to create value for their shareholders (Hillier, Ross, Westerfield, Jaffe, & Jordan, 2003). «Depending on the strategy followed, this value can arise as synergies, increase in earnings or diversification (Clayman, Fridson, & Troughton, 2012). The last one has not only a financial side but also a managerial one, as it is directly affected by the manager vision of the company. Damodaran (2005) defines synergy as the additional value generated by combining two entities, when the wealth of the whole combined firm is worth more than the sum of the previous two separated firms (Bradley, Desai, & Kim, 1988).

#### **2.1.1 Types of M&A Deals**

There are three basic forms of acquisitions (Hillier et al, 2003):

- **Merger or Consolidation:** While in a merger, one of the firms involved ceases its activity and the other keeps its identity, in a consolidation a completely new firm is created. The two separate firms terminate their previous legal existence and are now part of a new firm. This kind of deal results in combining both assets and liabilities of acquired and acquiring companies.
- **Acquisition of Stock:** Results in the purchasing of voting shares in exchange of cash, share or other type of securities. Usually, it starts as a private offer between managers

and at some point evolves to a tender offer. It is made directly from the acquiring firm to the shareholders (requires the voting from 50% of shareholders, according to (Clayman, Fridson, & Troughton, 2012)).

- Acquisition of Assets: involves the purchase of target's assets. This does not mean that the target firm ceases to exist, once the acquirer might buy a specific division instead the whole company. In turn, the voting from 50% of shareholders is not required, with the exception of asset purchases that totalize over half the company's value (Clayman, Fridson, & Troughton, 2012).

Alongside these forms, other deals classifications exist such as (Brealey, Myers, & Allen, 1998):

- Horizontal Merger/Acquisition: Both acquirer and target firms belong to the same industry;
- Vertical Merger/Acquisition: The acquirer firm and target act in complementary industries and can have a buyer-seller relationship;
- Conglomerate Merger/Acquisition: Acquirer and target operate in different, unrelated industries.

## **2.2 Synergies**

Addressing this topic is crucial as synergies represent a central role in the M&A analysis. According to Hillier et al, (2003) there are four possible sources of synergies: Revenues Enhancement, Cost reduction, Lower taxes and Lower Capital Requirements. In other words, the increase in value can result from increase in the expected cash-flows (market/monopoly gains), reductions in costs (through economies of scale, improvement of technologies, economies of vertical integration, etc.), tax benefits (unused debt capacity or

unused tax losses) or by reducing fixed capital needs; (Chatterjee & Lubatkin, 1990) (Damodaran, 2012); (Pautler, 2003).

From the possible sources of synergies, the most common is cost reduction as companies are more successful in reducing costs than in increasing revenues (Sirower & Sahni, 2006).

Another approach to calculate synergies is to determine if the wealth of the whole combined company (after the merger) is higher than the sum of company A and B (Bradley, Desai and Kim, 1988; Hillier et al., 2010). This tell us that the combined firm works more efficiently than the two previously separate firms (Hillier et al., 2010).

$$(1) \text{ Synergies} = V_{AB} - (V_A + V_B)$$

$V_{AB}$  = Whole Company

$V_A$  = Company A

$V_B$  = Company B

### **2.3 Business Valuation**

Nowadays, business valuation is an area of major relevance in finance, as it represents one of the most important tools of modern finance theory. According to Koller, Goedhart & Wessels (2010) “value is the defining dimension of measurement in a market economy”. Still, the value of a company is uncertain, as it depends on different factors, which are not always predictable or either necessarily logic. There is also a wide range of valuation models, which according to Damodaran (2012) “may add to that uncertainty”. There is no perfect model, as the characteristics of the asset being valued are important in the process of choosing the model (Damodaran, 2012). Due to this fact, we will now explain some pros and cons of the different valuation methods.

### **2.3.1 Valuation Methods**

Besides the different models and methodologies, their classification is not consensual (Damodaran, 2012) (Fernández, 2015). In this review, the discounted cash flow method (DCF) and the relative valuation method are going to be described.

#### **2.3.1.1 – Discounted Cash Flows (DCF)**

The DCF methods are known as a base model for valuations, as they are an integrant part of other methods, such as relative valuation and option pricing models (Damodaran, 2012) and are considered “conceptually correct” (Fernández, 2015), as they define the company as a cash flow generator, somewhat comparable to a financial asset. The objective of the DCF method is to determine the company’s value, “discounting free cash flows at the weighted average cost of capital” (Koller, Goedhart, & Wessels, 2010). One of the reasons behind the popularity of this model is the fact that it is consistent with the “goal of long-term value creation” and captures the elements affecting the value of the company (Yao, Lin, & Chen, 2005). The precision of this model is dependent on the forecast of the cash flows, dividends, risk premium and other assumptions made regarding the discount rate (Brealey, Myers, & Allen, 1998). Concerning the methods, there are two main different approaches: free cash flow to firm (FCFF) and the free cash flow to equity (FCFE) (Clayman, Fridson, & Troughton, 2012).

##### **2.3.1.1.1 – Free Cash Flow to the Firm (FCFF)**

From the perspective of the firm, we should use the FCFF to assess its value. According to (Fernández, 2015) the FCFF is the available cash flow to all investors, after all operating expenses, fixed assets needs and working capital requirements are fulfilled. According to the same author, it coincides with the cash flow for the shareholders if we have a company

with zero debt. This methodology is most used for companies with a constant debt-equity ratio (or pursuing one as a target), avoiding that debt service and interest are considered explicitly in the calculations of cash flows (Mota, Barroso, Nunes, & Ferreira, 2010). The FCFF formula is, according to multiple authors as follows:

$$(2) \quad FCFF = \text{Earnings before Income and Taxes (EBIT)}(1 - T) \\ + \text{Depreciations \& Amortizations (D\&A)} - CAPEX \\ - \Delta \text{Net Operating Working Capital Needs}$$

EBIT(1-t) – profit that the company has after deducing the costs from the operational activities and after deducting taxes (Koller, Goedhart, & Wessels, 2010).

$$(3) \quad EBIT = \text{Revenues} - \text{Operating Costs} - \text{Depreciation \& Amortization}$$

Depreciation & Amortization – costs that a company has with the investment in assets (tangible or intangible), over its useful life. This is added back once it is an accounting expense (Damodaran, 2012).

CAPEX – investment realized in the purchase of assets with a perspective of long permanency in the company. The company should make these investments to maintain a certain level of activity in terms of assets/fixed capital. We should take back this value once they are cash outflows (Damodaran, 2012) (Koller, Goedhart, & Wessels, 2010).

Net Operating Working Capital Needs – is the excess of operating current assets over operating current liabilities. A positive NOWC means that we need to finance our activity.

#### **2.3.1.1.1 – Weighted Average Cost of Capital (WACC)**

To take into account the long-term nature of a business and the time value of money it is necessary to discount the FCFs. One should use the weighted average cost of capital

(WACC). The WACC represents a weighted average of the after-tax costs of different sources of capital, where each is weighted by the fraction of the capital structure it represents (Luehrman, 1997). While it is widely accepted, some authors state that a truly correct WACC rate is hard to achieve, as it needs to be recalculated each period as a result of leverage changes, making it a too exhaustive task. This methodology assumes that capital structure is not fixed across time (it is subject to rebalances) and so it adds some uncertainty to its assets future values. Because of that, the value of future debt tax shields will also carry uncertainty (Miles & Ezzell, 1980). However, there are also instances in which companies do intend to keep a stable capital structure, which reinforces the precision of applying the WACC method.

The formula for the WACC rate is:

$$(4) \quad WACC = \frac{E}{E + D} \times R_e + \frac{D}{E + D} \times R_d \times (1 - T_c)$$

Next follows a small description of each one of the WACC components:

Company's Market Equity ( $E$ ): The market Equity value is known by multiplying the number of outstanding shares by the market share price of the company (market capitalization) (Koller, Goedhart, & Wessels, 2010).

Company's Market Debt ( $D$ ): Market Debt is the value of Long-Term Liabilities of the company, considering that "short term debt is temporary, seasonal, or incidental financing", otherwise we should also include short-term debt (Brealey, Myers, & Allen, 1998).

Cost of Debt ( $R_d$ ): Rate a company pays to borrow money. There are two common methods to achieve this rate: through the Yield to Maturity of the company's bonds (long-term issues) or through the risk free rate ( $R_f$ ) added with the credit spread that the company has

been attributed by a rating agency ( (Clayman, Fridson, & Troughton, 2012) (Damodaran, 2012).

Taxes ( $T_c$ ): Corporate tax rate. Its value depends on the country where the companies are based.

Cost of Equity Capital ( $R_e$ ): Profitability desired by shareholders. In order to estimate it one should use the Capital Asset Pricing Model (CAPM). The CAPM Model is used to determine the return that investors require for a given level of risk. The model was created by Sharpe (1964) and further developed by Lintner (1965). CAPM tell us that the expected rate of return on any security is equal to the risk-free rate ( $r_f$ ) added to the beta of the security ( $\beta_L$ ) times the market risk premium( $E[R_m] - r_f$ ) ( (Damodaran A. , 2012) (Jagannathan & McGrattan, 1995); (Koller, Goedhart, & Wessels, 2010)):

$$(5) \quad E(r_i) = r_f + \beta_L[E(R_m) - r_f]$$

To arrive at the cost of equity we should compute the following parameters:

- Risk free rate ( $r_f$ ): is the rate of return of an investment without risk. We should look for long-term government default-free bonds (Koller, Goedhart, & Wessels, 2010).
- Beta Leverage ( $\beta_L$ ): is a measure of the systematic risk of a security. Measures the sensibility of the share price to changes in the market.
- Market risk Premium [ $E(R_m)-r_f$ ]: is the excess return a market portfolio provides over a risk free rate. According to Koller, Goedhart, & Wessels (2010) is possible to reach the excess return by “measuring and extrapolating historical returns (...) and using DCF valuation, along with estimates of return on investment and growth”.

In most applications of this valuation technique, there is an explicit horizon of forecast of annual free cash flows, and for the more distant future, different assumptions are made. The Residual Value is the continuing value of the company, assuming that future cash flows will grow at a perpetual fixed rate (Kaplan & Ruback, 1996) (Koller, Goedhart, & Wessels, 2010).

$$(6) \text{ Residual Value} = \frac{Ebit_n (1-t) * (1+g_n) - Invested\ Capital * g_n}{WACC - g_n}$$

$$(7) (1 + g_n) = (1 + g_{real}) \times (1 + inflation)$$

According to Damodaran (2012) and Kaplan & Ruback (1996), the enterprise value is:

$$(8) \text{ Enterprise Value} = \frac{FCFF_1}{(1+WACC)^1} + \frac{FCFF_2}{(1+WACC)^2} + \dots + \frac{FCFF_n}{(1+WACC)^n} + \frac{\text{Residual Value}}{(1+WACC)^n}$$

After obtaining the enterprise value (EV), our interest falls on the value per share. In order to obtain it, one must transform the EV into equity value: According to Estridge & Lougee, (2007):

$$(9) \text{ Equity Value} = \text{Enterprise Value} - \text{Market Value of Debt} + \text{Non} \\ - \text{Operating Assets} - \text{Minority Interests}$$

By dividing this value by the number of shares outstanding, we reach the price target of the company:

$$(10) \text{ Price target} = \frac{\text{Equity Value}}{\text{Shares Outstanding}}$$

### 2.3.1.1.2 – Free Cash Flow to Equity (FCFE)

As an alternative to FCFF, we have the Free Cash Flow to Equity (FCFE) approach. The FCFE represents the cash flow that is left to shareholders after all the investment needs, operating expenses and payments concerning debt are made (Damodaran, 2012). This

excess cash flow can be used to repurchase shares or distributed as dividends. The FCFE formula is (Berk & DeMarzo, 2013):

$$(11) \text{ FCFE} = \text{Net Income} + \text{Depreciation} - \text{Capital Expenditure} - \Delta \text{Net Operating Working Capital Needs} - (\text{New Debt issued} - \text{Debt repayments})$$

- Net Income: Company's Total earnings, representing the shareholders accounting measure of earnings for the year.
- The remaining indicators follow the same conditions of the FCFF methodology.

To discount the FCF, the appropriate discount rate is the cost of equity:

$$(12) \text{ PV FCFE} = \frac{\text{FCFE}_1}{(1+r_e)^1} + \frac{\text{FCFE}_2}{(1+r_e)^2} + \dots + \frac{\text{FCFE}_n}{(1+r_e)^n} + \frac{\text{Residual Value}}{(1+r_e)^n}$$

The Residual Value is computed through:

$$(13) \text{ Residual Value} = \frac{\text{Net Income}_n(1 + g_n) - \text{Assets}_n(g_n) + \text{Debt}_n(g_n)}{(r_e - g_n)}$$

$$(14) \text{ Equity Value} = \text{PV FCFE} + \text{Cash \& Marketable Securities}$$

$$(15) \text{ Price target} = \frac{\text{Equity Value}}{\text{Shares Outstanding}}$$

### 2.3.1.2 – Relative Valuation

Relative valuation focuses on what is expected (by the market) to be a firm's ability to create profit, when comparing its position against competitors/similar firms in the same industry (comparable companies), at a fixed point in time. Quoting Koeplin, Sarin, & Shapiro (2000): "although these multiples do not yield precise valuations, they (...) are a standard technique used by investment banker and appraisers in valuing companies" and are proved to result in lower valuation errors (Kaplan & Ruback, 1996). Usually, relative valuation is based on enterprise value multiples. The enterprise value can be defined as "the

market value of its debt and equity minus the value of its cash and investments” (Clayman, Fridson, & Troughton, 2012). Some examples are: Enterprise value to Free Cash Flow (EV/FCF), Enterprise value to EBITDA (EV/EBITDA) or Enterprise value to EBIT (EV/EBIT). This valuation technique is appropriate to compare valuation of a company with its peers in the same industry. According to Fernandez (2015), valuation multiples can be divided into three main categories:

1. Multiples based on Market Capitalization: These multiples are easy to understand and calculate. Some examples are:

$$(16) \text{ Price to Earnings Ratio: } P/E = \frac{\text{Market Capitalization}}{\text{Total Net income}}$$

$$(17) \text{ Price to Sales: } P/S = \frac{\text{Market Capitalization}}{\text{Sales}}$$

$$(18) \text{ Price to Book Value: } P/BV = \frac{\text{Market Capitalization}}{\text{Book value of shareholder's equity}}$$

2. Multiples based on the company’s value: Similar to the ones in the previous section but using the Enterprise Value instead of the market capitalization. Next are some examples:

$$(19) \text{ Enterprise Value to EBITDA: } EV/EBITDA = \frac{\text{Enterprise Value}}{\text{EBITDA}}$$

$$(20) \text{ Enterprise Value to Sales: } EV/S = \frac{\text{Enterprise Value}}{\text{Sales}}$$

$$(21) \text{ Enterprise Value to FCF: } EV/FCF = \frac{\text{Enterprise Value}}{\text{Free Cash Flow}}$$

3. Growth-referenced multiples:

$$(22) \text{ Price to Earnings Growth: } P/EG = \frac{\text{PER}}{\text{Growth of EPS in next years}}$$

$$(23) \text{ Enterprise Value to EBITDA: } EV/EBITDA = \frac{\text{Enterprise Value}}{\text{Growth of EBITDA in next years}}$$

Considering that relative valuation is known as a simple approach, it can present some problems, such as finding comparable firms, listed and with a proper valuation; risk accounting difficulties, among others. For that reason, we need to make some assumptions: cash flows are expected to grow at the same rate ( $g$ ) and all firms are of the same risk as the one under valuation (Kaplan & Ruback, 1996).

According to Lie & Lie (2002) and Fernandez (2015), the choice of the appropriate multiples depends on the sector in which the firm operates, so that we can perform viable valuations.

### **3. Company Analysis**

In this chapter, we will make a brief overview of the two companies, focusing on their history, business segments and main competitors.

#### **3.1 – Microsoft**

Bill Gates and Paul Allen founded Microsoft, in 1975, in the United States of America. Their dream was to have a computer in every home, allowing each individual or business throughout the world to do more and achieve more. In 1981, they developed MS-DOS, a software that is the foundation on which computer programs can run. But this software was not particularly intuitive for users and a better solution was needed: Windows was created (in 1983) with a much more user-friendly interface, allowing for widespread usage of Microsoft Windows (from version 1.0 to 10) as the standard of the personal computer operating system. Between every update, Microsoft pursued higher goals, anticipating the consumers' needs. Aside from that, Microsoft has developed other industry-leader products: from operating systems and software for PC's, servers, phones and tablets to

actual PC's, tablets, gaming consoles and nowadays, phones. Some examples of successful products are Microsoft Office (1989), Internet Explorer (1995), Xbox (2001) and Windows Phone (2010). All these products transformed the way people learn, work, play and communicate. On its on-going progress, Microsoft developed a vision of the future that is grounded on cloud-based solutions such as Bing, OneDrive, Skype, Xbox Live and others, which are integrated on the majority of their existing products.

### 3.1.1 – Microsoft Operating Segments

In 2014, the operating segments of Microsoft were divided in the following way: Devices and Consumer (D&C): Licensing, Hardware and Other; Commercial: Licensing and Other. With the acquisition of Nokia Devices and Services Business (NDS), the D&C segment was renamed to Computing and Gaming Hardware and a new segment called Phone Hardware was created (this latter change only occurred in the last quarter of fiscal year 2014).

**D&C Licensing:** This segment is responsible for licensing Windows (OEM and others), Microsoft Office (core Office product set, designed for consumers), Windows Phone (patent licensing) and other patent licensing revenue.

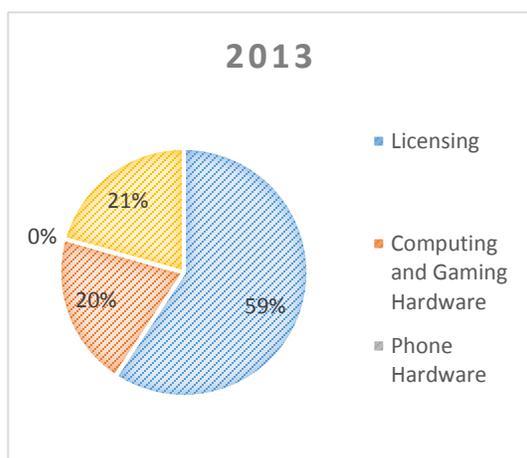


Figure 1: Segment Sales for 2013  
Source: MICROSOFT'S Annual Reports

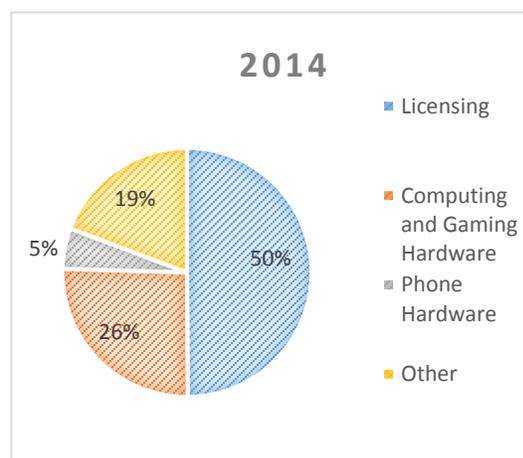


Figure 2: Segment Sales for 2014  
Source: MICROSOFT'S Annual Reports

**D&C Computing and Gaming Hardware:** This segment is responsible for the gaming and entertainment consoles and accessories (Xbox), Xbox Live subscriptions as all of royalties related to videogames. Surface devices, Microsoft PC and accessories for both are also part of this segment.

**D&C Phone Hardware:** Here, as the name indicates the main products are phones. More specifically, Lumia smartphones and other, which Microsoft began manufacturing and selling with the acquisition of NDS.

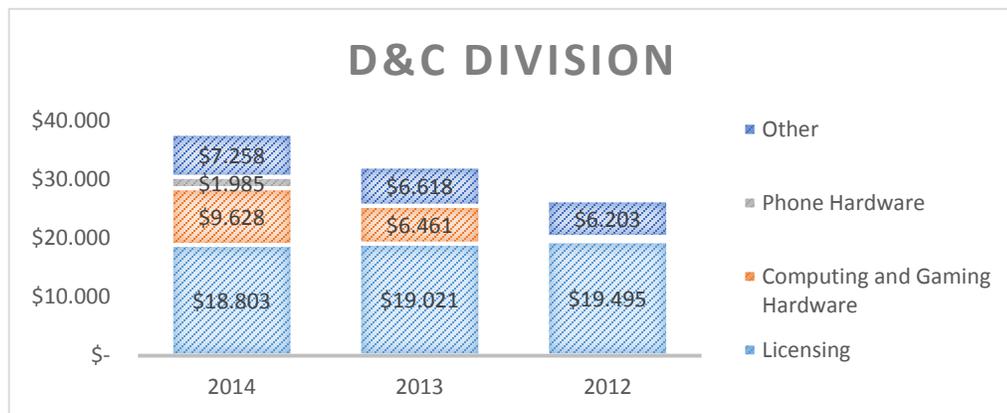


Figure 3: Devices and Consumer Sales Comparison (values in millions of US dollars)  
 Source: MICROSOFT'S Annual Reports

**D&C Other:** Inside this segment, the principal products/services are Resale (Windows Store and Windows Phone Store), search advertising (Bing), display advertising (Bing and Xbox ads), Office 365, Studios (first-party video games) and retail stores.

**Commercial:** Commercial is divided in two segments: Licensing, which includes server products, Microsoft Office (for business) and Others, composed by Enterprise services, Microsoft Azure and Commercial Cloud.



Figure 4: Commercial Sales Comparison (values in millions of US dollars)  
Source: MICROSOFT’S Annual Reports

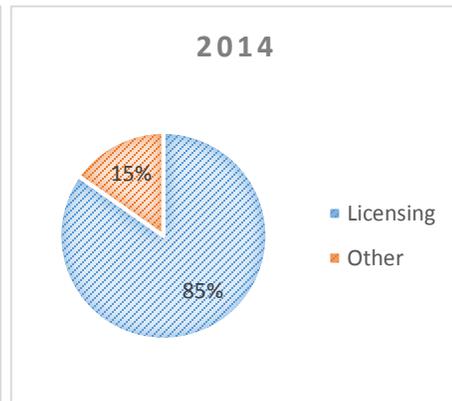


Figure 5: Commercial Sales Comparison  
Source: MICROSOFT’S Annual Reports

Microsoft has, through the years, evolved from a software making company to a multipurpose company that can control every detail of their product, starting with software and ending in the hardware.

### 3.1.2 – Microsoft Competitors

Microsoft operates in many segments, from services in the cloud to phones. Because of that, it has to take into account actions that their competitors make, as a measure to promote continuous growth and innovation. The biggest competitors are Google, Apple, Sony, Nintendo, Samsung, IBM and Oracle. The next table justifies in which segments each of the competitor is active and affects Microsoft’s position:

Competitor	Threat	Segments
<b>Google</b>	Productivity suite (threat to Microsoft Office and Office Commercial); Android (Windows Phone); Google (Bing and advertising); Google Play (Stores); Hangouts (Skype)	D&C Licensing; D&C Other; Commercial
<b>Apple</b>	iWork (Microsoft Office and Office Commercial);	D&C Licensing;

	IOS and iPhone (Windows Phone); App Store (Stores); iWork Cloud (Office 365)	D&C Other; Phone
<b>Sony</b>	PlayStation (Xbox)	Gaming Hardware
<b>Samsung</b>	Smartphones (Windows Phone)	D&C Licensing; Phone Hardware
<b>IBM</b>	Server OS and application; Java; System management solutions; Productivity Suite (Office Commercial); Enterprise Services (Azure, Office 365)	Commercial
<b>Oracle</b>	Server OS and application; Java; System management solutions; Productivity Suite (Office Commercial); Enterprise Services (Azure, Office 365)	Commercial

Table I – Microsoft’s Competitors  
Source: Author

### 3.2 – Nokia

Nokia began its operations as a paper mill in 1865, owned by Fredrik Idestam, and based in Finland. From that date onwards, it has been reinventing itself and broadening its range of operations. Throughout the years, Nokia has been part of the following sectors: cables, paper products, tires, rubber boots, consumer and industrial electronics, plastics, chemicals and telecommunications infrastructure. Only in 1960 did Nokia enter in the telecommunications sector, focusing on the production of radio transmission equipment. In 1982, the world changing Nokia begins, as it launches the first digital local telephone exchange and the world’s first car phone. From that moment on, Nokia became a telecommunications company, world leader for more than a decade.

In the period between 2006 and 2011, Nokia reinvented itself multiple times: in 2006, it acquired GATE5 and NAVTEQ (2008), becoming a market leader in the navigation software; in 2007, it joined Siemens, becoming a leading global provider of telecom infrastructure and services and lastly, in 2011, it joined Microsoft to strengthen its position in the ruthless smartphone market. This partnership led to the sale, in 2013, of the Devices & Services business from Nokia to Microsoft.

Nowadays, Nokia continues to pursue its main purpose (to be able to “connect people”) even though this recent restructuring changed the core business. Nokia is now focused in three main areas: Nokia Networks, HERE and Nokia Technologies, which will be described in the next sub-section.

### 3.2.1 – Nokia Operating Segments

In 2014, Nokia is divided in 4 main segments: Nokia Networks, HERE, Nokia Technologies (as stated previously) and Discontinued Operations.

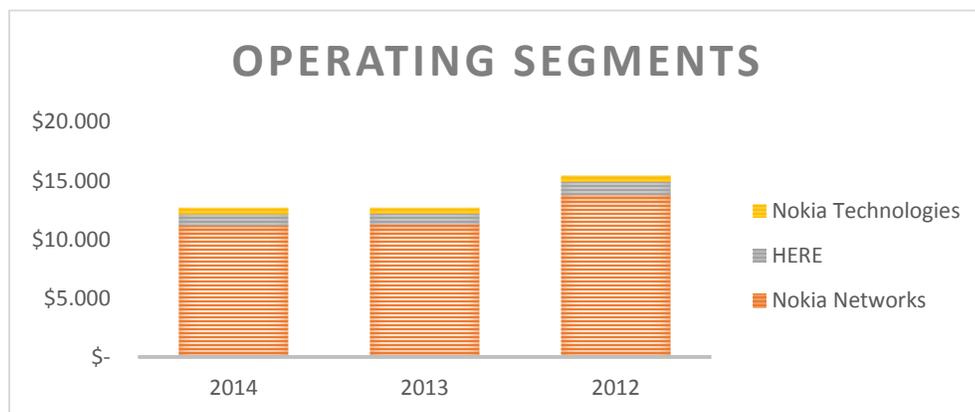


Figure 6: Operating Segments Sales Comparison (values in millions of US dollars)  
 Source: NOKIA Annual Reports

**Nokia Networks:** Nokia’s portfolio in this segment ranges from hardware components, used by mobile operators (base stations) to software solutions, which are used to support

mobile networks (software used by operators like Vodafone to run their business). Nokia Networks has a strong position in all generations of radio technologies (2G, 3G and 4G) and has businesses in approximately 110 countries, throughout all continents. This segment is decomposed into two others: Mobile Broadband and Global Services.

Mobile Broadband provides flexible network solutions for mobile and voice data by using its radio and core clusters. Besides that, this segment also provides cloud computing, analytics, big data and multimedia content solutions.

Global Services comprises five different business lines: **Network Implementation**, which provides customers with the services to create or expand their communications network; **Care Business** does maintenance of hardware and software and provides training; **Managed Services** is responsible for helping clients manage services lifecycles and enhance subscribers' experience; **Network Planning and Optimization** offer solutions related with performance, consistency and reliability improvements. Lastly, **Global Services' System Integration** ensures that all elements of a mobile broadband solution are brought together seamlessly.

**HERE:** HERE is the leading company in the location industry, as it is able to deliver highly precise and updated maps, location platform and experiences across multiple operating systems. HERE offers maps for more than 190 countries, in more than 50 different languages. Different industry leaders in areas such as automotive, mobile, internet or consumer electronics use HERE. The most significant acquisitions in this segment are two: Gate5 acquisition in 2006 and NAVTEQ in 2008. This, associated with Nokia's innovative mentality, allowed sustaining Nokia's market share, and evolve its maps from a static two-dimensional to a dynamic three-dimensional digital representation of the world.

**Nokia Technologies:** This segment of operations is responsible for developing and licensing technologies. Nokia creates value by licensing these patents to other organizations, helping them grow. Its innovations help shaping fundamental technologies used nowadays in wireless communications. This area was created after the sale of the Devices and Services segment and some patents were included in the deal with Microsoft.

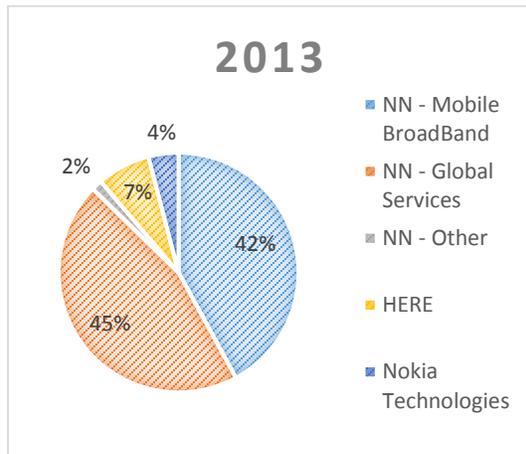


Figure 7: Operating Segments Sales Comparison 2013  
Source: NOKIA Annual Reports

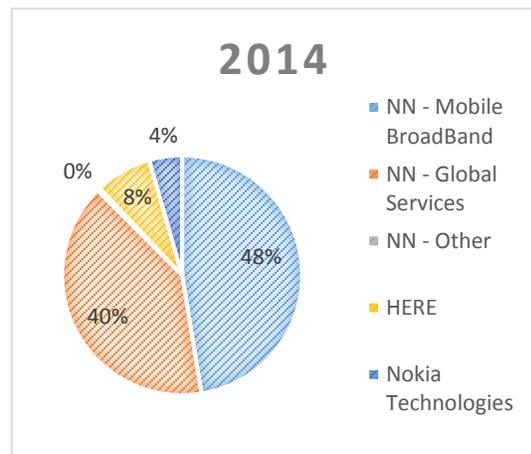


Figure 8: Operating Segments Sales Comparison 2014  
Source: NOKIA Annual Reports

**Discontinued Operations:** Included inside this segment is the division sold to Microsoft, which comprehended the business of selling mobile phones. It was divided in two different areas: **Mobile phones**, with the ultra-low cost, feature phones (usually based in the Nokia Asha software platform) and the **Smart Devices**, in charge for developing smartphones based on Microsoft's Windows Phone operating system.

### 3.2.2 – Nokia Competitors

**Nokia networks:** Alcatel-Lucent, Ericsson, Huawei, Samsung and ZTE – these five companies are major mobile network infrastructure providers and represent a threat to Nokia in that segment.

**HERE:** Google Maps, with its free, based on advertising and complete solution with Android and TomTom with its experience and client base (has Apple as one of its main clients) represent a threat to Nokia in the map/navigation segment.

**Nokia Technologies:** Relative to this segment, there is no specified competitor. Here, its main threats are alternative technologies / solutions that other companies (well established or startups) provide to the market.

#### **4. Performance of Microsoft and Nokia in the Stock Market**

Over the last few years, Stock Markets have been in a turmoil as a result of the financial crisis initiated 2007/2008. For that reason, we present a large interval of years in this analysis so we can assess, at some level, the crisis effect on the stock price. The timeline of this analysis will be comprehended between 30/06/2005 and 30/06/2015. Next, we will individually analyze its performance, following by a comparison with three of its main competitors.

##### **4.1 – Performance of Microsoft and Nokia**

Microsoft has been, over the years, presenting a continuous growth rate, except for the period between 2008 and 2009. It presents a cumulative annual growth rate (CAGR) of 5.8%, for the period in analysis, displaying an evolution from \$25.05 to \$44.15 (57% change), showing a positive trend.

Nokia's performance has not been as smooth as Microsoft's. Taking into account the last 10 years, one can see that after the financial crisis, Nokia had a disappointing performance. Its trend has a downward slope, decreasing from a \$16.94 quote to \$6.85 (91% change), explained by its negative CAGR (-8.66%).

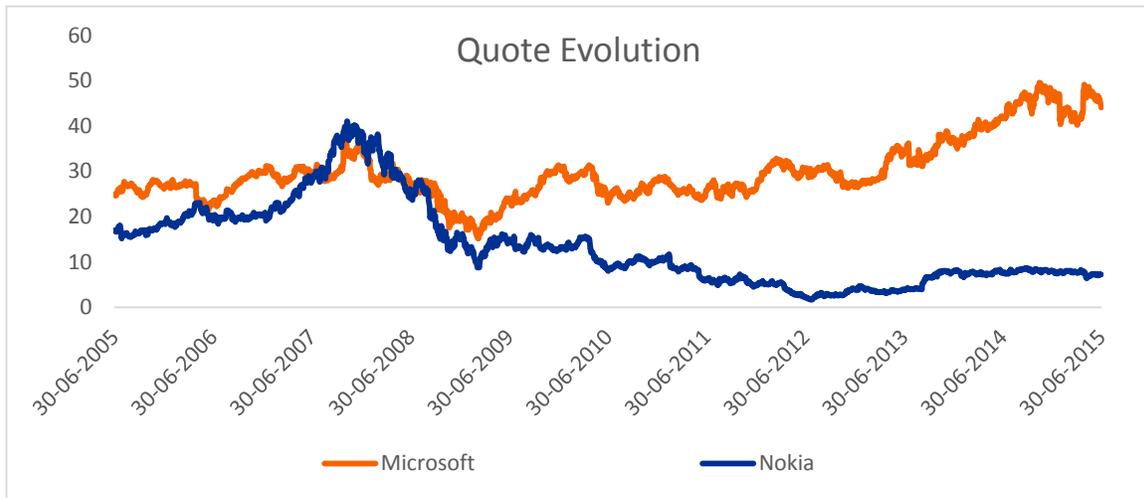


Figure 9: Microsoft (US dollars) and Nokia (Euro) Stock Price Evolution  
 Source: Bloomberg

### 4.2 – Stock Performance Comparison

In order to evaluate stock performance, it is important to compare its results with major competitors. For that reason, Samsung and Apple were taken into consideration and as we

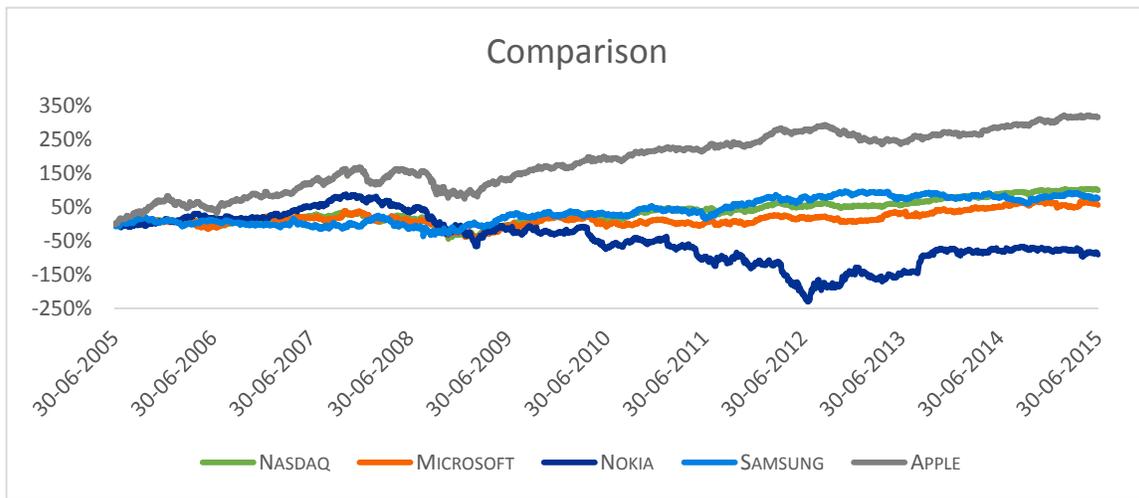


Figure 10: Performance Comparison between Microsoft, Nokia, Samsung, Apple and NASDAQ Computer Index  
 Source: Bloomberg

can see, taking 30/06/2005 as a base value, Microsoft has grown at the industry rate (NASDAQ index) while Nokia value has plunged in recent years.

## 5. Strategy

In this chapter, we will discuss the impact that the Nokia deal might have on Microsoft. As stated earlier, Microsoft is changing from a strictly-software company to a whole solution one. Satya Nadella vision for Microsoft include a “mobile-first, cloud-first world”, where one can not only have really portable devices but being able to have multiple devices that are all connected seamlessly. This vision is included in Microsoft’s newest OS, Windows 10. In Windows 10, Phones are a very important piece as they are part of a family of devices (from desktops, Xbox, wearables, etc.) Microsoft is betting their future on. Nadella’s vision does not differentiate between product segments as his goal is to have costumers using Microsoft tools, providing them an immersive experience, no matter in which platform they operate, either it is on iOS, Android, Windows or other. Apart from that, cloud services are also one of Microsoft opportunities for future growth. In the next point, we will perform a SWOT and 5 forces of Porter analysis of Microsoft and Nokia.

### 5.1 – Microsoft

#### 5.1.1 – SWOT Analysis

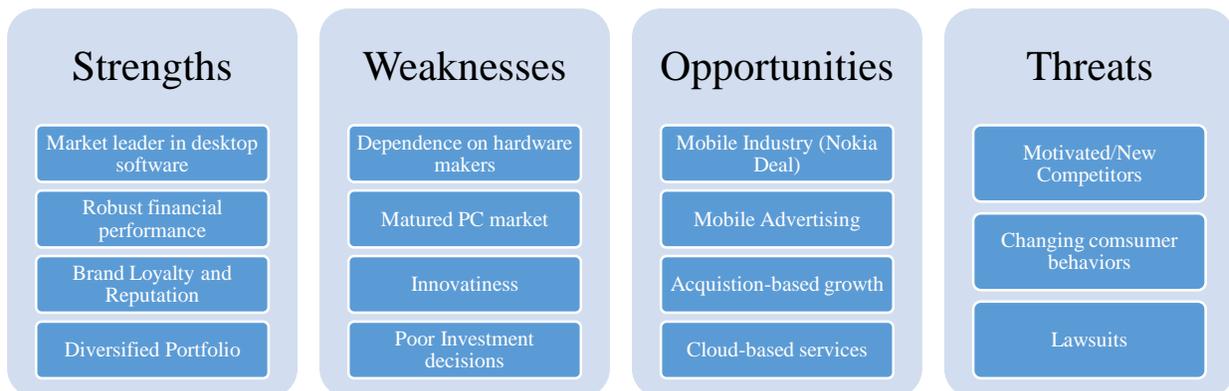


Figure 11: Microsoft SWOT  
Source: Author

#### 1. Strengths:

- a. As previously stated, Microsoft is the current market leader of desktop operating systems and productivity tools, dominating either the consumer or the professional segments with nearly 85% of market share.
- b. Over the past 10 years, Microsoft has registered a continuous growth in its major accounts (revenues, ebits, etc.), solidifying its position in the market and creating cash surplus of more than 96.5 thousand millions US dollars, which can be used for future investments.
- c. Microsoft brand is recognized all over the world and is a synonym of quality and innovation. This allowed Microsoft to be considered the 2<sup>nd</sup> most valuable brand in the world with a brand value of 69.3 thousand millions US dollars, according to Forbes<sup>2</sup>.
- d. Microsoft's product portfolio (from software to mobile phones) is one of its main strengths as it helps protect the company against a downturn in any segment or specific product.

## **2. Weaknesses**

- a. On most cases, Microsoft focus is on software and relies on partners to provide the hardware where it operates. This dependence leads to subpar products and potential bad experiences, which harm the brand and might led to the end of partnerships. As an example at the other end of the spectrum, we have Apple: it controls the entire process (from hardware to software).
- b. Recent years and forecast show us that the PC market has matured<sup>3</sup> and so future sales of the two biggest revenues generators, Windows and Office, are in jeopardy. Microsoft must bet in new segments, such as the mobile industry.

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<sup>2</sup> <http://www.forbes.com/powerful-brands/list/>

- c. Microsoft has been getting behind its major competitors (Apple, Samsung) regarding new products and services with innovative features. While competitors have been adding functionalities to their products (Apple Watch; SMART TV; mobile OS), Microsoft has not either been successful in its innovative products or even failed to launch a game-changer product.
- d. Related to the previous point, Microsoft has invested in different products and services but so far many of the investments have not paid back what was expected of them (Surface RT, Windows Phone, WebTV, among others).

### **3. Opportunities**

- a. The smartphone/tablet segment presents an amazing opportunity to Microsoft in terms of growth as it is expected, according to IDC, a combined CAGR of 14.61% between 2013 and 2017, representing 87% of all devices connected to the web<sup>4</sup>. Microsoft is strengthening its position in the market through acquisitions (Nokia) and development of tablets (Surface).
- b. Mobile advertising markets are expected to grow in double digits over the next few years and Microsoft has a great opportunity to tap into these markets with its mobile OS.
- c. Microsoft can use its cash reserves to develop faster competences and skills in segments it still does not lead. To do that, it can acquire other companies (start-ups or not).

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<sup>3</sup> <http://www.idc.com/getdoc.jsp?containerId=prUS25647315>

<http://www.statista.com/statistics/265878/global-shipments-of-pcs-tablets-ultra-mobiles-mobile-phones/>

<sup>4</sup> <http://www.forbes.com/sites/louiscolombus/2013/09/12/idc-87-of-connected-devices-by-2017-will-be-tablets-and-smartphones/>

- d. Worldwide demand for cloud computing services is expected to grow at a significant rate in upcoming years. Microsoft can seize this opportunity as it already has several unique advantages in this segment such as Windows Azure, Dynamic CRM or Office 365.

#### 4. Threats

- a. As any big company, Microsoft faces intense competition across all products and services categories. It has competitors in the Fortune 100 (Google, Apple, and Samsung) but also has many small companies as competitors, specialized in niche markets and open-source projects. This growing competitiveness may influence its market share and margins in the short term.
- b. Customers are shifting from laptops and standalone PCs to smartphones and tablets: markets where Microsoft has a small market share and may never establish itself.
- c. Microsoft's products often include new technologies which are subjected to regulations (often not clear) and the applications of these laws may involve high costs or changes to products (more costs), creating an adverse effect in the company's results.

#### 5.1.2 – 5 Forces of Porter

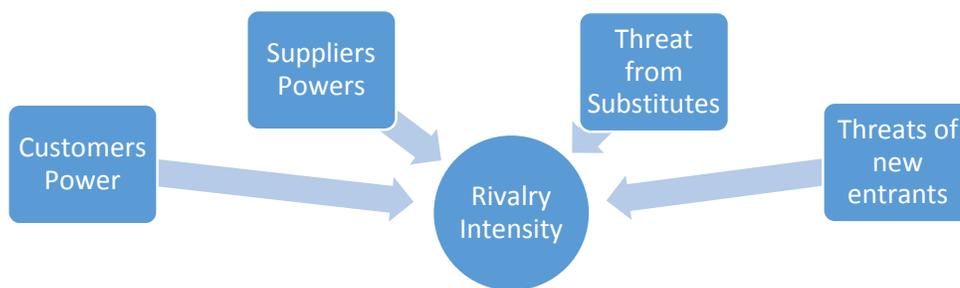


Figure 12: 5 Forces of Porter

Source: Porter, M.E. (1979) "How Competitive Forces Shape Strategy", *Harvard Business Review*, March/April 1979

**Threat of New entrants** is not substantial in the technology industry. This has to do with industry barriers that exist such as the immense investment or technological know-how.

Specifically in Microsoft's case, its global presence also gives it enormous advantages such as economies of scale (cost reduction) which proves to be a barrier to new entrants.

**Customer Power** is high, due to two main factors: price elasticity of Microsoft products and wide choice of similar products presented by competitors. Usually, changing from Microsoft's products to other does not have greater costs (this works in favor of its competitors), increasing customer power.

**Supplier Power** is considered low. There is an increasing number of suppliers across the globe and there are not that many clients with Microsoft's dimension. This combination of factors, allied to the low burden related to changing suppliers explain why supplier power has a low factor of importance.

**Threat from Substitutes** is high. Even though Microsoft tries to differentiate and present unique solutions, its competitors are, nowadays, presenting similar products at a fraction of the cost. Over the last years Microsoft has been losing marketshare for companies such as Apple, Google and Samsung, in different segments of the market<sup>5</sup>.

## 5.2 – Nokia SWOT Analysis

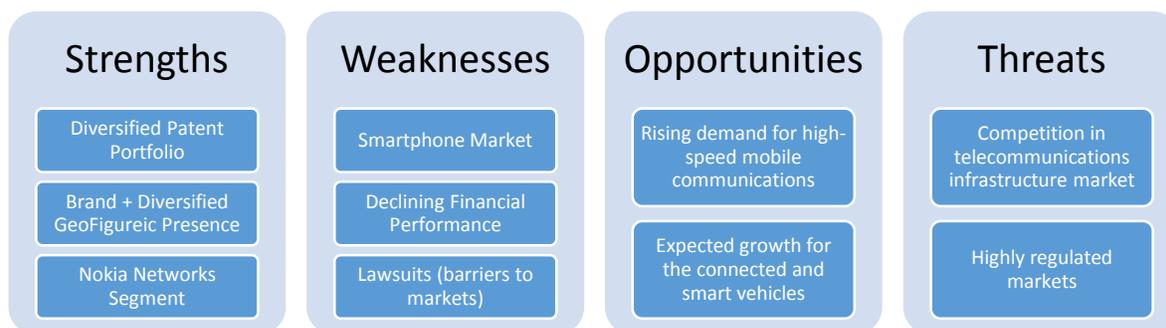


Figure 13: Nokia SWOT  
Source: Author

To see more about this analysis, please check appendix 5.

<sup>5</sup> <http://www.forbes.com/sites/adamhartung/2013/01/20/sell-microsoft-now-game-over-ballmer-loses/>

## 6. Valuation

### 6.1 – Valuation Assumptions

Assumptions	
Levered Beta	0.8212
D/E	10.36%
tax rate	26%
Risk Free Rate	2.35%
Market Return	12.95%
Market Premium	10.60%
RE – cost of equity	11.1%
RD – cost of debt	3.0%
E/ E+D	91%
D/ E+D	9%
WACC	10.23%
Perpetuity growth rate	2.60%

Table II - Assumptions  
Source: Author

Under the FCFF methodology, explained in detail in the previous literature review, cash flows are to be discounted at the WACC. To be able to do so, assumptions about the sector and company were made. First, we considered the U.S. 10-year government bond as a good proxy for the risk-free interest rate, with a yield of 2.35%, according to Bloomberg (appendix 11). Microsoft's  $\beta$  was calculated using the S&P 500 index and Microsoft's stocks returns (0.7998) and also has been given a weight to its new operating segment, using Nokia's  $\beta$ , reaching a  $\beta$  of 0.8212. Other items that were also calculated include cost of debt (calculating the weighted average interest rate of all debt), cost of equity market premium (difference between the U.S. bond yield and average 10-year return of NASDAQ Computer Index). For rationality reasons, all the data was collected with the 30/06/2015 date.

Regarding WACC computations, we still need the Equity and Debt value. Equity market value or Market Capitalization was computed by multiplying the number of shares

outstanding by the stock price at 30/06/2015. For the Debt value, we transformed the book value of debt to a “one-coupon bond, where the coupon equal the interest expenses on all the debt”<sup>6</sup> (Damodaran, 2012).

### **6.1.1 – Forecasting**

To compute the forecasts for both the Income Statement and Balance Sheet (BS), we need a realistic growth rate. For the growth of the Balance Sheet, a yearly variation since 2008 to 2014 was computed in order to estimate growth for each rubric. In the BS, a search for outliers was done in order to keep the sum of total assets equal to shareholder’s equity plus total liabilities. As to the growth of the items of the IS and in order to take into account the inclusion of previous Nokia’s segment of phones, financial forecasts regarding revenue growth have been taken into consideration (from different sources such as NASDAQ, Financial Times, Bloomberg). For that reason, on the 1<sup>st</sup> year of forecast we took into account the 2008-2015 growth rate and from that moment on used the information retrieved from other sources, in order to adjust to market expectations. For further information, please see appendix 1 and 2.

### **6.2 – FCFF Method**

The methodology used to value this deal and consequently Microsoft as a whole was the DCF model, computing the FCFF and the correspondent WACC rate. Moreover, a multiples valuation was performed, in order to compare Microsoft with its main competitors.

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<sup>6</sup> [http://pages.stern.nyu.edu/~adamodar/New\\_Home\\_Page/valquestions/mktvalofdebt.htm](http://pages.stern.nyu.edu/~adamodar/New_Home_Page/valquestions/mktvalofdebt.htm)

### 6.2.1 – FCFF Valuation

As stated in the literature review, this method is one of the most reliable and is correct to use as it is assumed Microsoft's D/E ratio does not have major fluctuations. In order to compute the WACC, we retrieved data from the NASDAQ Computer Index and reached a cost of equity ( $K_e$ ) of 11.1% (using equation 6) and a WACC of 10.23% (using equation 3). We opted for a constant WACC as we assume that Microsoft will not have substantial investments in following years and as solid financial position regarding its debt and generating revenue. Regarding growth and taking into account the sector Microsoft operates, experts assume a growth rate of 8%. Following the steps of this methodology, the next goal was to obtain the residual value. The data needed to compute this (according to equation 6) is in the following table and the value obtained is of \$500,048.43M:

$FCFF_{2021}$	\$38,150.03
(1+g)	1.026
WACC-g	10.23% – 2.6% = 7.63%

Table III – Residual Value Data  
Source: Author (values in millions of US dollars)

Having computed the residual value and the FCFF's for the period between 2015-2021 one can now calculate the Enterprise Value (EV) (equation 13):

30/06/2015	
<b><u>Enterprise Value</u></b>	<b><u>\$ 397,950.02</u></b>
Cash	\$ 5,595.00
<b><u>Firm Value</u></b>	<b><u>\$ 403,545.02</u></b>

Table IV – Enterprise Value and Equity Value  
Source: Author (values in millions of US dollars)

30/06/2015	
Market-Value Debt	\$ 37,386.69
Non-Operating Assets	\$ -
Minority Interests	\$ -
<b><u>Equity value</u></b>	<b><u>\$ 366,158.33</u></b>

After reaching Equity value, we must now compute the Price target (equation 9):

30/06/2015	
Market Capitalization	\$ 361,014.55
Last Price	\$ 44.15
Shares Outstanding	8,254M
Price target	\$ 44.36

Table V – Price Target

Source: Author (values in millions of US dollars except for price target and shares outstanding)

For more details about the computations, see appendix 6.

### 6.2.2 –Sensitivity analysis

The objective of this segment is to test the robustness of the assumptions made in this valuation. Our analysis relied on three main parameters:  $\beta$ , WACC and the perpetuity growth rate ( $g$ ). The WACC and the growth rate are expected to have large effects on the valuation since they are considered two of most important input factors. The estimation of these two inputs is considered extremely difficult. As expected, the Price target is more sensitive to changes in WACC (a 1% drop leads to an increase over 20%). As for the perpetual growth rate, the effects are similar but at a lower extent, considering an interval of possible values from 0% to 5%.

Price target:		g						
\$44,36		0,00%	1,00%	2,00%	2,60%	3,00%	4,00%	5,00%
WACC	9,00%	\$41,80	\$45,63	\$50,55	\$54,24	\$57,12	\$66,30	\$80,08
	10,00%	\$36,79	\$39,69	\$43,31	\$45,95	\$47,97	\$54,18	\$62,88
	10,23%	\$35,78	\$38,51	\$41,90	\$44,36	\$46,23	\$51,95	\$59,86
	11,00%	\$32,70	\$34,94	\$37,69	\$39,65	\$41,12	\$45,54	\$51,42
	12,00%	\$29,31	\$31,08	\$33,21	\$34,70	\$35,81	\$39,06	\$43,24

Table VI – Stock price sensitivity to changes on WACC and g  
Source: Author

Changes to  $\beta$  generate small deviations in the price target of Microsoft, revealing some robustness to this input. Even a 7% change in  $\beta$  is not enough to produce an 8% adjustment to the price target.

### 6.2.3 – Synergies

In order to calculate the synergies associated with this deal, we should compute the Equity Value for Microsoft (as a combined firm) and compare it with the Equity Value of Microsoft (pre-deal) and Phones segment. Here, we followed a similar methodology for the Microsoft and Phones segment to the one used when forecasting Microsoft (as a combined firm) financial statements.

Equity Value	
Microsoft (A)	\$ 346,648.99
Phones (B)	\$ 11,236.71
(A)+(B)	\$ 357,885.69
Price target	\$ 43.36

Table VII – Equity Value  
Source: Author (values in millions of US dollars except for price target)

The sum of the individual business have been valued at \$43.36, below Microsoft's share price of \$44.36.

Synergies	
Combined Firm ( C)	\$ 368,158.33
(A)+(B)	\$ 357,885.69
Synergies	\$ 8,272.64
per share	\$ 1.00

Table VIII - Synergies  
Source: Author values in millions of US dollars except for per share price)

According to the review presented earlier, synergies can be estimated from the difference between the value of the merged company C and the sum of separate entities A and B. In this case, we reached a total value of synergies of \$8,272.64 or \$1 in per share value.

### 6.3 – Relative Valuation

In this section, our focus is on Relative Valuation. The following companies will be used as benchmark: Nokia, Samsung and Apple. Each of these key players represent a competitor to Microsoft (in either Networks, Phones or Personal Computers). The next table compares Microsoft's multiples, given our valuation of a price target of \$44.36, against the average of the other companies:

Companies	P/E	P/Sales	PBV	EV/EBITDA	EV/EBIT	EV/S	PRICE/FCF
Microsoft	30.03	3.91	4.57	19.99	21.91	4.25	25.13
Competitors	15.73	2.42	3.38	15.38	35.57	1.93	16.16

Table IX - Multiples  
Source: Bloomberg and Author

For most of the chosen multiples, Microsoft appears overvalued regarding this set of competitors. This is true for the DCF valuation of Microsoft presented in this project, but is also true for the current market value of the company, since our price target is close to the current market price. We can then infer that investors are open to pay a premium for Microsoft stocks in order to secure future income.

Another possibility is to use the market value of the multiples and compute a hypothetical price target for Microsoft. The following table summarizes those computations:

<b>Multiples</b>	<b>Microsoft Price Target (Relative Valuation)</b>	<b>Microsoft Price Target (DCF Model of Chapter 6)</b>	<b>%</b>
<b>P/BV</b>	\$32.77	\$44.36	30.3%
<b>EV/EBITDA</b>	\$37.08	\$48.21	26.3%
<b>EV/Sales</b>	\$21.82	\$48.21	79.3%

Table X – Valuation Comparison  
Source: Author and Bloomberg

The results obtained show that, regarding its competitors, Microsoft valuation (performed with FCFF method) is above market valuation. For more details, see appendix 12.

## 7. Conclusion

Throughout this MFW is clear that Microsoft is a relevant company in the technology industry, either due to its history as the creator of the most used OS<sup>7</sup> and productivity tool (MS Office) around the world. However, the constant technological changes and competition challenged Microsoft to pursue new markets, namely the mobile industry. The deal between Microsoft and Nokia allowed this new business model, generating huge synergies to Microsoft due to Nokia's hardware knowledge, patents and distribution setup. Microsoft is going through a revolution, where recent news denote a change in the company from a "devices and services" to a "mobile-first, cloud first" company. The new company is now in better position to face other giants such as Apple, Samsung or even Google.

Since 2005, Microsoft shares increased 56.67%, below their competitors that presented growths of 300% (Apple) or 76% (Samsung). Still, Microsoft presents solid results year after year and is considered a solid investment due to its innovative capabilities. Regarding its valuation, DCF analysis reached a value of \$44.36 per share or \$366,158.33M of and Relative Valuation results conclude that our valuation is above market expectations (up to 79.3%). Concerning synergies obtained from the deal, our approach obtained synergies gains of \$1.00 per share or \$8,272.64M.

Microsoft is now ready to face the competition, being able to add value in areas where its expertise where short and present consumers with an end-to-end solution, in accordance with Microsoft standards.

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<sup>7</sup> <https://www.netmarketshare.com/operating-system-market-share.aspx?qprid=10&qpcustomd=0>

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## 9. Appendix

### Appendix 1 – Microsoft Income Statements

Year Ended June 30,	2008	2009	2010	2011	2012	2013	2014
<b>(USD, in millions, except per share amounts)</b>							
<b>Revenue</b>	<b>\$60,420</b>	<b>\$58,437</b>	<b>\$62,484</b>	<b>\$69,943</b>	<b>\$73,723</b>	<b>\$77,849</b>	<b>\$86,833</b>
<b>Devices and Consumer</b>	<b>\$-</b>	<b>\$-</b>	<b>\$-</b>	<b>\$-</b>	<b>\$32,438</b>	<b>\$32,100</b>	<b>\$37,674</b>
Licensing					\$19,495	\$19,021	\$18,803
Hardware:	\$-	\$-	\$-	\$-	\$6,740	\$6,461	\$11,613
<i>Computing and Gaming</i>					\$6,740	\$6,461	\$9,628
<i>Phone</i>					\$-	\$-	\$1,985
Other					\$6,203	\$6,618	\$7,258
<b>Commercial</b>	<b>\$-</b>	<b>\$-</b>	<b>\$-</b>	<b>\$-</b>	<b>\$41,770</b>	<b>\$45,346</b>	<b>\$49,574</b>
Licensing					\$37,126	\$39,686	\$42,027
Other					\$4,644	\$5,660	\$7,547
<b>Corporate</b>					<b>\$-485</b>	<b>\$403</b>	<b>\$-415</b>
Cost of revenue	\$11,598	\$12,155	\$12,395	\$15,577	\$17,530	\$20,249	\$26,934
Depreciations and Amortization	\$2,056	\$2,562	\$2,673	\$2,766	\$2,967	\$3,755	\$5,212
Cost of Revenue ( D&A not included)	\$9,542	\$9,593	\$9,722	\$12,811	\$14,563	\$16,494	\$21,722
Gross margin	\$48,822	\$46,282	\$50,089	\$54,366	\$56,193	\$57,600	\$59,899
Research and development	\$8,164	\$9,010	\$8,714	\$9,043	\$9,811	\$10,411	\$11,381
Sales and marketing	\$13,260	\$12,879	\$13,214	\$13,940	\$13,857	\$15,276	\$15,811
General and administrative	\$5,127	\$4,030	\$4,063	\$4,222	\$4,569	\$5,149	\$4,821
Goodwill impairment					\$6,193	\$-	\$-
Integration and restructuring					\$-	\$-	\$127
<b>Total operating expenses</b>	<b>\$38,149</b>	<b>\$38,074</b>	<b>\$38,386</b>	<b>\$42,782</b>	<b>\$51,960</b>	<b>\$51,085</b>	<b>\$59,074</b>
<b>EBITDA</b>	<b>\$24,327</b>	<b>\$22,925</b>	<b>\$26,771</b>	<b>\$29,927</b>	<b>\$24,730</b>	<b>\$30,519</b>	<b>\$32,971</b>
Depreciations and Amortization	\$2,056	\$2,562	\$2,673	\$2,766	\$2,967	\$3,755	\$5,212
<b>Operating income (EBIT)</b>	<b>\$22,271</b>	<b>\$20,363</b>	<b>\$24,098</b>	<b>\$27,161</b>	<b>\$21,763</b>	<b>\$26,764</b>	<b>\$27,759</b>
Other income net	\$1,543	\$-542	\$915	\$910	\$504	\$288	\$61
<b>Income before Income Taxes (EBT)</b>	<b>\$23,814</b>	<b>\$19,821</b>	<b>\$25,013</b>	<b>\$28,071</b>	<b>\$22,267</b>	<b>\$27,052</b>	<b>\$27,820</b>
Provision for income taxes	\$6,133	\$5,252	\$6,253	\$4,921	\$5,289	\$5,189	\$5,746
Effective corporate tax rate	26%	26%	25%	18%	24%	19%	21%
<b>Net income</b>	<b>\$17,681</b>	<b>\$14,569</b>	<b>\$18,760</b>	<b>\$23,150</b>	<b>\$16,978</b>	<b>\$21,863</b>	<b>\$22,074</b>

Year Ended June 30,	2015F	2016F	2017F	2018F	2019F	2020F	2021F
<b>(USD, in millions, except per share amounts)</b>							
<b>Revenue</b>	<b>\$93,580</b>	<b>\$98,148.13</b>	<b>\$105,999.98</b>	<b>\$114,479.97</b>	<b>\$123,638.37</b>	<b>\$132,911.25</b>	<b>\$142,879.59</b>
<b>Devices and Consumer</b>	<b>\$41,501</b>	<b>\$43,707.82</b>	<b>\$47,204.45</b>	<b>\$50,980.80</b>	<b>\$55,059.27</b>	<b>\$59,188.71</b>	<b>\$63,627.86</b>

Year Ended June 30,	2015F	2016F	2017F	2018F	2019F	2020F	2021F
<b>(USD, in millions, except per share amounts)</b>							
Licensing	\$14,969	\$15,764.98	\$17,026.18	\$18,388.27	\$19,859.33	\$21,348.78	\$22,949.94
Hardware:	\$17,707	\$18,648.57	\$20,140.46	\$21,751.69	\$23,491.83	\$25,253.72	\$27,147.75
<i>Computing and Gaming</i>	\$10,183	\$10,724.48	\$11,582.44	\$12,509.04	\$13,509.76	\$14,522.99	\$15,612.21
<i>Phone</i>	\$7,524	\$7,924.09	\$8,558.02	\$9,242.66	\$9,982.07	\$10,730.73	\$11,535.53
Other	\$8,825	\$9,294.27	\$10,037.81	\$10,840.84	\$11,708.10	\$12,586.21	\$13,530.18
<b>Commercial</b>	<b>\$51,875</b>	<b>\$54,633.46</b>	<b>\$59,004.14</b>	<b>\$63,724.47</b>	<b>\$68,822.42</b>	<b>\$73,984.10</b>	<b>\$79,532.91</b>
Licensing	\$41,039	\$43,221.25	\$46,678.95	\$50,413.27	\$54,446.33	\$58,529.81	\$62,919.54
Other	\$10,836	\$11,412.21	\$12,325.18	\$13,311.20	\$14,376.09	\$15,454.30	\$16,613.37
<b>Corporate</b>	<b>\$204</b>	<b>-\$193.15</b>	<b>-\$208.60</b>	<b>-\$225.29</b>	<b>-\$243.32</b>	<b>-\$261.56</b>	<b>-\$281.18</b>
Cost of revenue	\$33,038	\$34,794.80	\$37,578.38	\$40,584.65	\$43,831.43	\$47,118.78	\$50,652.69
Depreciations and Amortization	\$1,742	\$1,834.63	\$1,981.40	\$2,139.91	\$2,311.11	\$2,484.44	\$2,670.77
Cost of Revenue ( D&A not included)	\$31,296	\$32,960.17	\$35,596.98	\$38,444.74	\$41,520.32	\$44,634.34	\$47,981.92
Gross margin	\$60,542	\$63,353.33	\$68,421.59	\$73,895.32	\$79,806.95	\$85,792.47	\$92,226.90
Research and development	\$12,046	\$12,686.55	\$13,701.47	\$14,797.59	\$15,981.40	\$17,180	\$18,468.50
Sales and marketing	\$15,713	\$16,548.54	\$17,872.42	\$19,302.22	\$20,846.39	\$22,409.87	\$24,090.62
General and administrative	\$4,611	\$4,856.19	\$5,244.69	\$5,664.26	\$6,117.40	\$6,576.21	\$7,069.42
Goodwill impairment	\$-	\$-	\$-	\$-	\$-	\$-	\$-
Integration and restructuring	\$10,011		\$-	\$-	\$-	\$-	\$-
<b>Total operating expenses</b>	<b>\$75,419</b>	<b>\$68,886.08</b>	<b>\$74,396.96</b>	<b>\$80,348.72</b>	<b>\$86,776.62</b>	<b>\$93,284.86</b>	<b>\$100,281.23</b>
<b>EBITDA</b>	<b>\$19,903</b>	<b>\$31,096.68</b>	<b>\$33,584.41</b>	<b>\$36,271.17</b>	<b>\$39,172.86</b>	<b>\$42,110.83</b>	<b>\$45,269.14</b>
Depreciations and Amortization	\$1,742	\$1,834.63	\$1,981.40	\$2,139.91	\$2,311.11	\$2,484.44	\$2,670.77
<b>Operating income (EBIT)</b>	<b>\$18,161</b>	<b>\$29,262.05</b>	<b>\$31,603.01</b>	<b>\$34,131.25</b>	<b>\$36,861.75</b>	<b>\$39,626.39</b>	<b>\$42,598.36</b>
Other income net	\$346	\$364.40	\$393.55	\$425.03	\$459.04	\$493.47	\$530.47
<b>Income before Income Taxes (EBT)</b>	<b>\$18,507</b>	<b>\$29,626.45</b>	<b>\$31,996.56</b>	<b>\$34,556.29</b>	<b>\$37,320.79</b>	<b>\$40,119.85</b>	<b>\$43,128.84</b>
Provision for income taxes	\$6,314	\$7,956.48	\$8,593	\$9,280.44	\$10,022.87	\$10,774.59	\$11,582.68
Effective corporate tax rate	34%	27%	27%	27%	27%	27%	27%
<b>Net income</b>	<b>\$12,193</b>	<b>\$21,669.97</b>	<b>\$23,403.57</b>	<b>\$25,275.85</b>	<b>\$27,297.92</b>	<b>\$29,345.26</b>	<b>\$31,546.16</b>

## Appendix 2 – Microsoft Balance Sheet

Year Ended June 30,	2008	2009	2010	2011	2012	2013	2014
<b>(USD, in millions, except per share amounts)</b>							
<b>Assets</b>							
Current assets:							
Cash and cash equivalents	\$10,339	\$6,076	\$5,505	\$9,610	\$6,938	\$3,804	\$8,669
Short-term investments	\$13,323	\$25,371	\$31,283	\$43,162	\$56,102	\$73,218	\$77,040
Total cash equivalents and short-term investments	\$23,662	\$31,447	\$36,788	\$52,772	\$63,040	\$77,022	\$85,709
Accounts receivable net of allowance for doubtful accounts	\$13,589	\$11,192	\$13,014	\$14,987	\$15,780	\$17,486	\$19,544
Inventories	\$985	\$717	\$740	\$1,372	\$1,137	\$1,938	\$2,660
Deferred income taxes	\$2,017	\$2,213	\$2,184	\$2,467	\$2,035	\$1,632	\$1,941
Other	\$2,989	\$3,711	\$2,950	\$3,320	\$3,092	\$3,388	\$4,392
<b>Total current assets</b>	<b>\$43,242</b>	<b>\$49,280</b>	<b>\$55,676</b>	<b>\$74,918</b>	<b>\$85,084</b>	<b>\$101,466</b>	<b>\$114,246</b>
Property and equipment net of accumulated depreciation	\$6,242	\$7,535	\$7,630	\$8,162	\$8,269	\$9,991	\$13,011
Equity and other investments	\$6,588	\$4,933	\$7,754	\$10,865	\$9,776	\$10,844	\$14,597
Goodwill	\$12,108	\$12,503	\$12,394	\$12,581	\$13,452	\$14,655	\$20,127
Intangible assets net	\$1,973	\$1,759	\$1,158	\$744	\$3,170	\$3,083	\$6,981
Deferred income taxes	\$949	\$279	\$-	\$-	\$-	\$-	\$-
Other long-term assets	\$1,691	\$1,599	\$1,501	\$1,434	\$1,520	\$2,392	\$3,422
<b>Total assets</b>	<b>\$72,793</b>	<b>\$77,888</b>	<b>\$86,113</b>	<b>\$108,704</b>	<b>\$121,271</b>	<b>\$142,431</b>	<b>\$172,384</b>
<b>Liabilities and stockholders' equity</b>							
Current liabilities:							
Accounts payable	\$4,034	\$3,324	\$4,025	\$4,197	\$4,175	\$4,828	\$7,432
Short-term debt	\$-	\$2,000	\$1,000	\$-	\$1,231	\$-	\$2,000
Current portion of long-term debt	\$-	\$3,156	\$3,283	\$3,575	\$3,875	\$2,999	\$-
Accrued compensation	\$2,934	\$725	\$1,074	\$580	\$789	\$4,117	\$4,797

Year Ended June 30,	2008	2009	2010	2011	2012	2013	2014
<b>(USD, in millions, except per share amounts)</b>							
Income taxes	\$3,248	\$13,003	\$13,652	\$15,722	\$18,653	\$592	\$782
Short-term unearned revenue	\$13,397	\$1,684	\$182	\$1,208	\$814	\$20,639	\$23,150
Securities lending payable	\$2,614	\$3,142	\$2,931	\$3,492	\$3,151	\$645	\$558
Other	\$3,659					\$3,597	\$6,906
<b>Total current liabilities</b>	<b>\$29,886</b>	<b>\$27,034</b>	<b>\$26,147</b>	<b>\$28,774</b>	<b>\$32,688</b>	<b>\$37,417</b>	<b>\$45,625</b>
Long-term debt		\$3,746	\$4,939	\$11,921	\$10,713	\$12,601	\$20,645
Long-term unearned revenue	\$1,900	\$1,281	\$1,178	\$1,398	\$1,406	\$1,760	\$2,008
Deferred income taxes		\$-	\$229	\$1,456	\$1,893	\$1,709	\$2,728
Other long-term liabilities	\$4,721	\$6,269	\$7,445	\$8,072	\$8,208	\$10,000	\$11,594
<b>Total non-current liabilities</b>	<b>\$6,621</b>	<b>\$11,296</b>	<b>\$13,791</b>	<b>\$22,847</b>	<b>\$22,220</b>	<b>\$26,070</b>	<b>\$36,975</b>
<b>Total liabilities</b>	<b>\$36,507</b>	<b>\$38,330</b>	<b>\$39,938</b>	<b>\$51,621</b>	<b>\$54,908</b>	<b>\$63,487</b>	<b>\$82,600</b>
Stockholders' equity:							
Common stock and paid-in capital	\$62,849	\$62,382	\$62,856	\$63,415	\$65,797	\$67,306	\$68,366
Retained earnings	\$-26,563	\$-22,824	\$-16,681	\$-6,332	\$566	\$9,895	\$17,710
Accumulated other comprehensive income						\$1,743	\$3,708
<b>Total stockholders' equity</b>	<b>\$36,286</b>	<b>\$39,558</b>	<b>\$46,175</b>	<b>\$57,083</b>	<b>\$66,363</b>	<b>\$78,944</b>	<b>\$89,784</b>
<b>Total liabilities and stockholders' equity</b>	<b>\$72,793</b>	<b>\$77,888</b>	<b>\$86,113</b>	<b>\$108,704</b>	<b>\$121,271</b>	<b>\$142,431</b>	<b>\$172,384</b>

Year Ended June 30,	2015F	2016F	2017F	2018F	2019F	2020F	2021F
<b>(USD, in millions, except per share amounts)</b>							
<b>Assets</b>							
Current assets:							
Cash and cash equivalents	\$5,595	\$5,182	\$4,799	\$4,444	\$4,116	\$3,812	\$3,530
Short-term investments	\$90,931	\$102,849	\$116,328	\$131,575	\$148,819	\$168,324	\$190,385
Total cash equivalents and short-term investments	\$96,526	\$108,030	\$121,127	\$136,019	\$152,935	\$172,136	\$193,915

Year Ended June 30,	2015F	2016F	2017F	2018F	2019F	2020F	2021F
<b>(USD, in millions, except per share amounts)</b>							
Accounts receivable net							
of allowance for doubtful	\$17,908	\$18,537	\$19,187	\$19,861	\$20,558	\$21,279	\$22,026
accounts							
Inventories	\$2,902	\$3,303	\$3,759	\$4,279	\$4,870	\$5,543	\$6,309
Deferred income taxes	\$1,915	\$1,903	\$1,890	\$1,878	\$1,866	\$1,854	\$1,842
Other	\$5,461	\$5,888	\$6,349	\$6,846	\$7,382	\$7,959	\$8,582
<b>Total current assets</b>	<b>\$124,712</b>	<b>\$137,661</b>	<b>\$152,313</b>	<b>\$168,882</b>	<b>\$187,610</b>	<b>\$208,771</b>	<b>\$232,674</b>
Property and equipment net of							
accumulated depreciation	\$14,731	\$16,400	\$18,258	\$20,327	\$22,630	\$25,194	\$28,049
Equity and other investments	\$12,053	\$12,998	\$14,018	\$15,117	\$16,303	\$17,582	\$18,961
Goodwill	\$16,939	\$17,665	\$18,420	\$19,210	\$20,034	\$20,892	\$21,788
Intangible assets net	\$4,835	\$5,408	\$6,049	\$6,767	\$7,569	\$8,466	\$9,470
Deferred income taxes		\$-	\$-	\$-	\$-	\$-	\$-
Other long-term assets	\$2,953	\$3,166	\$3,395	\$3,640	\$3,902	\$4,184	\$4,486
<b>Total assets</b>	<b>\$176,223</b>	<b>\$193,299</b>	<b>\$212,454</b>	<b>\$233,943</b>	<b>\$258,048</b>	<b>\$285,089</b>	<b>\$315,427</b>
<b>Liabilities and stockholders'</b>							
<b>equity</b>							
Current liabilities:							
Accounts payable	\$6,591	\$7,406	\$8,323	\$9,352	\$10,510	\$11,810	\$13,271
Short-term debt	\$4,985	\$5,680	\$6,471	\$7,373	\$8,401	\$9,571	\$10,905
Current portion of long-							
term debt	\$2,499	\$2,808	\$3,156	\$3,546	\$3,985	\$4,478	\$5,032
Accrued compensation	\$5,096	\$5,460	\$5,850	\$6,268	\$6,716	\$7,196	\$7,710
Income taxes	\$606	\$681	\$765	\$860	\$966	\$1,086	\$1,220
Short-term unearned							
revenue	\$23,223	\$26,096	\$29,325	\$32,953	\$37,030	\$41,611	\$46,759
Securities lending							
payable	\$92	\$103	\$116	\$131	\$147	\$165	\$185
Other	\$6,766	\$7,890	\$9,201	\$10,729	\$12,511	\$14,590	\$17,013
<b>Total current liabilities</b>	<b>\$49,858</b>	<b>\$56,125</b>	<b>\$63,207</b>	<b>\$71,212</b>	<b>\$80,265</b>	<b>\$90,506</b>	<b>\$102,095</b>
Long-term debt	\$27,808	\$31,248	\$35,114	\$39,459	\$44,341	\$49,826	\$55,991

Year Ended June 30,	2015F	2016F	2017F	2018F	2019F	2020F	2021F
<b>(USD, in millions, except per share amounts)</b>							
Long-term unearned revenue	\$2,095	\$2,354	\$2,645	\$2,973	\$3,341	\$3,754	\$4,218
Deferred income taxes	\$2,835	\$3,186	\$3,580	\$4,023	\$4,520	\$5,080	\$5,708
Other long-term liabilities	\$13,544	\$15,220	\$17,103	\$19,219	\$21,596	\$24,268	\$27,271
<b>Total non-current liabilities</b>	<b>\$46,282</b>	<b>\$52,008</b>	<b>\$58,442</b>	<b>\$65,673</b>	<b>\$73,798</b>	<b>\$82,928</b>	<b>\$93,188</b>
<b>Total liabilities</b>	<b>\$96,140</b>	<b>\$108,133</b>	<b>\$121,649</b>	<b>\$136,885</b>	<b>\$154,063</b>	<b>\$173,434</b>	<b>\$195,283</b>
Stockholders' equity:							
Common stock and paid-in capital	\$68,465	\$73,469	\$78,979	\$85,047	\$91,728	\$99,082	\$107,178
Retained earnings	\$9,096	\$8,844	\$8,600	\$8,362	\$8,130	\$7,905	\$7,686
Accumulated other comprehensive income	\$2,522	\$2,853	\$3,226	\$3,649	\$4,127	\$4,668	\$5,280
<b>Total stockholders' equity</b>	<b>\$80,083</b>	<b>\$85,166</b>	<b>\$90,805</b>	<b>\$97,058</b>	<b>\$103,986</b>	<b>\$111,655</b>	<b>\$120,144</b>
<b>Total liabilities and stockholders' equity</b>	<b>\$176,223</b>	<b>\$193,299</b>	<b>\$212,454</b>	<b>\$233,943</b>	<b>\$258,048</b>	<b>\$285,089</b>	<b>\$315,427</b>

### Appendix 3 – Key Indicators Evolution

Indicators	08/09	09/10	10/11	11/12	12/13	13/14	08/14	CAGR
Revenues	-3.3%	6.7%	11.3%	5.3%	5.4%	10.9%	36.3%	5.3%
Gross Margin	-5.3%	7.9%	8.2%	3.3%	2.5%	3.9%	20.4%	3.0%
Total Operating Expenses	-0.2%	0.8%	10.8%	19.4%	-1.7%	14.5%	43.7%	6.4%
EBITDA	-5.9%	15.5%	11.1%	-19.1%	21.0%	7.7%	30.4%	4.4%
EBIT	-9.0%	16.8%	12.0%	-22.2%	20.7%	3.7%	22.0%	3.2%
NET INCOME	-19.4%	25.3%	21.0%	-31.0%	25.3%	1.0%	22.2%	3.2%
Earnings per share	-15.3%	26.8%	24.8%	-30.1%	25.6%	1.9%	33.6%	4.9%
Total Assets	6.8%	10.0%	23.3%	10.9%	16.1%	19.1%	86.2%	13.1%
Total Equity	8.6%	15.5%	21.2%	15.1%	17.4%	12.9%	90.6%	13.8%
Total Liabilities	4.9%	4.1%	25.7%	6.2%	14.5%	26.3%	81.7%	12.4%

### Appendix 4 – Operational Indicators Evolution

Operational Indicators Summary	08/09	09/10	10/11	11/12	12/13	13/14	08/14	CAGR
Gross Margin	-5.3%	7.9%	8.2%	3.3%	2.5%	3.9%	20.4%	3.0%
EBITDA	-5.9%	15.5%	11.1%	-19.1%	21.0%	7.7%	30.4%	4.4%
EBITDA Margin	-2.6%	8.8%	-0.1%	-24.3%	15.6%	-3.2%	-5.9%	-0.8%
EBIT	-9.0%	16.8%	12.0%	-22.2%	20.7%	3.7%	22.0%	3.2%
EBIT Margin	-5.6%	10.1%	0.7%	-27.4%	15.2%	-7.3%	-14.2%	-2.0%
EBT	-18.4%	23.3%	11.5%	-23.2%	19.5%	2.8%	15.5%	2.2%
Net Income	-19.4%	25.3%	21.0%	-31.0%	25.3%	1.0%	22.2%	3.2%
Net debt	-4.8%	20.1%	30.2%	23.6%	26.3%	2.6%	98.0%	15.0%

Operational Indicators Summary	08/09	09/10	10/11	11/12	12/13	13/14	08/14	CAGR
Non-Cash Working Capital	-20.5%	12.5%	22.3%	4.7%	13.6%	1.2%	33.8%	4.9%
Liquidity	28.4%	15.7%	36.1%	17.8%	20.0%	10.7%	128.7%	20.2%
Current Ratio	-0.8%	-4.7%	13.2%	3.9%	-0.7%	-29.8%	-19.0%	-2.7%
ROE	-28.0%	9.8%	-0.2%	-46.1%	7.9%	-11.9%	-68.4%	-9.3%
ROA	-26.1%	15.2%	-2.3%	-41.9%	9.2%	-18.1%	-64.0%	-8.7%
Return on Sales	-16.0%	18.6%	9.7%	-36.3%	19.8%	-10.0%	-14.1%	-2.0%

## Appendix 5 – Nokia SWOT Analysis

### 1- Strengths

- a. Nokia has throughout the years developed a robust patent portfolio due to its innovativeness and development of new standards in different segments (mainly in telecommunications). This allowed Nokia to have a portfolio of standard essential patents (SEP). In total, it has near 30,000 individual patents in its portfolio and 2/3 of these patents have value for the next 10 years (at least), maintaining a competitive advantage over its competitors.
- b. Nokia has a diversified geographic presence allowing it to reduce its risk exposure to particular markets and at the same time providing Nokia benefits as economies of scale and greater proximity with their clients.
- c. Nowadays, Nokia primary focus is in the network segment, where it is a leading provider of services. Its working foundation is based in the next-gen communications such as 3G and 4G networks, where it has a highly diversified client portfolio. This well-established network business (competitive edge) associated with its client base ensure stable revenues and is an obstacle to competitors that lack either the scale obtained by Nokia or the recognition.

### 2- Weaknesses

- a. Nokia, market leader during nearly a decade has “missed the boat” in the smartphone market. From 2007 onwards, it has lost its importance in the segment, mainly to Apple’s iPhone and Google OS Android. This might be one of the reasons Nokia has partnered up with Microsoft in the mobile segment, opting to use Windows Phone instead of in-house developed software.
- b. Over the past years, Nokia had poor financial results. Its revenues have been decreasing in recent years at a 10.8% compound annual rate of change (CARC). This fall has been generalized and not in a particular segment or market (even though the mobile segment was the most affected), distressing investors’ confidence in the company.
- c. Nokia has been involved in many legal and administrative proceedings, affecting the brand image. These lawsuits have disturbed the deal with Microsoft, as some of Nokia assets in India have been claimed because of withholding tax payments to Indian government. Such lawsuits carried by regulatory authorities could result in more compensation claims or impositions of constraints, generating negative impacts on Nokia’s financial performance and brand awareness.

### 3- Opportunities

- a. Growth in worldwide mobile subscribers and expansion of bandwidth intensive mobile applications (social networks, streaming services and games) are driving significant network investments and Nokia is taking advantage of its position in the market. Nokia clients are upgrading the core fiber network, investing in next-gen wireless communications in order to anticipate the surge in traffic caused by the adoption of smartphones and tablets as our main gadgets. Global mobile broadband market is expected to grow at a 12% CAGR rate, reaching a value of \$422.9 thousand million by 2017.
- b. HERE business segment also presents a positive outlook as, according to industry estimates, smart vehicles with built in connectivity platforms will account for nearly 90% of new cars by

2020, in contrast with the 10% nowadays. HERE offer will benefit from this growth as it is already focused in supplying this kind of complete solution in today's market. The strong outlook, coupled with the company's robust portfolio of solutions are expected to deliver incremental growth opportunities.

#### 4- Threats

- a. However, it is not only in the mobile segment that Nokia faces intense competition. In its core business of telecommunications infrastructure, defined by having rapidly changing technologies (good performance depends on timely introduction of new products), Nokia competes with companies that are larger and have higher margins or even stronger customer finance policies, allowing them to offer the same products and services at a lower price. Chinese competitors (ZTE, Huawei), eager to gain market share, are their biggest threat at this moment.
- b. Nokia operating markets are highly regulated, being subjected to direct and indirect regulations in each of the countries it operates. Changes in regulations or in trade policies for example can affect Nokia's results as a consequence of higher costs (not budgeted) in current network infrastructure construction or even delays in launching new products/services. If Nokia fails to comply with these regulations, it can result in administrative or criminal liabilities, influencing negatively their financial results.

#### Appendix 6 – Microsoft FCFF

Year Ended June 30,	2008	2009	2010	2011	2012	2013	2014
<b>(USD, in millions, except per share amounts)</b>							
Total Revenues	\$60,420	\$58,437	\$62,484	\$69,943	\$73,723	\$77,849	\$86,833
Total Operating Expenses	\$38,149	\$38,074	\$38,386	\$42,782	\$51,960	\$51,085	\$59,074
EBIT	\$22,271	\$20,363	\$24,098	\$27,161	\$21,763	\$26,764	\$27,759
Income Taxes	\$6,133	\$5,252	\$6,253	\$4,921	\$5,289	\$5,189	\$5,746
Marginal tax rate	28%	26%	26%	18%	24%	19%	21%
EBIT(1-T)	\$16,138	\$15,111	\$17,845	\$22,240	\$16,474	\$21,575	\$22,013
D & A	\$2,056	\$2,562	\$2,673	\$2,766	\$2,967	\$3,755	\$5,212
NON-CASH NWCN	\$10,540	\$8,585	\$9,729	\$12,162	\$12,742	\$14,596	\$14,772
ΔNWCN		\$-1,955	\$1,144	\$2,433	\$580	\$1,854	\$176
Investment in Fixed Assets	\$8,215	\$9,294	\$8,788	\$8,906	\$11,439	\$13,074	\$19,992
Δ Investment in Fixed Assets		\$1,079	\$-506	\$118	\$2,533	\$1,635	\$6,918
<b>FCFF</b>	<b>\$18,194</b>	<b>\$18,549</b>	<b>\$19,880</b>	<b>\$22,455</b>	<b>\$16,328</b>	<b>\$21,841</b>	<b>\$20,131</b>

Year Ended June 30,	2015F	2016F	2017F	2018F	2019F	2020F	2021F (steady year)
<b>(USD, in millions, except per share amounts)</b>							
Total Revenues	\$93,580	\$98,148.13	\$105,999.98	\$114,479.97	\$123,638.37	\$132,911.25	\$142,879.60
Total Operating Expenses	\$75,419	\$65,712.55	\$70,969.55	\$76,647.11	\$82,778.88	\$88,987.30	\$95,661.35
EBIT	\$18,161	\$32,435.58	\$35,030.43	\$37,832.86	\$40,859.49	\$43,923.95	\$47,218.25
Income Taxes	\$6,314	\$7,969.14	\$8,606.67	\$9,295.21	\$10,038.83	\$10,791.74	\$11,601.12
Marginal tax rate	35%	25%	25%	25%	25%	25%	25%
EBIT(1-T)	\$11,847	\$24,466.44	\$26,423.75	\$28,537.65	\$30,820.66	\$33,132.21	\$35,617.13
D & A	\$1,742	\$4,015.66	\$4,336.91	\$4,683.86	\$5,058.57	\$5,437.96	\$5,845.81
NON-CASH NWCN	\$14,219	\$16,358.05	\$17,666.70	\$19,080.03	\$20,606.44	\$22,151.92	\$23,813.31
ΔNWCN	\$-553	\$2,139.05	\$1,308.64	\$1,413.34	\$1,526.40	\$1,545.48	\$1,661.39
Investment in Fixed Assets	\$19,566	\$16,260.75	\$17,561.61	\$18,966.54	\$20,483.86	\$22,020.15	\$23,671.66

Year Ended June 30,	2015F	2016F	2017F	2018F	2019F	2020F	2021F (steady year)
Δ Investment in Fixed Assets	\$-426	\$-3,305.25	\$1,300.86	\$1,404.93	\$1,517.32	\$1,536.29	\$1,651.51
<b>FCFF</b>	<b>\$14,568</b>	<b>\$29,648.29</b>	<b>\$28,151.16</b>	<b>\$30,403.25</b>	<b>\$32,835.51</b>	<b>\$35,488.40</b>	<b>\$38,150.03</b>

### Appendix 7 – Microsoft Stand-Alone FCFF

Year Ended June 30,	2008	2009	2010	2011	2012	2013	2014
<b>(USD, in millions, except per share amounts)</b>							
Total Revenues	\$60,420	\$58,437	\$62,484	\$69,943	\$73,723	\$77,849	\$84,848
Total Operating Expenses	\$38,149	\$38,074	\$38,386	\$42,782	\$51,960	\$51,085	\$59,074
EBIT	\$22,271	\$20,363	\$24,098	\$27,161	\$21,763	\$26,764	\$27,759
Income Taxes	\$6,133	\$5,252	\$6,253	\$4,921	\$5,289	\$5,189	\$5,746
Marginal tax rate	28%	26%	26%	18%	24%	19%	21%
EBIT(1-T)	\$16,138	\$15,111	\$17,845	\$22,240	\$16,474	\$21,575	\$22,013
D & A	\$2,056	\$2,562	\$2,673	\$2,766	\$2,967	\$3,755	\$5,212
NON-CASH NWCN	\$10,540	\$8,585	\$9,729	\$12,162	\$12,742	\$14,596	\$14,772
ΔNWCN		\$-1,955	\$1,144	\$2,433	\$580	\$1,854	\$176
Investment in Fixed Assets	\$8,215	\$9,294	\$8,788	\$8,906	\$11,439	\$13,074	\$19,992
Δ Investment in Fixed Assets		\$1,079	\$-506	\$118	\$2,533	\$1,635	\$6,918
<b>FCFF</b>	<b>\$18,194</b>	<b>\$18,549</b>	<b>\$19,880</b>	<b>\$22,455</b>	<b>\$16,328</b>	<b>\$21,841</b>	<b>\$20,131</b>

Year Ended June 30,	2015F	2016F	2017F	2018F	2019F	2020F	2021F (steady year)
<b>(USD, in millions, except per share amounts)</b>							
Total Revenues	\$84,334.88	\$88,419.56	\$95,493.12	\$103,132.57	\$111,383.18	\$119,736.91	\$128,717.18
Total Operating Expenses	\$75,419	\$57,029.81	\$61,592.20	\$66,519.57	\$71,841.14	\$77,229.22	\$83,021.41
EBIT	\$8,915.88	\$31,389.74	\$33,900.92	\$36,613	\$39,542.04	\$42,507.69	\$45,695.77
Income Taxes	\$2,096.52	\$7,381.13	\$7,971.62	\$8,609.35	\$9,298.09	\$9,995.45	\$10,745.11
Marginal tax rate	24%	24%	24%	24%	24%	24%	24%
EBIT(1-T)	\$6,819.36	\$24,008.62	\$25,929.31	\$28,003.65	\$30,243.94	\$32,512.24	\$34,950.66
D & A	\$3,495.34	\$3,664.63	\$3,957.80	\$4,274.43	\$4,616.38	\$4,962.61	\$5,334.80
NON-CASH NWCN	\$14,214.24	\$14,902.70	\$16,094.91	\$17,382.51	\$18,773.11	\$20,181.09	\$21,694.67
ΔNWCN	\$-557.76	\$688.45	\$1,192.22	\$1,287.59	\$1,390.60	\$1,407.98	\$1,513.58
Investment in Fixed Assets	\$19,566	\$14,961.82	\$16,158.77	\$17,451.47	\$18,847.59	\$20,261.16	\$21,780.74
Δ Investment in Fixed Assets	\$-426	\$-4,604.18	\$1,196.95	\$1,292.70	\$1,396.12	\$1,413.57	\$1,519.59
<b>FCFF</b>	<b>\$11,298.45</b>	<b>\$31,588.97</b>	<b>\$27,497.95</b>	<b>\$29,697.78</b>	<b>\$32,073.61</b>	<b>\$34,653.30</b>	<b>\$37,252.29</b>

### Appendix 8 – Phone Segment Stand-Alone FCFF

Year Ended June 30,	2008	2009	2010	2011	2012	2013	2014
<b>USD, in millions, except per share amounts)</b>							
Total Revenues	\$40,613.02	\$40,236.61	\$30,122.30	\$20,574.10	\$19,482.44	\$14,256.08	\$3,266.68
Total Operating Expenses	\$9,936.61	\$11,846.95	\$7,626.73	\$7,634.53	\$5,543.08	\$3,717.07	\$1,206.73
EBIT	\$3,977.21	\$1,175.17	\$1,469	\$-571.04	\$-1,486.88	\$582.18	\$43.62
Income Taxes	\$865.76	\$689.20	\$314.38	\$154.34	\$739.24	\$226.59	\$127
Marginal tax rate	22%	59%	21%	-27%	-50%	39%	291%
EBIT(1-T)	\$3,111.45	\$485.97	\$1,154.62	\$-725.38	\$-2,226.12	\$355.59	\$-83.38

Year Ended June 30,	2008	2009	2010	2011	2012	2013	2014
D & A	\$4,467.43	\$4,426.03	\$3,313.45	\$2,263.15	\$2,143.07	\$1,568.17	\$359.34
NON-CASH NWCN	\$1,629.01	\$5,565.62	\$4,617.77	\$2,747.72	\$2,941.48	\$3,952.98	\$1,356.24
ΔNWCN		\$3,936.61	\$-947.85	\$-1,870.05	\$193.76	\$1,011.50	\$-
Investment in Fixed Assets	\$4,807.73	\$4,544.59	\$2,754.91	\$1,731.76	\$2,628.86	\$966.93	\$273.51
Δ Investment in Fixed Assets		\$-263.14	\$-1,789.68	\$-1,023.15	\$897.10	\$-1,661.93	\$-693.43
<b>FCFF</b>	<b>\$7,578.88</b>	<b>\$1,238.53</b>	<b>\$7,205.60</b>	<b>\$4,430.97</b>	<b>\$-1,173.91</b>	<b>\$2,574.19</b>	<b>\$3,566.12</b>

Year Ended June 30,	2015F	2016F	2017F	2018F	2019F	2020F	2021F (steady year)
<b>USD, in millions, except per share amounts)</b>							
Total Revenues	\$7,524	\$7,924.09	\$8,558.02	\$9,242.66	\$9,982.07	\$10,730.73	\$11,535.53
Total Operating Expenses	\$2,233.58	\$2,352.35	\$2,540.54	\$2,743.78	\$2,963.28	\$3,185.53	\$3,424.44
EBIT	\$135.45	\$142.65	\$154.07	\$166.39	\$179.70	\$193.18	\$207.67
Income Taxes	\$47.41	\$69.57	\$75.14	\$81.15	\$87.64	\$94.21	\$101.28
Marginal tax rate	35%	49%	49%	49%	49%	49%	49%
EBIT(1-T)	\$88.04	\$73.08	\$78.93	\$85.24	\$92.06	\$98.97	\$106.39
D & A	\$827.64	\$871.65	\$941.38	\$1,016.69	\$1,098.03	\$1,180.38	\$1,268.91
NON-CASH NWCN	\$1,406.69	\$1,481.49	\$1,600.01	\$1,728.01	\$1,866.25	\$2,006.22	\$2,156.69
ΔNWCN	\$50.45	\$74.80	\$118.52	\$128	\$138.24	\$139.97	\$150.47
Investment in Fixed Assets	\$745.35	\$784.99	\$847.78	\$915.61	\$988.86	\$1,063.02	\$1,142.75
Δ Investment in Fixed Assets	\$471.84	\$39.63	\$62.80	\$67.82	\$73.25	\$74.16	\$79.73
<b>FCFF</b>	<b>\$393.39</b>	<b>\$830.30</b>	<b>\$838.99</b>	<b>\$906.11</b>	<b>\$978.60</b>	<b>\$1,065.21</b>	<b>\$1,145.10</b>

### Appendix 9 – Assumptions used for Synergies Calculations

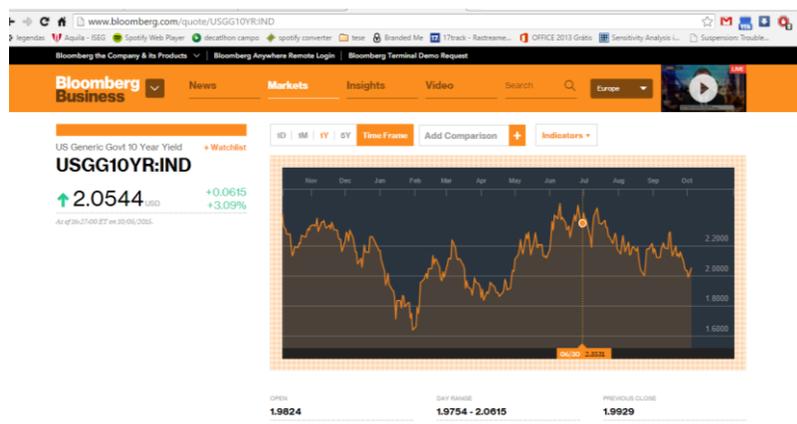
	Assumptions for Phone Segment	Assumptions for Microsoft (Stand-alone)
Levered Beta	1.07	0.7998
D/E	46.12%	10.36%
tax rate	26%	26%
Risk Free Rate	2.35%	2.35%
Market Return	12.95%	12.95%
Market Premium	10.60%	10.60%
RE	13.7%	10.8%
RD	3.0%	3.0%
E/ E+D	70%	91%
D/ E+D	30%	9%
<b>WACC</b>	<b>10.23%</b>	<b>10.02%</b>
<b>perpetuity growth rate</b>	<b>2.00%</b>	<b>2.00%</b>

### Appendix 10 – Cost of debt rate

Maturity	FV 30/06/15	FV 30/06/14	Stated Interest Rate	Effective Interest Rate	Time to maturity	Market Value	Annual Interest
<b>USD, in millions, except per share amounts)</b>							
25/09/2015	1,750	1,750	1.63%	1.80%		<b>1,750.00</b>	
08/02/2016	750	750	2.50%	2.64%	0.61	<b>748.24</b>	<b>19.82</b>
15/11/2017	600	600	0.88%	1.08%	2.38	<b>573.50</b>	<b>6.50</b>
01/05/2018	450	450	1.00%	1.11%	2.84	<b>426.73</b>	<b>4.98</b>
06/12/2018	1,250	1,250	1.63%	1.82%	3.44	<b>1,201.27</b>	<b>22.80</b>
01/06/2019	1,000	1,000	4.20%	4.38%	3.92	<b>1,049.01</b>	<b>43.79</b>

Maturity	FV 30/06/15	FV 30/06/14	Stated Interest Rate	Effective Interest Rate	Time to maturity	Market Value	Annual Interest
12/02/2020	1,500	-	1.85%	1.94%	4.62	1,429.78	29.03
01/10/2020	1,000	1,000	3.00%	3.14%	5.26	1,004.88	31.37
08/02/2021	500	500	4.00%	4.08%	5.62	526.66	20.41
06/12/2021	1,950	2,396	2.13%	2.23%	6.44	1,859.72	43.54
12/02/2022	1,500	-	2.38%	2.47%	6.63	1,449.44	36.99
15/11/2022	750	750	2.13%	2.24%	7.38	711.03	16.79
01/05/2023	1,000	1,000	2.38%	2.47%	7.84	960.74	24.65
15/12/2023	1,500	1,500	3.63%	3.73%	8.47	1,576.35	55.89
12/02/2025	2,250	-	2.70%	2.77%	9.63	2,201.19	62.37
06/12/2028	1,950	2,396	3.13%	3.22%	13.45	1,988.89	62.75
02/05/2033	613	753	2.63%	2.69%	17.85	584.17	16.49
12/02/2035	1,500	-	3.50%	3.60%	19.64	1,624.84	54.06
01/06/2039	750	750	5.20%	5.24%	23.94	1,028.49	39.30
01/10/2040	1,000	1,000	4.50%	4.57%	25.27	1,267.65	45.67
08/02/2041	1,000	1,000	5.30%	5.36%	25.63	1,410.19	53.61
15/11/2042	900	900	3.50%	3.57%	27.40	988.85	32.14
01/05/2043	500	500	3.75%	3.83%	27.85	573.91	19.15
15/12/2043	500	500	4.88%	4.92%	28.48	677.80	24.59
12/02/2045	1,750	-	3.75%	3.80%	29.64	2,009.23	66.50
12/02/2055	2,250	-	4.00%	4.06%	39.65	2,779.11	91.42
<b>TOTAL</b>	<b>30,463.00</b>	<b>20,745</b>	<b>3.08%</b>	<b>3.18%</b>		<b>32,401.69</b>	<b>924.60</b>
						Cost of Debt:	3.04%

## Appendix 11 – Risk-free rate



## Appendix 12 – Relative Valuation

Multiples	Denominator	Numerator	Microsoft Price Target (Relative Valuation)	Microsoft Price Target (DCF Model of Chapter 6)	%	Numerator
P/E	\$12,193.00	\$191,795.89	\$23.24	\$44.36	64.7%	MktCap
P/Sales	\$93,580.00	\$226,648.44	\$27.46	\$44.36	48.0%	MktCap
P/BV	\$80,083.00	\$270,480.33	\$32.77	\$44.36	30.3%	MktCap
EV/EBITDA	\$19,903.00	\$306,058.38	\$37.08	\$48.21	26.3%	EV
EV/EBIT	\$18,161.00	\$645,986.77	\$78.26	\$48.21	-48.4%	EV
EV/Sales	\$93,580.00	\$180,141.50	\$21.82	\$48.21	79.3%	EV
P/FCFF	\$14,568.00	\$235,382.46	\$28.52	\$44.36	44.2%	MktCap