

## VALUATION OF TARGET FIRMS IN MERGERS AND ACQUISITIONS: A CASE STUDY ON MERGER OF SKYPE AND MICROSOFT

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### ABSTRACT

Mergers and acquisitions have become the most popular used methods of growth for the company and it's one of the best ways to make a shortcut to get the success. They create the larger potential market share and open it up to a more diversified market, increase competitive advantage against competitors. It also allows firms to operate more efficiently and benefit both competition and consumers. However, there are also many cases that the synergy between acquiring company and acquired company failed. The most common reason is to not create synergy between both of them. In recent months, the merger between Microsoft and Skype is a very hot topic of analysts and viewers...etc. This acquisition presents a big opportunity for both firms, Skype give Microsoft a boost in the enterprise collaboration. To exchange for this synergy, Microsoft paid \$8.5 billion in cash for Skype, the firm is not yet profitable. Skype revenue totaling \$860 million last year and operating profit of \$264 million, the company lost \$6.9 million overall, according to documents filed with the SEC. Is that a good deal for Microsoft? Many analysts have different point of view but most of them have negative perspective. Research was to provide the analysis of Skype's intrinsic value with an optimistic view of point about Skype's future, Microsoft overpaid for Skype. However, the synergy between Microsoft and Skype is kind of promisingly potential. Skype will be incorporated into Microsoft devices and system such as Xbox and Kinect, Xbox Live, the Window Phone operating system, Lync and Outlook. There are two potential opportunities for Microsoft in the Window Phone and Xbox & Kinect markets. Research also made some assumptions about what will happen in these markets with optimistic view of point based on some information available.

**Keywords:** Mergers and Acquisitions, Intrinsic Value, Synergy, Microsoft, Skype.

### INTRODUCTION

Globalization is the worldwide trend of businesses expanding beyond the domestic boundaries. Companies, small or large, public or private, are increasingly engaged in the international competition now. This means that the world is becoming one connected economy in which companies do business and compete anywhere with anyone, regardless of national boundaries. Due to the forces of globalization which have caused economies to become integrated, there is a realization among firms that these traditional ways of achieving competitive advantage now have only limited profitability. As a result, mergers and acquisitions have become an increasingly popular strategic choice for organizations (Nahavandi and Malekzadeh, 1988; McEntire and Bentley, 1996; Zhu and Huang, 2007).

A merger occurs when one corporation is combined with and disappears into another corporation. All mergers are statutory mergers, since all mergers occur as specific formal

transactions in accordance with the law, or statues, of the states where they are incorporated. A corporate acquisition is the process by which the stock or assets of a corporation come to be owned by a buyer. The transaction may take the form of a purchase of stock or a purchase of assets. Acquisition is the generic term used to describe a transfer of ownership. Merger is a narrow, technical term for a particular legal procedure that may or may not follow an acquisition.

The value of worldwide M&A totaled US\$799.8 billion during the first quarter of 2011, a 54.7% increase from comparable 2010 levels and the strongest quarter for worldwide M&A since the second quarter of 2008. By number of deals, M&A activity fell 4.9% compared to the last year with just over 9.600 announced deals. First quarter M&A activity was driven by deals over US\$5 billion, which totaled US\$331.5 billion and announced for 41.2% of quarterly activity, more than double activity seen during the first quarter of 2010.

## **LITERATURE REVIEW**

Following the stock market crash of 1929, discounted cash flow (DCF) analysis gained popularity as a valuation method for stocks. Irving Fisher in his 1930 book, "The Theory of Interest" and John Burr William's 1938 text "The Theory of Investment Value" first formally expressed the discounted cash flow DCF method in modern economic terms. Later Gordon (1962) extended the William model by introducing a dividend growth component in the late 1950's and early 1960's. The dividend DIV continues to be widely used to estimate the value of stock.

In recent years, the literature for estimating the value of a firm and the value of equity has been expanded dramatically. Copeland, Koller and Murrin (1990, 1994, 2000), Rappaport (1988, 1998), Steward (1991), and Hackel and Livnat (1992) were current pioneers in modeling the free cash flow to the firm, which is widely used to derive the value of the firm.

Today the discounted cash flow (DCF) model is the most commonly used tool among financial analyst when valuing a firm. It is documented that almost fifty percent of all financial analysts use a discounted cash flow (DCF) method when valuing potential objects to acquire (Hult, 1998). In a study Absiye & Diking (2001) found that all seven of their respondents, which were analysts, use the discounted cash flow (DCF) model when they were conducting a firm valuation, the other valuation models were just used as complements to the valuation done by the discounted cash flow (DCF) method. Quite a lot of other studies have been conducted on business valuation. Some of these focus on the different methods that are used to conduct valuations.

Damodaran (1994, 2001) on Valuation offers systematic examination of the three basic approaches to valuation - discounted cash-flow valuation, relative valuation, and contingent claim valuation - and the various models within these broad categories. Using numerous real-world examples involving both US and International firms, the book illuminates the purpose of each particular model, its advantages and limitations, the step-by-step process involved in putting the model to work, and the kinds of firms to which it is best applied. Among the tools presented are designed to: Estimate the cost of equity - including the capital asset pricing model and arbitrage pricing model Estimate growth rates - with coverage of how to arrive at a weighted average of growth rates by blending three separate approaches Value equity - focusing on the Gordon Growth Model and the two-and three-stage dividend discount model Measure free cash flow to equity - cash flows that are carefully delineated from the dividends

of most firms Value firms - including free cash flow to firm models, which are especially suited to highly leveraged firms Estimate the value of assets by looking at the pricing of comparable assets - with insight into the use and misuse of price/earnings and price/book value ratios, and underutilized price-to-sales ratios Measure the value of assets that share option characteristics - including a comparative look at the classic Black-Scholes and simpler binomial models.

## **METHODOLOGY**

The price that you want to pay should play a central part of acquisition analysis. The bidding firm or individual has to decide on a fair value for the target firm before making a bid, and the target firm has to determine a reasonable value for itself before deciding to accept or reject the offer. According to Damodaran, there are special factors to consider in takeover valuation. First, there is synergy, the increase in value that many managers foresee as occurring after mergers because the combined firm is able to accomplish things that the individual firms could not. The effects of synergy on the combined value of the two firms (target plus bidding firm) have to be considered before a decision is made on the bid. Second, the value of control, which measures the effects on value of changing management and restructuring the target firm, will have to be taken into account in deciding on a fair price. This is of particular concern in hostile takeovers. There is a significant problem with bias in takeover valuations. Target firms may be over-optimistic in estimating value, especially when takeover is hostile, and they are trying to convince their stockholders that the offer price is too low. Similarly, if the bidding firm has decided, for strategic reasons, to do an acquisition, there may be strong pressure on the analyst to come up with an estimate of value that backs up the acquisition.

According to the book “are you paying too much for that acquisition”, Robert G. Eccles, Kersten L. Lanes, and Thomas C. Wilson state that in today’s market, the purchase price of an acquisition will nearly always be higher than the intrinsic value of the company-the price of its stock before any acquisition intentions are announced. The key is to determine how much of that difference is “synergy value”- the value that will result from improvements made when the companies are combined. This value will accrue to the acquirer’s shareholders rather than to the target’s shareholders. The more synergy value a particular can generate, the higher the maximum price an acquirer is justified in paying. Just as important as correctly calculating the synergy value is having the discipline to walk from a deal when the numbers don’t add up. Robert G. Eccles, Kersten L. Lanes, and Thomas C. Wilson argue that the price that acquiring company have to pay is greater than the exact value or fair value of acquired company.

## **RESULTS AND DISCUSSION**

### **An Introduction to Skype and Microsoft**

#### **Brief Profile of Skype**

Skype is a global technology leader that enables real-time communications over the Internet. Skype’s software-based communications platform offers high-quality, easy-to-use tools for customers and businesses to communicate and collaborate globally through voice, video and text conversations. During 2012, Skype’s users made 207 billion minutes of voice and video calls using Skype. In the fourth quarter of 2010, video calls accounted for approximately 42% of all Skype-to-Skype minutes, and in 2010, its users sent over 176 million SMS text messages through Skype.

Skype has grown rapidly to achieve significant global scale since it was founded in 2003. From December 31, 2009 to December 31, 2010, it grew its registered users from 474 million to 663 million. From three months ended December 31, 2009 to the three months ended December 31, 2010, it grew its average monthly connected users from 105 million to 145 million and our average monthly paying users from 7.3 million to 8.8 million.

### **Microsoft's Acquisition**

Founded in 1975, Microsoft (Nasdaq "MSFT") is the worldwide leader in software, services and solutions that help people and businesses realize their full potential.

Microsoft has subsequently acquired 146 companies, purchased stakes in 61 companies, and made 25 divestments. Of the companies that Microsoft has acquired, 107 were based in the United States. Microsoft has not released financial details for most of these mergers and acquisitions.

Since Microsoft's first acquisition in 1987, it has purchased an average of six companies a year. The company has purchased more than ten companies a year since 2005, and it acquired 18 companies in 2006, the most in a single year, including Onfolioo, Lionhead, Studios, Massive Incorporated, ProClarity, WinternalsSoftware, and Colloquis. Microsoft has made five acquisitions worth over one billion dollars: Skype (2001), aQuantive (2007), Fast Search & Transfer (2008), Navision (2002), and Visio Corporation (2000).

Microsoft has also purchased several stakes valued at more than a billion dollars. It obtained an 11.5% stake in Comcast for \$ 1 billion, a 22.98% stake in Telewest Communications for \$2.263 billion, and a 3% stake in AT&T for \$ 5 billion. Among Microsoft's divestments, in which parts of the company are sold to another company, only Expedia, Inc. was sold for more than a billion dollars; USA Networks purchased the company on February 5, 2002 for \$1.372 billion.

### **Intrinsic Value**

#### **Cost of Debt**

The possibility of default on interest rate and principal payment on the borrowing is called the default Risk. Generally speaking, borrowers with higher default risk should pay higher interest rates on their borrowing than those with lower default risk.

In contrast to the general risk and return models for equity, which evaluate the effects of market risk on expected returns, models of default risk measure the effects of firm-specific default risk on promised returns. While diversification can be used to explain why firm-specific risk cannot be priced into expected return for equities, the same rationale cannot be applied to securities that have limited upside potential and much greater downside potential from firm-specific events. To see what we mean by limited upside potential, consider investing in the bond that issued by a company. The coupons are fixed at the time of the issue and these coupons represent the promised cash flow on the bond. The best-case scenario for you as an investor is that you receive the promised cash flow; you are not entitled to more than these cash flows even if the company wildly successful. All other scenarios contain only bad news, though in varying degrees, with the delivered cash flow being less than the promised cash flows. Consequently, the expected return on a corporate bond is likely to reflect the firm-specific default risk of the firm issuing the bond.

### Determinants of Default Risk

The default risk of a firm is a function of its capacity to generate cash flow from operations and its financial obligations – including interests and principal payments. It is also a function of how liquid a firm's assets are since firms with more liquid should have an easier time liquidating them, in a crisis, to meet debt obligations. Consequently, the following propositions relate to default risk:

- Firms that generate high cash flow should relative to their financial obligations have lower default risk than firms that generate low cash flow relative to financial obligations. Thus, firms with significant current investment that generate high cash flow, will have lower default risk than will firm that do not.
- The more stable cash flow, the lower is the default risk in the firm. Firms that operate in predictable and stable businesses will have lower default risk than otherwise similar firms that operate in cyclical and/or volatile business, for the same level of indebtedness.
- The more liquid a firm's assets, for any given level of operating cashflows and financial obligations, the less default risk in the firm.

### Default Risk and Interest rates

The advent of corporate bond market created demand for third party assessment of default risk on the part of bondholders. This demand came from the need for economies of scale, since few individual bondholders had the resources to make the assessment themselves. In the United State, this led to the growth of rating agencies like Standard and Poor's and Moody's which made judgments of default risk of corporations, using mix of private and public information, converted these judgments into measures of default risk (bond rating) and make these ratings public. Investors buying corporate bonds could therefore use the bond ratings as shorthand measure of default risk.

### The Ratings Process

The process of rating a bond starts when a company requests a rating from the ratings agency. The ratings agency then collects information from both publicly and available data and such as financial statements, the company itself, and makes decision on the rating. If it disagrees with the rating, the company is given the opportunities to present additional information.

The ratings assigned by these agencies are letter ratings. A rating of AAA from Standard and Poor's and Aaa from Moody's represent the highest rating granted to firms that are viewed as having the lowest default risk. As the default risk increases, the ratings decrease toward D for firms in default (Standard and Poor's).

### Determinants of Bond Ratings

There is a strong relationship between the bond rating a company receives and its performance on these financial ratios.

**Table 0.1: A summary of the median ratios from 2006 to 2008**

	AAA	AA	A	BBB	BB	B	CCC
EBIT interest cov. (x)	17.5	10.8	6.8	3.9	2.3	1.0	0.2
EBITDA interest cov.	21.8	14.6	9.6	6.1	3.8	2.0	1.4
Funds flow/ total debt (%)	105.8	55.8	46.1	30.5	19.2	9.4	5.8
Free operating cash flow/ total debt (%)	55.4	24.6	15.6	6.6	1.9	-4.5	-14.0
Return on capital (%)	28.2	22.9	19.9	14.0	11.7	7.2	0.5

Operating Income/ Sales (%)	29.2	21.3	18.3	15.4	15.3	11.2	13.6
Long-term debt/ capital (%)	15.2	26.4	32.5	41.0	55.8	70.7	80.3
Total debt/ Capital (%)	26.9	35.6	40.1	47.4	61.3	74.6	89.4
Number of firms	10	34	150	234	276	240	23

Note that the pre-tax interest coverage ratio and the EBITDA interest coverage ratio are stated in term of times interest earned, whereas the rest of the ratios are stated in percentage terms.

Not surprisingly, firms that generate income and cashflows that are significantly higher than debt payment that are profitable than those have low debt ratios are more likely to be highly rated than are firms that do not have these characteristics.

### Bond Ratings and Interest Rates

The interest rate on a corporate bond should be a function of its default risk. If the rating is a good measure of the default risk, higher rated bonds should be priced to yield lower interest rates than would lower rated bonds. The different between the interest rate on a bond with default risk and a default – free government bond is called default spread. This default spread will vary by maturity of the bond and can also change from period to period, depending on economic conditions.

#### Default Spread and Interest Rate on Bond

Table 3.4 provides default spreads at a point in time, but default spreads not only vary across time

Rating	Default Spread	Interest Rate on Bond
AAA	1.25%	4.75%
AA	1.75%	5.25%
A+	2.25%	5.75%
A	2.50%	6.00%
A-	3.00%	6.50%
BBB	3.50%	7.00%
BB	4.25%	7.75%
B+	5.00%	8.50%
B	6.00%	9.50%
B-	7.25%	10.75%
CCC	8.50%	12.00%
CC	10.00%	13.50%
C	12.00%	15.50%
D	15.00%	18.50%

decrease as we go to longer

maturities, reflecting that near the term default risk is greater than long term default risk. Historically, default spreads for every ratings class have increased during recessions and decreased during economic booms.

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EBIT interest cov. (x)	17.5	10.8	6.8	3.9	2.3	1.0	0.2
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Free operating cash flow/ total debt (%)	55.4	24.6	15.6	6.6	1.9	-4.5	-14.0
Return on capital (%)	28.2	22.9	19.9	14.0	11.7	7.2	0.5
Operating Income/ Sales (%)	29.2	21.3	18.3	15.4	15.3	11.2	13.6
Long-term debt/ capital (%)	15.2	26.4	32.5	41.0	55.8	70.7	80.3
Total debt/ Capital (%)	26.9	35.6	40.1	47.4	61.3	74.6	89.4
Number of firms	10	34	150	234	276	240	23

Note that the pre-tax interest coverage ratio and the EBITDA interest coverage ratio are stated in term of times interest earned, whereas the rest of the ratios are stated in percentage terms. Not surprisingly, firms that generate income and cashflows that are significantly higher than debt payment that are profitable than those have low debt ratios are more likely to be highly rated than are firms that do not have these characteristics.

**Bond Ratings and Interest Rates**

The interest rate on a corporate bond should be a function of its default risk. If the rating is a good measure of the default risk, higher rated bonds should be priced to yield lower interest rates than would lower rated bonds. The different between the interest rate on a bond with default risk and a default – free government bond is called default spread. This default spread will vary by maturity of the bond and can also change from period to period, depending on economic conditions.

**Table 0.2: Default Spread and Interest Rate on Bond**

Rating	Default Spread	Interest Rate on Bond
AAA	1.25%	4.75%
AA	1.75%	5.25%
A+	2.25%	5.75%
A	2.50%	6.00%
A-	3.00%	6.50%
BBB	3.50%	7.00%
BB	4.25%	7.75%
B+	5.00%	8.50%
B	6.00%	9.50%
B-	7.25%	10.75%
CCC	8.50%	12.00%
CC	10.00%	13.50%
C	12.00%	15.50%
D	15.00%	18.50%

decrease as we go to longer maturities, reflecting that near the term default risk is greater than long term default risk. Historically, default spreads for every ratings class have increased during recessions and decreased during economic booms.

**Table 0.3: Calculating Skype's Cost of Debt based on the procedure above**

Ratio	Description	Skype's Ratio
Pretax interest Coverage	= (Pretax Income from Continuing Operations + Interest Expense)/ Gross Interest	
EBITDA interest Coverage	= EBITDA/ Gross Interest	=181,946/68,645=3 <b>(BBB &amp; BB)</b>
Funds from Operations/ Total Debt	= (Net income from Continuing Operations + Depreciation)/ Total Debt	=60,637/1,071,165=5.66% <b>(CCC)</b>
Free Operating Cashflow/ Total Debt	= (Funds from Operations – Capital Expenditure – Change in Working Capital)/ Total Debt	=156,858/1,071,165=14,64% <b>(A)</b>
Pretax Return on Permanent Capital	= (Pretax Income from Continuing Operations + Interest Expense)/ (Average of Beginning of the year and End of the year of long and short debt, minority interest and Shareholders Equity)	
Operating Income/ Sales (%)	= (Sales – COGS (before depreciation) – Selling Expense – Administrative Expenses – R&D Expenses)/ Sales	=134,957/859,815=16% <b>(BBB)</b>
Long Term Debt/ Capital	= Long Term Debt / (Long Term Debt + Equity)	
Total Debt/ Capitalization	= Total Debt/ (Total Debt + Equity)	

Analysis of Standard & Poor's Ratings Agency for Skype's Debt Rating: Luxembourg based Internet Communications Company Skype is amending its term loan B and breaking it out into two tranches—a U.S. dollar-denominated tranche and a euro-denominated tranche. We are affirming the issue-level rating on the dollar-denominated term loan tranche at 'B+', and the recovery rating remains at '4', and we are rating the euro-denominated tranche 'B+' with a recovery rating of '4'. We are also affirming our 'B+' corporate credit rating on the company. The stable rating outlook reflects the expectation that Skype will continue to grow at its current pace over the next 12 months, resulting in adjusted leverage below 4x by the end of 2010. On Feb. 3, 2010, Standard&Poor's Ratings Services affirmed its ratings on the U.S.

### Cost of Equity

The cost of equity is the rate of return that investors require to invest in the equity of a firm. All of risk and return models described need a risk-free rate and a risk premium (in the CAPM) or premiums (in the APM and multifactor models).

### Risk-Free Rate

We defined a risk-free assets as one for which the investor knows the expected returns with certainty. Consequently, for an investment to be risk-free, that is, to have an actual return be equal to the expected return, two conditions have to be met:

- There has to be no default risk, which generally implies that the security has to be issued by a government. Note, though, that not all government are default-free, and



the presence of government or sovereign default risk can make it very difficult to estimate risk-free rates in some currencies.

- There can be no uncertainty about reinvestment rates, which implies that there are no intermediate cash flows.

*We have decided to use the ten – year US Treasury bill. In reality, there is no investment with absolutely zero risk. However, the US government has never defaulted on its T-bill payments. The current yield of the ten – year T-bill is 3.5%.*

**U.S. Treasury Yields (According to CNNMoney)**

Maturity	Last Yield	Previous Yield
3 Month	0.06%	0.04%
2 Year	0.26%	0.29%
5 Year	1.66%	1.69%
10 Year	3.02%	3.5%
30 Year	4.19%	4.22%

### **Risk-Premium**

The risk premium(s) is clearly a significant input in all of the assets pricing models. The risk premium in the CAPM model measures the extra return that would be demanded by investors for shifting their money from a riskless investment to the market portfolio or risky investments, on average. It should be a function of two variables:

**Risk Aversion of Investors:** As investors become more risk-averse, they should demand a larger premium for shifting from the riskless asset. Although some of this risk aversion may be inherent, some of it is also a function of economic prosperity (when the economy is doing so well, investors tend to be much more willing to take risk) and recent experience in the market (risk premium tend to surge after large market drops).

**Riskiness of the Average Risk Investment:** As the riskiness of the average risk investment increases, so should the premium. This will depend on what firms are actually traded in the market, their economic fundamentals, and how involved they are in managing risk.

Because each investor in a market is likely to have a different assessment of an acceptable equity risk premium, the premium will be a weighted average of these individual premiums, where the weights will be based on the wealth the investor brings to the market. Put more directly, what Warren Buffet, with his substantial wealth, thinks is an acceptable premium will be weighted in far more into market prices than what you or I might think about the same measure.

According to the research of Graham – Harvey about the Equity Risk Premium in 2010, they analyze the history of the equity risk premium from surveys of U.S. Chief Financial Officers (CFOs) conducted every quarter from June 2000 to June 2010.

During the past ten years, they have collected 13,668 responses to the survey. There is relatively little time variation in the risk premium. **The current premium, 3.0%, is considerably lower than the peak premium of 4.74% observed in February 2009.** The June 2010 survey shows that the expected annual S&P 500 return is 6.31% and the implied risk

premium is 3.0%. The expected annual S&P 500 is the lowest observed in the history of the survey.

**The overall average ten – year risk premium return is 3.46%. The standard deviation is 3.25%.**

### Market Betas

The final sets of inputs that we need to put risk and return models into practice are the risk parameters for individual assets and projects. In the CAPM, the beta of the asset has to be estimated relative to the market portfolio.

### Market Historical Betas

This is conventional approach for estimating betas used by most services and analysts. For firms that have been publicly traded for a length of time, it is relatively straightforward to estimate returns that an investor would have made investing in its equity in intervals (such as a week or a month) over that period. These returns can then be related to returns on equity market index to get a beta in the CAPM.

To set up standard process for estimating beta in the CAPM, we revisit the equation it provides for the expected return on an investment ( $R_j$ ) as a function of the beta of investment ( $B_j$ ) risk free rate ( $R_f$ ) and the expected return on the market portfolio ( $R_m$ ):

$$R_j = R_f + B_j (R_m - R_f)$$

This equation can be rewritten in one of two ways:

In terms of excess returns:  $R_j - R_f = B_j (R_m - R_f)$

In terms of raw returns :  $R_j = R_f (1 - B_j) + B_j R_m$

These equations provide the templates for the two standard procedures for estimating the beta of an investment, using past returns. In the first, we compute the returns earned by an investment and a specified market index over past time periods, in excess of the riskfree rates in each of the time period, and regress the excess returns on the investment against the excess returns on the market.

$$(R_j - R_f) = a + B_j (R_m - R_f)$$

In the second equation, we compute the raw returns (not adjusted for the risk free rate) earned by an investment and the market index over past time period and regress the raw returns on the investment against the raw returns on the market.

$$R_j = a + B_j R_m$$

In both regressions, the slope of the regression measures the beta of the stock and measures the riskiness of the stock. The intercept is a simple measure of stock price performance, relative to CAPM expectations, in each regression, but with slightly different interpretations. To evaluate how eBay as an investment between 2005 and 2011 and how risk it is, I regressed monthly raw returns on Microsoft against returns on the S&P 500 between January 2005 and September 2011. The return on Microsoft and S&P 500 index are computed as follows:

The returns to a stockholder are computed month by month from January 2005 to December 2011. These returns include both dividends and price appreciation and are defined as follows:

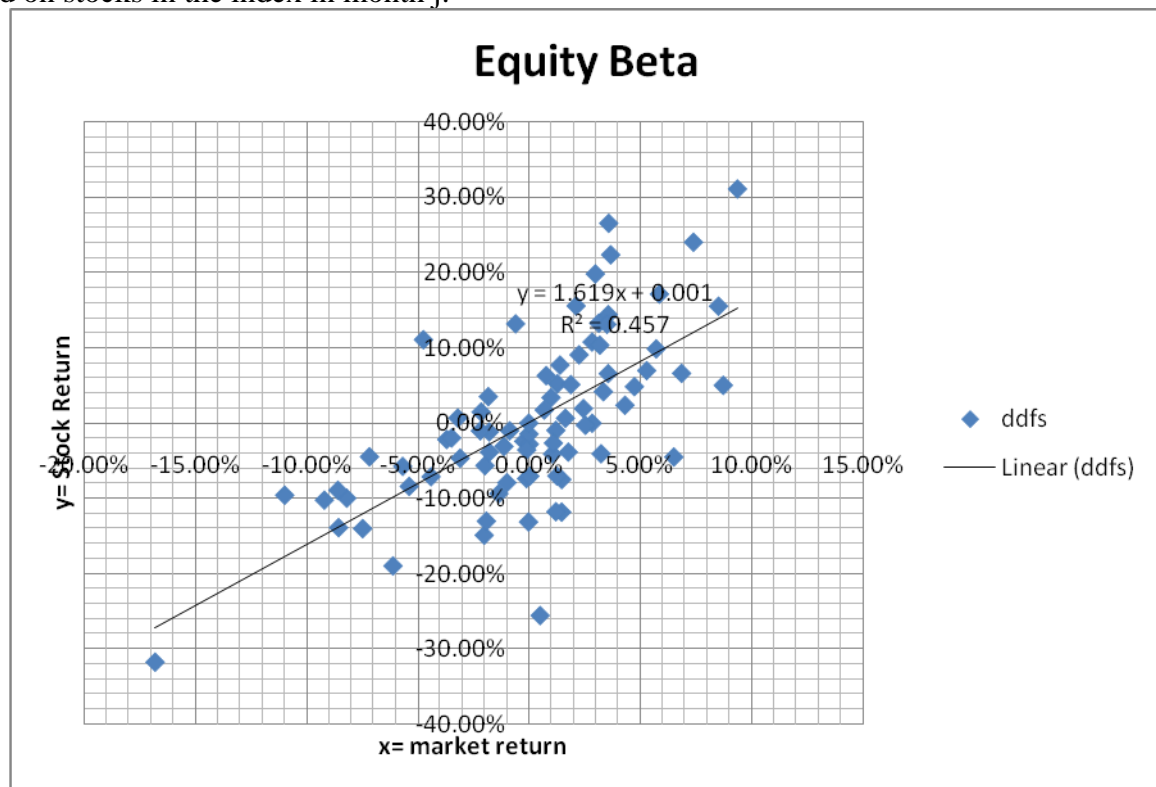
$$\text{Return}_{\text{Disney},j} = (\text{Price}_{\text{Disney},j} - \text{Price}_{\text{Disney},j-1} + \text{Dividends}_{\text{Disney},j}) / \text{Price}_{\text{Disney},j-1}$$

Where Price  $j$  is of eBay stock at the end of the month  $j$ ; and Dividends  $j$  are dividends on Microsoft stock in month  $j$ ;

The returns on the S&P 500 are computed for each month of the same period time and the monthly dividend yield on stock in the index.

$$\text{Market Return}_{\text{S\&P 500},j} = (\text{Index}_j - \text{Index}_{j-1} + \text{Dividends}_j) / \text{Index}_{j-1}$$

Where Index j is the level of the index at the end of month j and Dividend j is the dividends paid on stocks in the index in month j.



The cost of capital is a weighted average of the costs of the different components of financing, with the weights based on the market values of each component. The cost of debt is the market rate at which firm can borrow long term, adjusted for any advantages of borrowing. The cost of preferred stock or cost of equity, on the other hand, is the preferred dividend.

$$\text{WACC} = \frac{E}{V} * Re + \frac{D}{V} * Rd * (1 - Tc)$$

#### Inputs for WACC Model

**Conclusion:** After calculating the cost of equity and cost of debt based on the assumption above, finally we have the result of cost of capital that equals to 9.5%. This rate reflects the riskiness of Skype's capital and discount rate that we're going to use this in Discounted Cash Flow Model in the next parts.

#### Assumptions

What is the intrinsic value of Skype? This question is very difficult to answer because Skype is a private company and we have a little access to the insiders of the financial statements. It is widely reported, though, that Skype had operating losses of \$6.905 million on revenues of \$ 860 million in 2010. Based on those numbers as a base, I tried to value Skype, making what I thought were most likely optimistic assumption

### Sustained Growth

Users: They have significantly increased both their free and paying users, growing their average monthly connected users by 38% and average monthly paying users by 19%, from the three months ended December 31, 2009 to the three months ended December 31, 2010.

#### Growth in Users for Registered and Paying Users

Growth in Users				
	Registered users (millions)	Change (%)	Paying users (millions)	Change (%)
2007	217	56%	4.6	N/a
2008	325	49.77%	5.8	26.09%
2009	474	45.85%	7.3	25.86%
<b>2010</b>	<b>663</b>	<b>39.87%</b>	<b>8.8</b>	<b>20.55%</b>

### Synergy Value

Many analysts pay much attention to Microsoft's acquisition of Skype; they try to explain why Microsoft acquires Skype? Did Microsoft overpay for Skype? And what is the strategic policy of Microsoft?

In order to answer these entire questions is so difficult; however We want to go further to understand what reasons underline in this acquisition? And I think the main reason to explain is up to Microsoft's strategic policy?

First, let's talk about the combination and benefits for both. Microsoft, of course, has the exact same ambitions of ubiquity, and Skype and recently acquired Qik fit nicely into many of its current product offerings: think Windows Phone (combined with Nokia, Xbox and Kinect, Bing, Office 365, Windows Live Messenger and other Live products, Lync, Outlook, SharePoint, Internet Explorer, Azure, and so on.

In its press release announcing the deal, Microsoft played up the potential synergies between Skype and its own communications offerings, including its Lync VoIP platform, Outlook mail, Messenger instant-messaging, Hotmail Web mail and Xbox Live gaming service. The fact that Skype will support Microsoft devices like *Xbox and Kinect, Windows Phone* and a wide array of other Window devices, spells tremendous opportunity for the channel.

The purchase also provides Microsoft with a wealth of p2p and collaboration technology expertise and intellectual property, an increasingly important asset to have these days.

It also brings reach: Skype's user base is comparable to that of Facebook in terms of size (more than 700 million registered users that is) and the social network in fact has tie-ins with Skype already on a product level.

Facebook was also said to be sniffing around Skype, according to multiple reports, but its interest in the VOIP Company wasn't nearly as profound as assumed

With social networking getting more and more popular and devices embracing the internet more, Microsoft will really try to put Skype in all Windows powered devices and perhaps will strike deals to incorporate Skype in innovative products like Smart TVs and more, bringing benefits to both consumers and enterprise users and generating significant new business and revenue opportunities.

In my view-point, we have to consider two important benefits to both firms. First, let's imagine what will happen if Microsoft incorporate Skype into Window Phones, why this kind of thing is so important to smartphone industry and is it a core competence for Window Phones?

In order to understand, we should focus on the smartphone industry and whose software is competitors of Window Phones.

### Smartphone Industry

Based on IDC's Worldwide Quarterly Mobile Phone Tracker, the global smartphone industry is expected to grow 55 percent by the end of 2011 as more consumers embrace the new technology. According to the reports, smartphone vendors will ship a total of 472 million smartphones in 2011 compared to approximately 305 million units shipped in 2010.

The underlying cause of the dramatic rise of smartphone users worldwide is the advanced operating systems that support the users' demand of better integrated, multi-tasking, fast, intuitive and seamless experience.

Worldwide smartphone sales will reach 468 million units in 2011, a 57.7 percent increase from 2010, according to Gartner Inc. By the end of 2011, Android will move to become the most popular operating system (OS) worldwide and will build on its strength to account for 49 percent of the smartphone market by 2012.

Sales of open OS devices will account for 26 percent of all mobile handset device sales in 2011, and are expected to surpass the 1 billion mark by 2015, when they will account for 47 percent of the total mobile device market.

By 2015, 67 percent of all open OS devices continue to fight for market share, price will decrease to further benefit consumers", Ms. Cozza said: "Android's position at the high end of the market remain strong, but its greatest volume opportunity in the longer term will be in the mid – to low – cost smartphones, above all in emerging markets."

#### Worldwide Mobile Communications Device Open OS Sales to End Users by OS (Thousands of Units)

OS	2010	2011	2012	2015
Symbian	111,577	89,930	32,666	661
Market Share (%)	37.6	19.2	5.2	0.1
Android	62,225	179,873	310,088	539,318
Market Share (%)	22.7	38.7	49.2	48.8
Research in Motion	47,452	62,600	79,335	122,864
Market Share (%)	16	13.4	12.6	11.1
iOS	46,598	90,560	118,848	189,924
Market Share (%)	15.7	19.4	18.9	17.2
Windows Phone	<b>12,378</b>	<b>26,346</b>	<b>68,156</b>	<b>215,998</b>
Market Share (%)	<b>4.2</b>	<b>5.6</b>	<b>10.8</b>	<b>19.5</b>
Others	11,417	18,392	21,383	36,133
Market Share (%)	3.8	3.9	3.4	3
Total Market	291,647	467,701	630,476	1,104,898

Source: Gartner (<http://www.gartner.com/it/page.jsp?id=1622614>, April 2011)

Gartner predicts that Nokia will push Windows Phone well into the mid-tier of its portfolio by the end of 2012, driving the platform to be the third largest in the worldwide ranking by 2013. Gartner has revised its forecast of Windows Phone's market share upward, solely by virtue of Microsoft's alliance with Nokia. Although this is an honorable performance it is considerably less than what Symbian had achieved in the past underlying the upward battle that Nokia has to face.

Now look at the table and what we believe in, we can see that there are three biggest operating systems in the smartphone industry, that's Android, iOS, Windows Phone. We assume that Windows Phone will incorporate Skype into and the consumers will experience

the best features that Skype bring in. Why Windows Phone will bring Skype in? Because it make the Windows Phone more attractive and functional. We can look at the comparison among Windows Phone, iOS, Android to get more insight.

Windows Phone lacks of some main apps that is unacceptable for smartphone, such as Video Calling, Multitasking, Visual Voicemail... That's why Microsoft try to acquire Skype to fill in this gap.

#### Windows Phone vs. iOS vs. Android

PC World	Window Phone 7	iOS (iPhone)	Android
Developer	Microsoft	Apple	Google
Multitasking	x	yes	yes
Copy/Paste	yes	yes	yes
Flash Support	yes	x	yes
Silverlight Support	x	x	x
HTML5 Support	x	yes	yes
Unified Inbox	x	yes	yes
Exchanged Support	yes	yes	yes
Threaded Email	x	yes	yes
Visual Voicemail	x	yes	yes
<b>Video Calling</b>	<b>x</b>	<b>yes (Face Time)</b>	<b>Third Party</b>
Universal Search	x	yes	yes
Internet Tethering	x	yes	yes
Removable Storage	x	x	yes
Facebook Integration	yes	x (Third Party)	Third Party
Twitter Integration	x	yes	Third Party
Folders	Hubs	yes	yes
Apps Organization	Alphabetical	Customizable	Customizable
App Store	10,000+Apps	300,000+Apps	90,000+App
Microsoft Office Support	Built-in	Third Party Apps	Third Party
Widgets	Tiles on Home Screen	x	Yes
Media Sync	Zune Software Mac & PC	iTunes Mac & PC	Direct File Transfer
X-Box Live Integration	Built-in	Via Third Party App	Via Third Party App

(Source: PCWorld)

Assuming that Skype seem to be appeared on Windows Phone in early 2012, users can use it for free or pay premium. Premium-paying premium will increase over time from 1% in 2012 to 7% in 2020. How much user pay average premium per year?

#### Xbox 360 Kinect + Skype = Magic

Microsoft's goal is to make the Xbox 360 the total entertainment package. "With Netflix (NFLX), gaming, music, and HD movie playback now available through the Xbox 360, Microsoft's Skype acquisition is likely an attempt to position the Xbox 360 and other Microsoft platforms as a standard communication vehicle, in addition to its entertainment offerings."

The Xbox has gained some proportion in market share on Nintendo after introducing a slimmer, less red-ring of death-prone Xbox 360 last summer and give its users the camera-based Kinect motion-capture controller to play with it, but the biggest boss rival between the

Xbox and the next level has been Sony's PlayStation 3. The two consoles are the only two high-definition platform in the industry and share many of the titles beloved by hard-core gamers – including Activision's (ATVI) Call of Duty series and Take Two's (TTWO) Red Dead Redemption and Grand Theft Auto franchises.

Each already has video chat services as well – Sony through its free PlayStation Online service and Microsoft through its \$60-a-year Xbox Live Gold online package – but that's about where the comparison ends after Microsoft's buyout of Skype. Skype partnership is a big step for Xbox Live that Kinect can only enhance, giving Microsoft a nice advantage over Sony, but adds that online gaming probably wouldn't be the most effective use of the Xbox's newest feature.

"Skype functionality will be pretty beneficial to the Xbox Live experience, and the technology will probably enhance in-game chat and video," Pachter said. "We're not sure that most of us want to see our online opponent, who may be called Conan the Barbarian and in reality is an 11 year-old girl."

Just as the addition of ESPN content to Xbox Live Gold last year made Microsoft's offerings increasingly vital, Skype only broadens the Xbox's appeal as an entertainment hub. It recognizes that the modern living room increasingly involves multitasking on laptops, tablets and smartphones and that Apple's already addressing those multiscreen consumers by putting gaming, movie and other entertainment applications only a finger swipe away in the App Store.

*By running Skype's common thread through all of its devices, Microsoft not only provides the kind of cross-platform functionality Sony's wanted for its PlayStation, Bravia television and voice and video conversation that Sony and partners such as Google (GOOG) will likely have to build from scratch. By integrating Skype, Xbox owners can suddenly videoconference from their living room to any Skype user in the world, so it makes the Xbox 360 more of an open system than before". Now you should imagine that you play game, you chat with your friends, face-to-face communication even though your friends are not near you (such as you are in New York, but you can see the counterpart in China playing with you even though you don't know about him or her) that make Xbox seem to be more attractive and friendly, open.*

#### Hardware Annual Summary

Hardware Annual Summary (in millions of units) per console per year						
2010						
Pos	Console	Americas	Japan	EMEA	Worldwide	Worldwide (%)
1	DS	9.65	2.87	8.39	20.91	25.89%
2	Wii	8.64	1.66	7.34	17.64	21.84%
3	PS3	5.54	1.55	7.3	14.39	17.82%
<b>4</b>	<b>X360</b>	<b>8.31</b>	<b>0.21</b>	<b>5.09</b>	<b>13.61</b>	<b>16.85%</b>
5	PSP	2.27	2.88	4.25	9.4	11.64%
6	PS2	1.87	0.09	2.86	4.81	5.96%
<b>Total</b>		<b>36.28</b>	<b>9.27</b>	<b>35.21</b>	<b>80.76</b>	100%
2009						
1	DS	11.85	3.98	12.35	28.18	31.63%
2	Wii	10.49	2.02	8.7	21.21	23.80%
3	PS3	4.96	1.83	6.21	13	14.59%
<b>4</b>	<b>X360</b>	<b>5.56</b>	<b>0.34</b>	<b>4.24</b>	<b>10.14</b>	<b>11.38%</b>
5	PSP	2.98	2.28	5.13	10.39	11.66%
6	PS2	2.68	0.22	3.28	6.18	6.94%
<b>Total</b>		<b>38.52</b>	<b>10.67</b>	<b>39.91</b>	<b>89.1</b>	100.00%

Pos	2008					
1	DS	11.6	4.25	14.09	29.94	30.92%
2	Wii	11.37	3.02	9.9	24.29	25.09%
3	PS3	4.11	1.07	4.75	9.93	10.26%
4	<b>X360</b>	<b>5.64</b>	<b>0.35</b>	<b>4.9</b>	<b>10.89</b>	<b>11.25%</b>
5	PSP	3.44	3.8	5.55	12.79	13.21%
6	PS2	3.5	0.5	4.99	8.99	9.28%
<b>Total</b>		<b>39.66</b>	<b>12.99</b>	<b>44.18</b>	<b>96.83</b>	100.00%
Pos	2007					
1	DS	9.93	7.21	12.14	29.28	34.52%
2	Wii	7.39	3.68	5.32	16.39	19.33%
3	PS3	2.84	1.22	3.65	7.71	9.09%
4	<b>X360</b>	<b>5.06</b>	<b>0.26</b>	<b>2.53</b>	<b>7.85</b>	<b>9.26%</b>
5	PSP	4.17	3.06	5.13	12.36	14.57%
6	PS2	4.8	0.81	5.61	11.22	13.23%
<b>Total</b>		<b>34.19</b>	<b>16.24</b>	<b>34.38</b>	<b>84.81</b>	100.00%

Source: [http://www.vgchartz.com/hw\\_annual\\_summary.php](http://www.vgchartz.com/hw_annual_summary.php)

According to table, we can extract some information that it's useful for us to make assumptions for consoles hardware market share in the near future.

#### Average Sales and Geometric Average of Xbox

	2007	2008	2009	2010
Total Sales	84,81	96,83	89,1	80,76
<b>Average Sales</b>	<b>87,875</b>			
X360 (%)	9.26%	11.25%	11.38%	16.85%
Change (%)	0	1.99%	0.13%	5.47%
<b>Geometric Average (%)</b>	<b>1.90%</b>			

We assume that Xbox 360 will increase at the pace of Geometric Average for the next 5 years and Skype will be incorporated into Xbox 360 and make it more attractive to customers. It will help Xbox 360 to have a temporary success against Nintendo Wii and PS 3 because of high-quality HD webcam, videoconferencing and other features. The sales of Xbox 360 will be added 0% to 1% from 2012 to 2015 before any competitor catch up this temporary advantage of Xbox 360.

#### Market Share of X360 until 2015

	2011	2012	2013	2014	2015
<b>Average Sales</b>	88	88	88	88	88
<b>X360 (%)</b>	16.95%	18.85%	20.75%	22.65%	24.55%
<b>Synergy of Skype</b>	<b>0.00%</b>	<b>0.25%</b>	<b>0.50%</b>	<b>0.75%</b>	<b>1.00%</b>
<b>Total X360 (%)</b>	16.95%	19.10%	21.25%	23.40%	25.55%
<b>Sales Units</b>	<b>14.916</b>	<b>16.808</b>	<b>18.7</b>	<b>20.592</b>	<b>22.484</b>

Now we convert this sales unit into revenue that Xbox 360 would be taken by the temporary advantage that Skype contributes to Xbox 360.



**Total Revenue until 2015**

	2011	2012	2013	2014	2015
<b>Average Sales</b>	88,000	88,000	88,000	88,000	88,000
<b>Synergy of Skype</b>	0%	0.25%	0.50%	0.75%	1.00%
<b>Sales Units</b>	0	220	440	660	880
<b>Xbox Price per Unit</b>	250	250	250	250	250
<b>Total Revenue per Year</b>	<b>0</b>	<b>55,000</b>	<b>110,000</b>	<b>165,000</b>	<b>220,000</b>
<b>Total Revenue</b>	<b>550,000</b>				

The total revenue that Skype will contribute to Xbox is \$550 million until 2015. Combined with the revenue of Windows Phone in previous calculation of \$399 million, the total synergy is \$949 million.

The intrinsic value of Skype is \$4.076 billion so the total value of Skype is \$5.025 billion. This is smaller than the deal package that Microsoft pays for Skype.

**Benchmarks (proxies)**

**Rumors (not official):** Facebook and Google wants to either buy Skype or want to have a joint venture, the news was coming in the top news portal Reuters which have much more chances of being true.

Facebook Chief Executive Mark Zuckerberg seems to be busy having some internal discussion about *buying Skype at a price range of between \$3 billion and \$4 billion*, and again another source has been telling that Facebook is planning to have a joint venture to the Skype to give a better service for all the users for both Skype and Facebook. Facebook is not only the company that has been trying to deal with Skype because the same sources believe Google is also looking for a joint venture with Skype though no official confirmation is out yet but we might see some developing news into it very soon.

**According to Aswath Damodaran**, a Professor of Finance at the Stern School of Business at New York University (Kerschner Family Chair in Finance Education), and Skype is a private business and we know little about the insides of the financial statements. It is widely reported, though, that Skype had operating losses of \$7 million on revenues of \$ 860 million in 2010. Taking those numbers as a base, he tried to value Skype, making what he thought were very optimistic assumptions:

- Continued revenue growth of 20% (which was what they had last year) for the next 5 years and a gradual tapering down of growth to 3% in ten years.
- A surge in pre-tax operating margins to 30% over the next ten years; this margin is at the very upper end of the technology spectrum
- A decline in the cost of capital from 12% now (reflecting the uncertainty associated with young, growth businesses) to a cost of capital of a mature company in ten years

*With those assumptions, he estimated a value of \$3.8 billion for Skype.*

**Some investors carped that Microsoft** already had the technology to do this, or should have developed it itself, and might soon be overtaken.

“They paid a head scratcher of a valuation”, said Patrick Becker Jr., a principal at Becker Capital Management, which owns 1.5 million Microsoft shares.

*Becker said buying a software company should cost more like a multiple of five times revenue, which would imply a valuation closer to \$4.3 billion based on the company’s 2010 revenue.*

To make it more clear, have a look at the poll below posted by Mashable, Microsoft just paid too much for buying Skype! Almost 65% of the web users think that Skype got overpaid.

**Conclusion**

The acquisition between Microsoft and Skype is one of the most controversial cases. We lack of deep insiders of Skype make us have to use outside factors to simulate the DCF Model that

may lead to errors. According to the analysis of Skype's financial statement, We estimated cost of capital is 9.5%, we find out that the intrinsic value of Skype is about \$4.076 billion that is much smaller than the price Microsoft paid for Skype. Combined with the analysts and benchmark, We conclude that Microsoft overpaid for the intrinsic value of Skype. However, Microsoft will have benefits when Skype incorporated into Microsoft products such as Xbox and Kinect, Windows Phone operating system, Lync and Outlook, Window Live Messenger. Two prominent benefits observable Skype will take back for Microsoft is that Skype is marrying with Xbox and Windows Phone, two potential market shares. If Microsoft can take over two segments, it will have a lot of money.

However, it's not so simple. According to information available, We try to forecast what will happen in these segments to figure out how big synergy that Skype can create? It's kind of simple model but I tried to make it clear, concrete and easy to understand.

There are also other reasons to explain for this acquisition:

- Microsoft has so much cash so it's easy to overpay for something
- Bill Gates, the face of Microsoft, was strongly in favor of Skype
- Microsoft's strategic policy relating to taxes
- So confident in synergy between Skype and Microsoft

With very optimistic about this couple, We think Skype will be successful division of Microsoft and will bring competitive advantage against Microsoft's competitors.

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