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The Time Warner and AOL merger

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Abstract

The corporate world has experienced Merger movements since the beginning of the XX century when the first wave of Mergers & Acquisitions occurred. These Merger movements always represent intent from companies to take advantage of existing market opportunities or leverage the competitive position of the combined company, always with the final objective of creating value for the shareholders.

The Merger between Time Warner and AOL occurred in 2000 and represented the combination of a Media and Entertainment Conglomerate (Time Warner) with a company operating in the Internet segment (AOL) that was experiencing some outstanding growth.

The present Case Study tries to firstly identify the situation of the Media and Entertainment Market and its major segments at the time of the Merger, including the positioning of both companies as well as its motivations to merge.

The terms of the deal are analyzed through a Free Cash Flow to the Firm (FCFF) valuation of both companies at the time of the Merger that leads to the conclusion that they were overvalued and the price paid was too high. The Merger analysis was complemented with a Market Multiples overview of both companies and an assessment of the Stock Market reaction on the announcement of the Merger that showed the lack of ability of the Market to take a clear view of the full impact of this M&A movement.

Key words: Free Cash Flow to the Firm (FCFF), Market Multiples, Merger, Stock Market

JEL Classification: G30; G34

Resumo

O mundo empresarial tem assistido a movimentações relativas a processos de Fusão desde o início do século XX, aquando da ocorrência da 1ª vaga de Fusões & Aquisições. Estas movimentações emergem da intenção das empresas de aproveitamento de oportunidades existentes no mercado ou valorização da sua posição competitiva através da combinação de duas organizações, com a criação de valor para os accionistas como objectivo final.

A Fusão entre a Time Warner e a AOL ocorreu em 2000 e representou a combinação de um gigante de Media e Entretenimento (Time Warner) com uma empresa que operava no segmento de Internet (AOL), que vinha assistindo a um crescimento exponencial.

O presente Caso de Estudo tenta identificar, em primeiro lugar, a situação do Mercado de Media e Entretenimento e os seus principais segmentos no momento da incorporação, incluindo o posicionamento de ambas as empresas e as suas motivações para a Fusão.

Os termos do acordo são analisados através de uma avaliação com base no método *Free Cash Flow to the Firm* (FCFF) de ambas as empresas no momento da Fusão, o que permitiu a conclusão de que ambas estavam sobrevalorizados e que o preço de aquisição foi demasiado alto. A análise da Fusão foi complementada com uma visão dos Múltiplos de Mercado das duas empresas e uma avaliação da reacção de Mercado de Capitais ao anúncio da fusão, que mostrou falta de capacidade para ter uma visão clara do impacto total desta movimentação empresarial.

Palavras-chave: *Free Cash Flow to the Firm* (FCFF), Fusão, Múltiplos de Mercado, Mercado de Capitais

Classificação JEL: G30; G34

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Glossary

AOL – America Online

CAGR – Compound Annual Growth Rate

CAPEX – Capital Expenditures

CAPM – Capital Assets Pricing Model

CBS – Columbia Broadcasting Systems

CD – Compact Disk

CEO – Chief Executive Officer

CFO – Chief Financial Officer

CMGR – Compound Monthly Growth Rate

COO – Chief Operating Officer

D – Market Value of Debt

DSL – Digital Subscription line

DVD – Digital Video Disk

E – Market Value of Equity

EBITDA – Earnings Before Interest Taxes Depreciation and Amortization

EMI – Electronics and Musical Industries

EV – Enterprise Value

FCFE – Free Cash Flow to Equity

FCFF – Free Cash Flow to the Firm

GDP – Gross Domestic Product

IPO – Initial Public Offering

M&A – Mergers & Acquisitions

MGM – Metro-Goldwyn-Mayer

NPV – Net Present Value

NWC – Net Working Capital

PBV – Price to Book Value

PC – Personnel Computer

PE – Price to Earnings

PS – Price to Sales

Rd – Cost of Debt

Re – Cost of Equity

Rf – Risk-free Rate

ROA – Return on Assets

ROE – Return on Equity

RPC – Return on Permanent Capital

S&P – Standard & Poor's

T – Tax Rate

TMX – Time Warner

USA – United States of America

USD – United States Dollar

WACC – Weighted Average Cost of Capital

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1. Introduction

Mergers & Acquisitions is a very complex topic with many interactions between disciplines with a wide different range of application. So, this topic experts frequently state that "understanding M&A involves an understanding of a full range of topics, including management, finance, economics, business law, financial and tax accounting, organizational dynamics, and the role of leadership (DePamphilis, 2010: 32)". In the present Case Study I will to focus on the topics related to management and finance that cover a significant part of an M&A deal.

The America Online Inc. (AOL) and Time Warner Inc. (TMX) merger is almost every time classified as a complete failure. Although this is taken as a truthful sentence, the same cannot be applied to the diversity of theories stating the reasons behind the failure. There is a wide scope of different theories and some of them give opposite or incoherent multiple reasons for the failure.

One of the main theories states that AOL, which was the acquiring party, vastly overpaid for Time Warner and it's quite common to see this sentence reproduced in every document regarding the merger. But what is not common to see is the financial valuation and market analysis that supports this sentence.

Other common heard theory is that the proposed synergies by the top management of the two companies never happened and were a complete failure but once again it's almost impossible to find complete financial analysis that supports this theory. The failed synergies are almost every time justified by stock graphs of the merged company compared with its peers but this is a very simple way of analyzing a merger deal and can lead to mistaken conclusion, only taking into account the market response to the merger.

Nevertheless, in order to take a clear strategic view on the failure causes it's very important to analyze the market where both companies operated before the merger. The market analysis starts with an economic overlook of USA in the years right before the merger **(Chapter 2)** in order to evaluate how the macroeconomic situation led to the decision about the effectiveness of the merger in 2000.

After the economic overview it is crucial to assess the evolution of the Media and Entertainment Market **(Chapter 3)** where both companies operated although in different segments. This chapter describes the segments that experienced the greatest growth and tries to explain the reasons behind that. The market analysis will be very important to assess if there were any core segment for AOL or Time Warner that could be facing a "*bubble*" situation. This analysis will be also important in the identification of possible market tendencies that led to the need of a repositioning strategy by both companies.

Taking the analysis into a corporate level, it is described the situation of both companies before the mergers **(Chapter 4)** at three dimensions of measurement: history, market positioning and financial. In the history dimension it is important to briefly describe the genesis and development of the two companies as well as the most important moments of their history. Regarding the financial dimension of analysis the objective is to assess the situation of both companies in the years before the merger by different categories like Liquidity, Profitability, Debt, Operating Performance and Growth. In the market positioning dimension the market situation of both companies will be measured, not forgetting about their competitive positioning in the numerous segments where they operated.

Subsequent to the economic and market environment characterization and analysis, the Case Study can take a clear focus on the Corporate Valuation and Mergers & Acquisitions topics. Firstly it is important to review the existent literature **(Chapter 5)** on the most used and relevant corporate valuation methods, namely the Free Cash Flow to the Firm, the Free Cash Flow to the Equity and the Market Multiples. The explanation of these models imposes a clarification of some methodologies used in its valuation, for example the Cost of Equity (Re), Cost of Debt (Rd) or the Weighted Average Cost of Capital (WACC). The corporate valuation revision allows us to understand better the next topic regarding Mergers & Acquisitions. This topic will briefly describe the history of M&A, namely regarding the waves of deals, and focus on other points concerning the reasons for M&A. types of M&A, types of deals, valuation and synergies.

The literature revision explanation is followed by the central chapter of this Case Study that is the one directly related with the merger **(Chapter 6)**. Here are described the main issues

regarding the deal between Time Warner and AOL namely the price, terms of the merger and board composition. In this chapter it is presented a proposed valuation of the two companies as of 31st of December 1999, just eleven days before the announcement of the merger. This valuation will be applied using the Free Cash Flow to the Firm and market multiples method and verified in a sensitivity analysis.

The corporate valuation part is complemented with an overview on how the market has responded to the announcement of the merger **(Chapter 7)**, namely if it has accounted for all the potential synergies in the evolution of the stock price of both companies. Once again, this market perspective on the merger is presented has a balance of the corporate level analysis that permits an clear view of both the intern (corporate) and extern (market) view of all the implications of the Merger.

2. USA economic outlook (1995-1999)[1]

The market and corporate analysis prior to the merger needs to be framed by the USA economic situation as of 1999. This analysis can be helpful in the scrutiny of the reasoning behind the merger and the expected evolution of the economic situation through the first years of the merged company. The economic outlook will be divided into six analyses: gross domestic product, personal consumption, residential & non-residential investment, employment & productivity, prices & consumption and stock market.

2.1 Gross Domestic Product

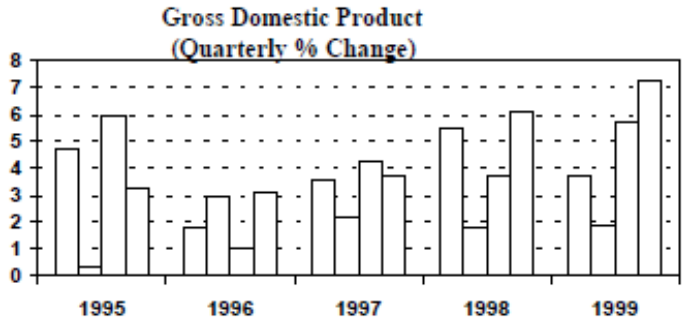

Figure 1 - Gross Domestic Product (quarterly % change) in the USA from 1995 until 1999

As of 1999 the United States economy grew at an annual rate of 4,2%. The analysis of the quarterly percentage growth permits the conclusion that it was inconstant through 1999 with a break between the almost 2% growth of the 2nd quarter and the 7% growth of the 4th quarter. The GDP percentage change grew between 1995 and 1999 in a consistent way and the differences between the percentage changes in the four quarters were also consistent, since the 2nd quarter is almost the one with the lowest growth and the 4th quarter the one with the highest.

[1] All the economic data from USA, including the figures, is given by the study "Economic Survey of the United States" by the Federal Reserve of the United States of America published in 2000

2.2 Personal consumption

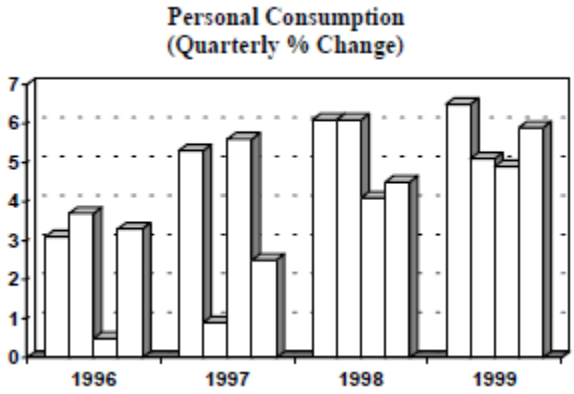

Figure 2– Personal consumption (quarterly % change) in the USA from 1996 until 1999

The personal consumption raised 5,3% in 1999 after the increase of 4,9% in 1998. As we can see by the chart graph above the personal consumption had a pretty reasonable increase from 1996 to 1999 as well as a more consistent growth between the four quarters of the year as we move on from 1996 to 1999. These results show the high level of optimism of consumers in USA as of 1999.

2.3 Residential and non-residential investment

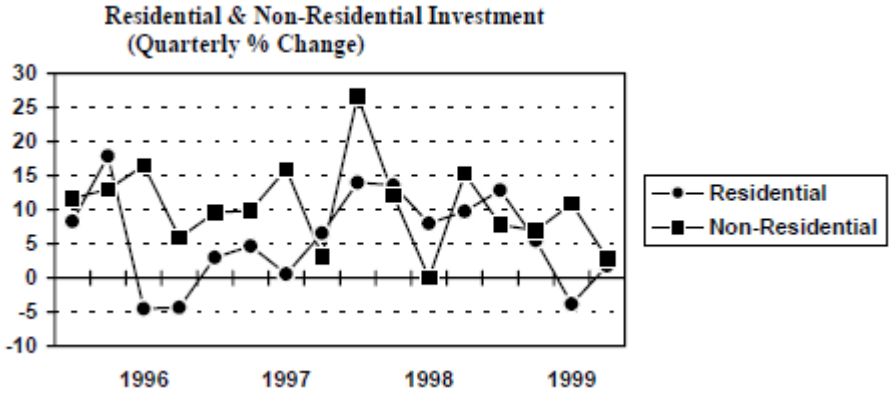

Figure 3 – Residential & non-residential investment (quarterly % change) in the USA from 1996 until 1999

Before analyzing the investment situation it is crucial to explain the difference between residential and non-residential investment. The residential investment is commonly regarded as the purchase of new houses or any other assets by the average population and

the non-residential investment is made by companies and can be investments such as the purchase of a new fabrication facility or of a new offices building. By looking at the graph I can state that both the residential and the non residential investment had a quarterly percentage change very inconsistent through the period from 1996 until 1999. The residential investment ranged from a minimum of -5% in 3rd quarter of 1996 to maximum of 17% in the 2nd quarter of 1996 and ended the 4th quarter of 1999 slightly over 2%. Regarding the non-residential investment it ranged from a minimum of 0% in the 3rd quarter of 1998 to a maximum of 25% in the 1st quarter of 1998 and ended the 4th quarter of 1999 slightly over 2%, aligned with the residential investment.

2.4 Employment and productivity

The unemployment rate in the USA at 1999 reached a historical percentage of 4,2% - the lowest rate since 1969 – which represented a decrease from the 4,5% rate of 1998. Regarding productivity, labor costs per unit of output rose 1,1% in 1999, what compares with the increase of 2% verified in 1998.

2.5 Prices and inflation

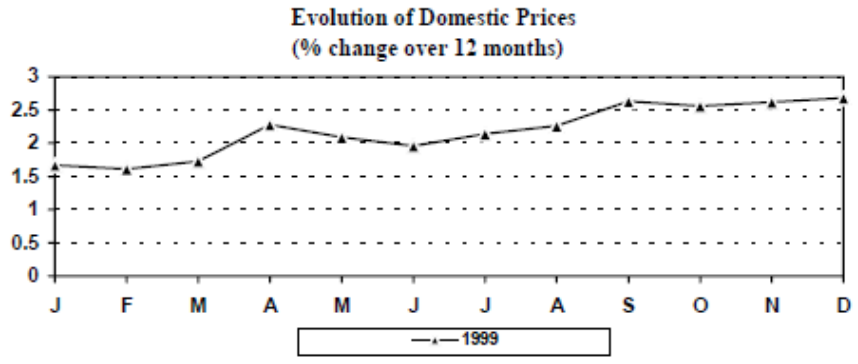

Figure 4 – Evolution of domestic prices (% change over 12 months) in the USA in 1999

The domestic prices percentage change in 1999 ranged from a minimum of 1,5% in February to a maximum of +,6% in December. Regarding inflation it increased from 1,6% in 1998 to 2,7% in 1999.

2.6 Stock market

	Dow Jones Industrial Average	S&P 500
1995	4,493.76	541.72
1996	5,742.89	670.50
1997	7,441.15	873.43
1998	8,625.52	1,085.50
1999	10,464.88	1,327.33
January	9,345.86	1,248.77
February	9,322.94	1,246.58
March	9,753.63	1,281.66
April	10,443.50	1,334.76
May	10,853.87	1,332.07
June	10,704.02	1,322.55
July	11,052.22	1,380.99
August	10,935.47	1,327.49
September	10,714.03	1,318.17
October	10,396.88	1,300.01
November	10,809.80	1,391.00
December	11,246.36	1,428.68

Table 1– Index values evolution (Dow Jones an S&P) from 1995 until 1999

The stock market in 1999 experienced a value increase as we can see by the raise in the S&P 500 index value points and the raise in the Dow Jones Industrial Average points. The Down Jones Industrial average rose from 8.626 points in 1998 to 10.465 points in 1999, what represents a 21% growth rate. In 1999, the Dow Jones Industrial Average rose from 9.346 in January to 11.246 points in December, representing a Compound Monthly Growth Rate (CMGR) of 1,6%. In what concerns the S&P 500 index, it came from 1.0856 points in 1998 to 1.327 points in 1999 what represents a 22% growth rate. Also in 1999, the S&P index rose from 1.248 points to 1.429 points representing a Compound Monthly Growth Rate (CMGR) from January until December of 1,1%.

3. Media and entertainment market in the USA (1997-2000)[2]

In order to evaluate the market historical evolution and tendencies that might have a role in the failure of the merger, it is crucial to correctly segment the markets where the companies operate. Time Warner Inc. operates in both the entertainment and media markets as conglomerate since it has many subsidiaries in the different segments of the market gathered in the same corporate structure. America Online Inc. is a global internet services provider.

In 2000 the Global Entertainment and media market had a total value of 1.047.506 million USD with a 5,3% CAGR regarding the period between 1997 and 2000. The USA was the biggest market and accounted for 42% of the global value. As of 2000 the Media and Entertainment Market in the USA had a value 435.922 million USD, with a CAGR of 6,1% for the period 1997-2000. It was the most developed Entertainment and Media Market worldwide with the biggest CAGR for the latest years.

3.1 Media and entertainment market segments

Regarding the different segments of the market in the USA, we can identify the TV Distribution, Educational & Professional Books & Training and the Newspaper Publishing as the segments with the biggest value, accounting for 45% of the global value of the market. Although these were the three most important segments only one of theme was considered at the time as a High-impact segment that is defined in the PricewaterhouseCoopers's report "Global Entertainment and Media Outlook 2002-2006" as a segment that is "being thrust into change at an accelerated rate and will experience the most volatility (PwC, 2006: 14)". The report classified the following segments with High-impact in the market:

- **Recorded music:** it was believed that the segment would face difficult times in the years after 2000 due to the raise in downloads of recorded albums in the internet.

[2] The information regarding the media and entertainment market and it's segments is from the PricewaterhouseCoopers's report "Global Entertainment and Media Outlook 2002-2006" except the information where its stated otherwise

This could contribute to the decrease of importance of this segment and a change of the strategy of the major players like Time Warner;

- **Television distribution:** the digital cable and digital terrestrial television offerings were growing at the time and this was seen as a great opportunity of growth for the companies operating in this segment;
- **Internet advertising and access spending:** it was believed that internet service providers would be competing with cable Internet providers. The opportunities of growth of this segment as of 2000 will be further explained since it had a major impact in the reasons for the Time Warner and AOL merger.

3.2 Advertising spending market

One of the main drivers of the Entertainment and Media Market is undoubtedly the advertising spending. This is the second most important source of revenue of the companies operating in this market. As of 2000 the Advertising Spending Market had a total value of 161.272 millions of USD and have had a CAGR very similar to the Media and Entertainment Market for the period between 1997 and 2000 (5,8%). The most important sub-segments of the advertising segment that accounted for 65% of its value were:

- **Newspapers:** value of 48.671 millions of USD in 2000 and a 1997-2000 CAGR of 3,3%. This is the segment that had the lowest growth and this fact can be explained by the increasing importance of other advertising segments like the Internet;
- **Cable systems and TV stations:** value of 29.046 millions of USD in 2000 and a 1997-2000 CAGR of 4,5%;
- **Television networks:** value of 27.599 millions of USD in 2000 and a 1997-2000 CAGR of 7,3%. It was the segment that had the highest growth in the end of the 21st century without taking into account the outstanding Internet segment.

The table presented bellow describes the consumer spending per capita in the USA as of 1999. The segments with the highest consumer spending per capita were the Basic Cable TV, Books and Home video.

Average U.S. consumer spending per person, 1999	
Basic Cable TV	$ 189
Books	89
Home video	98
Recorded music	63
Daily newspapers	52
Magazines	40
On-line/Internet access services	40
Movies in theaters	32
Electronic games	21

Table 2 – Average consumer spending per person in the USA at 1999[3]

3.3 Consumer/ end-user spending market

The most important source of revenue for the companies of the Entertainment and Media market is the consumer/ end-user spending market. Like it was expected, the consumer/ end-user market in the USA had a growth for the period between 1997 and 2000 very similar to the one verified in the Entertainment and Media Market (5,4%). The driver segments of the market that together accounted for almost 65% of the market were:

- **Educational, professional books and training:** value of 67.041 millions of USD and a CAGR for the period 1997-2000 of 3,11%. This was a pretty stable segment since the education is always a priority for consumers even when they are facing problems in their income;
- **TV distribution:** value of 41.110 millions of USD in 2000 and a CAGR for the period 1997-2000 of 7,5%. This was a sustainable segment with a relatively high expectation of growth;
- **Business information:** value of 39.950 millions of USD in 2000 and a CAGR for the period 1997-2000 of 5,6%;
- **Filmed entertainment:** value of 26.557 millions of USD in 2000 and a 1997-2000 CAGR of 5,3%. In the table below are listed the top budget movies of the nineties, so we can take a clear view of the consumer spending on this sector.

[3] This table is from the Plunketts's "2000-2001 Entertainment and Media Industry Almanac"

Some Top Dollar Movies of the 1990s			
Title	**Year**	**Budget (in mill.)**	**Domestic box office gross**
Titanic	1997	$200	$600.8
Waterworld	1995	175	88.2
Speed 2	1997	160	48.1
Armageddon	1998	140	201.6
Lethal Weapon IV	1998	125	129.8
Godzilla	1998	120	136.3
Wild Wild West	1999	120	113.8
Batman & Robin	1997	120	107.3
True Lies	1994	105	146.3
Space Jam	1996	105	90.4
Stuart Little	1999	103	97.0
Eraser	1996	100	101.3

Table 3 - Top dollar movies between 1990 and 2000 in the USA[4]

3.3 Internet segment

Moving the analysis into a clear focus on the Internet Advertising and Access Spending segment, we can identify this as the segment with the greatest growth opportunities at the time. This was the segment with the greatest growth for the period in analysis with a 1997-2000 CAGR of an outstanding 37,9%. The growth number gets even more impressive if we only consider the advertising spending - one of the two most important sources of revenue of the media and entertainment market - where the internet segment had a 55,4% growth rate in the considered time period and a value of 8.225 millions of USD in 2000. Regarding the consumer/ end-user spending in the Internet segment it had a 1997-2000 CAGR of 26,3% and a value of 11.695 in 2000. The difference between the growth registered in the Internet advertising spending and the Internet consumer/ end-user spending can be explained by the fact that as of 2000 there were not much information and services that needed to be paid in the internet.

Regarding the users of Internet in the United States as of 1999 there was the following split:

[4] This table is from the Plunketts's "2000-2001 Entertainment and Media Industry Almanac"

Internet Users in the USA 1999 (millions)	
Active users	60
At least once a month	40
Less than 1 time a month	30
Total	**130**

Table 4 – Internet users in the USA as of 1999[5]

Additionally, there could be identified as of 1999 the following tendencies regarding the expansion of the internet segment for the upcoming years:

- The internet would become the leading edge of delivery for all types of entertainment like books, magazines, streaming video, radio, recorded music, news, games, advertising and art;
- The high-speed and wireless methods of Internet access (DSL telephone lines and satellite downlink) would become widespread and permit the evolution of the delivery and interactivity of the web services;
- It was believed that the Internet would permit the creation of efficiencies and the elimination of wasted time. This argument was supported by the idea that when we use the internet to do shopping, search for directions or information we are saving time that we would waste doing the same things using other means;
- The market of computer-related devices like modems, processors, memory chips, game-playing consoles were growing and it was believed that it would supplant the home PC's market at a near future. As of 1999 nearly 40% of U.S. households owned a videogame console;
- The market of computer-related devices was expected to reach sales of 18,5 million units as of 2001 and the market of home PC's was expected to reach sales of 15,7 million units as of 2001. Experts believed that the computer-related devices would offer almost every service that a home PC's offer and some said that an example of this fact was the ability of the Playstation 2 to play DVD's and CD's.

[5] The information regarding the internet users is from the Plunketts's "2000-2001 Entertainment and Media Industry Almanac"

4. Pre-merger corporate situation

4.1 Time Warner

4.1.1 History[6]

The early days of Time Warner began with the Warner Brothers company foundation. Warner Brothers was formally registered in 1923 in Hollywood but its history began earlier, accordingly to the legend, when four brothers convinced their father to sell his golden wristwatch and to buy the company Edison-cinetoscope – one of the first cinematographs companies in the USA. The first activity of Warner Brothers was going from town to town showing films to rural populations of USA. Warner Brothers went public in 1930 and launched their cartoon series such as Looney Tunes that gain a huge popularity among the public. After the huge success of the cartoon series Warner Bros. diversified its business to record music by acquiring record labels.

The company only changed its name to Time Warner Inc. in 1989 when Warner Brothers merged with a publishing house name Time. The deal defined Time has the acquirer and Warner Bros. as the target company and was worth 14 billion USD. The merged company named Time Warner Inc. became a media and entertainment conglomerate with interest over the segments of record labels, motion pictures, television products, networks & distribution, studio facilities and books & magazines publishing. As of 1996 Time Warner wanted to become a major player at the cable television network so it acquired Turner Broadcasting Systems and became the 2nd largest player in the cable television market.

These are the most important moments of the Time Warner history from 1917 until 2000:

- **1917:** The Warner Brothers open their first West Coast Studio;
- **1923:** The Company is registered under the name Warner Brothers and incorporates its distribution and production businesses;
- **1930:** Warner Brothers launches the Fortune magazine focused on global business;
- **1936:** Another magazine called Life its launched with a focus on photo journalism;

[6] The information regarding the history of Time Warner is from the paper "The AOL/Time Warner Merger – Where Traditional Media Met New Media" by Kamal Verma

- **1937:** Detective Comics (DC) is created and launched its first number;
- **1940:** Bugs Bunny, one of the most popular characters of Time Warner makes its first appearance in the short "A Wild Hare";
- **1952:** House and Home magazine is launched with a focus on interiors. The Company enters the television industry by purchasing KOB-TV company;
- **1954:** The Sports Illustrated magazine is launched;
- **1958:** Warner Brothers founds its record label company called Warner Bros. Records;
- **1961:** The Company expands its business by founding its book division by the name Time-Life, Inc.;
- **1967:** The book division acquires Little, Brown and company;
- **1970:** The subsidiary company Warner Communications purchases Elektra Records to reinforce the company's presence in the music industry;
- **1974:** Another magazine is launched called People and with a focus on celebrity and human-interest stories;
- **1975:** Warner Communications purchases Atari – a company focused on arcade games, video game consoles and home computers - for 28 million USD;
- **1978:** Warner Communications acquires the cable operator American Television & Communications (ATC);
- **1988:** Time Warner Inc. is launched after Time merges with Warner Communications. TNT cable network is launched;
- **1996:** Time Warner acquires Turner Broadcasting Systems a media conglomerate at the time;
- **2000:** AOL and Time Warner announced their merger.

4.1.2 Market positioning

4.1.2.1 Media and entertainment market[7]

As of the end of 1999 Time Warner was the biggest Entertainment Conglomerate if we only consider the Market Capitalization of the various players. The ranking of the Entertainment Conglomerate players in 1999 is given by the table below:

Entertainment Conglomerates in 1999	
Company	**Market Cap (Billion USD)**
Time Warner	80,8
Walt Disney	60,8
Sony	52,8
CBS	33,9
News Corp.	28,5
Seagram	22,2
Viacom	31,0
EMI	6,7
MGM	2,6

Table 5 – World entertainment conglomerates in 1999 in terms of Market Capitalization (billions of USD)

Although all companies operate in Entertainment Conglomerate it is important to actually know the split of the main players between the Entertainment market segments:

- **Time Warner:** operates in the Cable TV, Publishing, Movies and Music segments;
- **Walt Disney:** operates in the Movies, TV and Theme Parks segments;
- **Sony:** operates in the Electronics, Music, Movies and Insurance segments;
- **CBS:** operates in the TV and Radio segments;
- **News Corp.:** operates in the Publishing, Movies and TV segments.

Although the Market Capitalization lets us conclude which are the most valuable players in the market we have to analyze the companies in terms of its annual revenues in order to know which of them are the biggest. As of 1999 these were the major Media and Entertainment players in terms of revenues:

[7] The information regarding the players of the media and entertainment market and its segments is from the article "Taking Apart the Entertainment Conglomerate" by David Kathman and published by Morning Star in 1999

Entertainment Conglomerates in 1999	
Company	**Revenues (Billion USD)**
Sony	53,0
Walt Disney	23,8
Time Warner	14,6
News Corp.	12,6
Viacom	11,6
Seagram	10,9
CBS	6,8
EMI	3,8
MGM	1,1

Table 6 – World entertainment conglomerates in 1999 in terms of Revenues (billions of USD)

Time Warner was the 3rd largest company concerning the revenues behind Walt Disney and Sony. The major part of its revenues came from its various TV operations as we can verify by the following revenues split:

Time Warner revenues split in 1999	
Operation	**% of Revenues**
Cable TV	49
Movie Studios	21
Publishing	17
Record Labels	12
Television	1

Table 7 – Time Warner's revenue split by business in 1999

4.1.2.2 Media and entertainment segments

Regarding the most important segments of the Media and Entertainment market this was the positioning of Time Warner as of 1999, shortly before the announcement of the merger:

- **Movies Segment.** In 1999 Disney was the box-office leader with Time Warner very close behind. Both companies acquired well establish and growing independent studios, Disney bought Miramax and Time Warner bought Turner Broadcasting.

Movies segment in 1999		
Company	**Studios**	**Market Share (%)**
Walt Disney	Touchstone, Hollywood, Miramax	19,7
Time Warner	Warner Bros., New Line, Castle Rock	19,5
News Corp.	20th century Fox	14,1
Seagram	Universal	13,2
Viacom	Paramount	10,7
Sony	Columbia, Tristar	4,7
MGM	MGM, United Artists	2,3

Table 8 – Competitive situation of the movies segment in the USA as of 1999

- **Television Segment.** This segment was facing a challenge because its companies were losing market share to cable TV and indirectly to the internet. As of 1999 Time Warner was the 5th major player in this segment with a rating share of 5% leveraged by its network WB.

Television segment in 1999		
Company	**Network**	**Ratings Share (%)**
CBS	CBS	15
General Electric	NBC	15
Walt Disney	ABC	13
News Corp.	Fox	11
Time Warner	WB	5
Viacom	UPN	3

Table 9 – Competitive situation of the television segment in the USA as of 1999

- **Music Segment.** In 1999 just five companies controlled all the music published in the USA. Time Warner was the 2nd largest player with a market share of 17,4%.

Music segment in 1999		
Company	**Top Labels**	**Market Share (%)**
Seagram	Island, Mercury, MCA, Geffen, A&M	26,5
Time Warner	Atlantic, Elektra, Rhino, Warner Bros.	17,4
Sony	Columbia, Epic, Sony Classical	16,9
Bertelsmann	Arista, RCA, BMG, Windham Hill	14,4
EMI	Capitol, EMI, Virgin	10,5

Table 10 – Competitive situation of the music segment in the USA as of 1999

- **Cable Modem Segment.** Regarding this segment Time Warner was the undisputed leader as of 1999 with 400.000 cable modem subscribers and an advantage to the closest companies of more than 100.000 subscribers.

Cable modem segment in 1999	
Provider	**Subscribers**
Time Warner	400.000
AT&T	294.000
Media One	278.000
Cox	259.770
Shaw	235.000
Rogers	215.200
Comcast	195.200
Charter	122.900
Cablevision	75.000
Videotron	66.000
Cogeco	57.500
Adelphia	53.000
RCN	25.000
Other	174.000
Total	**2.450.570**

Table 11 – Competitive situation of the cable modem segment in the USA as of 1999

4.1.3 Financial analysis[8]

In order to evaluate at a high-level the financial situation of the two companies in the years before the merger I selected 13 financial ratios divided into 5 categories of analysis. The categories and the objectives of analysis are the following:

- **Liquidity Measures:** evaluate the capability of the company to pay its short-term obligations;
- **Profitability Indicators:** assess how the company used its resources in order to generate profit and create value for its shareholders;
- **Debt Analysis:** estimate financing structure of the company and the permanent capital split between Debt and Equity. We can also evaluate the structure of debt defining the mix between short and long term obligations;

[8] The financial analysis was made using information regarding the Financial Statements of Time Warner present in the document "Registration of securities issued in business combination transactions Filed on 2/11/2000"

- **Operating Performance:** appraise the capacity of the company to turn the assets into revenues and the efficiency level of the conversion of revenues into profit;
- **Investment Valuation:** estimate the potential of an investment in the company.

The methodological basis to pick the ratios was constrained by the financial information that I had about the two companies for the years in analysis. As a methodological point of view I considered that only the Long-term Liabilities could be considered Debt. By this way I selected the following ratios to evaluate the financial performance of both companies:

- **Liquidity Measures:**
  - **(4.1) Cash Ratio** = $\frac{\textbf{Cash and equivalents}}{\textbf{Short-term Liabilities}}$**:** measures the amount of cash to cover the short-term obligations of the company.

- **Profitability Indicators:**
  - **(4.2) Return on Permanent Capital** = $\frac{\textbf{Net Income}}{\textbf{Total Equity+Total Liabilities}}$**:** evaluates the ability of the company to generate profits from its capital base that includes the Total Equity and Liabilities. This ratio completes the analysis subjacent to the Return on Equity;
  - **(4.3) Return on Equity** = $\frac{\textbf{Net Income}}{\textbf{Total Equity}}$**:** measures how much the shareholders have gained for the investment made on the company. This ratio also permits to conclude the capability of the company to turn the capital invested by the shareholders into profit;
  - **(4.4) Return on Assets** = $\frac{\textbf{Net Income}}{\textbf{Total Assets}}$**:** assesses how the company is employing its total assets to generate profit.

- **Debt Analysis:**
  - **(4.5) Debt to Assets** = $\frac{\textbf{Long-term Liabilities}}{\textbf{Total Assets}}$**:** assesses how the total assets of the company cover its obligations;

- **(4.6) Debt to Equity = $\frac{\text{Long-term Liabilities}}{\text{Total Equity}}$:** appraises the financing structure of the company by giving a comparison between the debt and equity financing;
- **(4.7) Capitalization = $\frac{\text{Long-term Liabilities}}{\text{Total Liabilities+Total Equity}}$:** evaluates the amount of debt financing as a percentage of the companies Permanent Capital;
- **(4.8) Liabilities Structure = $\frac{\text{Short-term Liabilities}}{\text{Total Liabilities}}$:** discloses the liabilities structure of the company by assessing the amount of obligations due in the short-term period as a percentage of the Total Liabilities.

- **Operating performance:**
  - **(4.9) Assets Turnover = $\frac{\text{Revenues}}{\text{TotalAssets}}$:** measures the amount of revenues as a percentage of the Total Assets of the company and represents the companies efficiency in its using of assets to generate revenues;
  - **(4.10) EBITDA Margin = $\frac{\text{EBITDA}}{\text{Revenues}}$:** measures the companies operating profitability by calculating the EBITDA as a percentage of the Total Revenues of the company;
  - **(4.11) EBITDA to Short-term Debt = $\frac{\text{EBITDA}}{\text{Short-term Debt}}$:** evaluates how the company could use its EBITDA to face the obligations due in the short-term period.

- **Investment Valuation:**
  - **(4.12) Payout = $\frac{\text{Dividends per share}}{\text{Earnings per share}}$:** assesses the amount of earnings paid as dividends to the shareholders. Sometimes the analysis of this ratio can be tricky because some companies pay dividends to shareholders even when the company is having loss instead of profit;
  - **(4.13) Plowback = 1-Payout:** measures the amount of income retained by the company after the distribution of dividends. Like the payout ratio, the plowback ratio can be sometimes tricky in the analysis part because of the reasons explained above.

In order to assess the growth of the major indicators from the Balance Sheet and Income Statement of both companies I used the Compound Annual Growth Rate (CAGR). The CAGR is used when we want to know the rate of growth of an indicator if it grew at a steady rate. The formula is the following:

- **(4.14) CAGR =** $\left(\frac{\text{End Value}}{\text{Begining Value}}\right)^{\frac{1}{\text{Number of Years}}} - 1$

Using all the methodology explained above I arrived at the following Ratio Analysis of Time Warner:

Time Warner Ratio Analysis					
	1994	**1995**	**1996**	**1997**	**1998**
Liquidity Measurement					
Cash Ratio	79%	3485%	4673%	8063%	2326%
Profitability Indicators					
Return on Permanent Capital	-1%	-1%	-1%	1%	1%
Return on Equity	-8%	-5%	-2%	3%	2%
Return on Assets	-1%	-1%	-1%	1%	1%
Debt					
Debt to Assets	53%	49%	40%	38%	39%
Debt to Equity	770%	297%	149%	138%	140%
Capitalization	85%	75%	60%	58%	58%
Liabilities Structure	3,9%	0,3%	0,1%	0,1%	0,2%
Operating Performance					
Assets Turnonver	44%	36%	29%	39%	46%
EBITDA Margin	16%	16%	19%	19%	18%
EBITDA to short-term Debt	324%	3694%	17764%	32063%	14074%
Investment Valuation					
Payout	-125%	-64%	-35%	-300%	-58%
Plowback	225%	164%	135%	400%	158%

Table 12 –Time Warner financial analysis from 1994 until 1998

The numbers shown in table can provide the following analysis regarding the financial situation of Time Warner in the period between 1994 and 1998:

- **Liquidity Measures:**

- **Cash Ratio:** Time Warner had a good level of its short-term obligation by its cash and equivalents. The percentage of cover decreased from 1997 to 1998 but it still indicated a good level of coverage.

- **Profitability Indicators:**
  - **Return on Permanent Capital:** through the first three years of analysis (1994-1996) this return remained slightly negative due to the negative net income. In 1997 and 1998 the return increased to 1% that shows that the company didn't take many advantage of its permanent capital to generate profit to its shareholders;
  - **Return on Equity:** negative ROE but increasing through the period 1994-1997. In 1997 and 1998 the return achieved a slightly positive percentage what reveals a low ability of the company's management to generate profit using the capital from the shareholders;
  - **Return on Assets:** through the first three years of analysis (1994-1996) this return remained slightly negative due to the negative net income. In 1997 and 1998 the return increased to 1% that shows the company didn't take many advantages of its asset base to generate profit.

- **Debt Analysis:**
  - **Debt to Assets:** Time Warner had a good value of Assets to cover its Long-term obligations. The level of coverage increased in the period of analysis and this fact be considered a good sign regarding the financial situation of the company at a long-term perspective;
  - **Debt to Equity:** the Long-term obligations of Time Warner were much bigger than the capital invested by the shareholders and this can be considered a bad sign regarding the company's long-term financial situation;
  - **Capitalization:** this ratio shows that the company's management tried to decrease the weight of Debt in the company's financial structure. Although this fact as of 1998 Debt still represented 58% of the companies permanent capital;

- **Liabilities Structure:** the Liabilities of Time Warner were almost Long-term obligations and the short-term liabilities only had a marginal value in the Liabilities structure.

- **Operating performance:**
  - **Assets Turnover:** regarding this ratio the company took a good advantage of its assets base in order to generate revenues. Although this fact the ratio was a little bit instable through the period of analysis;
  - **EBITDA Margin:** this margin increased in the period between 1994 and 1998 and reveals a good level of operating profitability for Time Warner;
  - **EBITDA to Short-term Debt:** Time Warner had a very good level of coverage of its short-term liabilities by its EBITDA.
- **Earnings Valuation:**
  - **Payout:** the analysis of this ratio cannot be done only looking at its evolution through the period between 1994 to 1998 since that its percentage remain always negative. This is because the management of Time Warner decided to implement a stable dividend policy (0,20 USD per share) when the income attributable to its shareholders were negative. This kind of policy is used by firms to gain some credibility over its shareholders when times are thought;
  - **Plowback:** Time Warned didn't had any income retain after the distribution of dividends due to the facts explained above.

Time Warner Growth Analysis	
	CAGR 1994-1998
Revenues	15%
EBITDA	18%
Net Income	31%
Total Assets	14%
Total Liabilities	6%
Long-term Debt	7%
Total Equity	50%
Total Capitalization	16%

Table 13 – Time Warner growth analysis from 1994 until 1998

Regarding the growth analysis of the main indicators of the Balance Sheet and Income Statement can be taken the following conclusions:

- The EBITDA and the Net Income grew at a CAGR greater than the Revenues what reveals a good increase of the profitability of the firm;
- Although Debt has a comprehensive weight in the financial structure as it was concluded in the previous analysis, it grew at a CAGR lower than the Total Equity of the firm. This fact can be viewed as an attempt of the company management to rely more its financial structure on the shareholders than on the external capital;
- The increase of Assets (14%) was worth in the period of analysis since that the Revenues grew at a very similar CAGR (15%).

4.2 America Online

4.2.1 History[9]

America Online's ancestry goes back to 1985 when Steve Chase and Jim Kimsey founded Quantum Computer Services, a popular interactive services firm that provided content and services to users of Commodore computers, a very popular brand of computers at the time. In the next years of activity, Quantum began providing online services for other computer brands such as Apple, Tandy Corporation and IBM. In 1991 the company changed its name to America Online (AOL) and in the next year raised capital in 66 million USD at an Initial Public Offering (IPO).

In the following years, Steven Chase, the companies CEO, focused the main goal in achieving market dominance and enhanced a strategy of alliances with companies that could leverage the offered services of AOL. The strategies paid off and as of the end of 1993 the company had more than 600.000 subscribers.

The instant growth of the company in the first years of the 90's led to two attempts of takeovers, one from Microsoft and other from its cofounder Paul Allen which lately

[9] The information regarding the history of AOL is from the manuscript "The AOL/Time Warner Merger – Where Traditional Media Met New Media" by Kamal Verma

purchased 24,9% of AOL. In the upcoming years of the 90's the company pursued a strategy of aggressive marketing and geographical expansion by acquisitions.

These are the most important moments of the America Online history from 1917 until 2000:

- **1985:** Registration of Quantum Computer Services in Delaware;
- **1988:** Launch of the PC-Link service together with Triedly Corporation;
- **1989:** AOL service launch for apple personal computers (Macintosh and Apple II);
- **1990:** Service launch for IBM PS/1;
- **1991:** Quantum Computer Services changes its name to America Online, Inc.;
- **1992:** Initial Public Offering of AOL on DASDAQ market at a price of 11,50 USD and the quote AMER;
- **1993:** Windows version of AOL launched; The number of AOL services members exceeds 500.000; The company makes an offering for the second time for 1.000.000 shares;
- **1994:** Acquisition of three multimedia services related companies: BookLink Technologies (developer of internet applications), Redgate Communications (multimedia publishing company) and NaviSoft (developer of internet publishing tools); The AOL service reached 1 million subscribers;
- **1995:** Acquisition of three more companies: Global Network Navigator (direct internet service), WAIS (internet publisher), Medice (developer of interactive media) and Ubique, Lda (creator of Virtual places); The AOL service passes 5 million members;
- **1996:** AOL mover from NASDAQ to the New York Stock Exchange and changes its symbol to AOL; AOL acquires ImagiNation Network (multiplayer games);
- **1997:** Acquisition of Lightspeed Media in order to create original content for Greenhouse Entertainment Network;
- **1998:** AOL service supplants 15 million users; Acquisiton of PersonaLogic, Inc. and CompuServe;
- **1999:** AOL service reaches 20 million users; AOL acquires When Inc.

- **2000:** AOL acquires three companies MapQuest, Inc., iAmaze and Quack.com; AOL and Time Warner announce their merger.

4.2.2 Market positioning[10]

In 1999 America Online was the world's number one provider of online communication, information, retailing and entertainment services. The company managed two online services with a different scope of users and a combined number of subscribers of 24 million. The services were:

- **America Online:** it was an easy interface oriented to domestic users that providers online chatting and entertainment to more than 22 million subscribers;
- **CompuServe:** online service oriented to professional and small business users with more than 2 million subscribers.

Internet Providers in 1999	
Company	**Subscribers (in millions)**
America Online	24
Microsoft	4
NetZero	3
Mindspring/Earthlink	2,5
AltaVista	1,5

Table 14 – Internet providers in 1999 by company

America Online was also present at other countries providing specialized portals designed to fulfill the needs of the populations of countries like Germany, Brazil and Japan. The biggest source of revenue to the company was coming from the membership and usage fees of its 24 million subscribers but as of 1999 the advertising and e-commerce retailing segments brought 1 billion USD on revenues to AOL.

Among the most valuable assets of AOL was the company's data communications network, AOLnet, which was in an expansion phase in order to provide its members with access at a higher speed and reducing data network costs. Another valuable asset was the Netscape

[10] The information regarding the AOL market positioning is from the Plunketts's "2000-2001 Entertainment and Media Industry Almanac"

Netcenter portal and associated products like the Netscape Navigator and the Netscape Software with a clear market positioning in the corporate segment. Finally, the asset base of AOL also includes the 100 million customers of instant messaging and e-mail.

As of 1999 AOL was also one of the companies involved in the interactive TV Technology that was believed to be, at the time, the future of Cable TV subscribing. This technology would enable consumers to become interactive in many different ways such as online chatting while watching TV.

Companies Involved in Interactive TV Technology

Company	Product
Microsoft	UltimateTV, WebTV
AOL	AOL TV
DirecTV	satellite receiver
Phillips	satellite receiver

Table 15 – Companies in interactive TV technology in 1999

Concluding the analysis of the AOL situation before the merger I can enhance the following points as the source of competitive advantage for the company:

- Largest consumer online services provider in the USA;
- Strategic alliances policy with media, retail and technological companies;
- Recently acquisition of Netscape and its online services.

4.2.3 Financial analysis[11]

AOL Ratio Analysis					
	1995	**1996**	**1997**	**1998**	**1999**
Liquidity Measurement					
Cash Ratio	22100%	5900%	9550%	33850%	14783%
Profitability Indicators					
Return on Permanent Capital	-21%	5%	-73%	-5%	22%
Return on Equity	-23%	5%	-80%	-7%	25%
Return on Assets	-12%	3%	-32%	-3%	14%
Debt					
Debt to Assets	5%	2%	3%	13%	7%
Debt to Equity	9%	4%	9%	38%	12%
Capitalization	9%	3%	8%	27%	11%
Liabilities Structure	13%	12%	4%	1%	2%
Operating Performance					
Assets Turnonver	93%	104%	146%	108%	89%
EBITDA Margin	5%	10%	4%	9%	18%
EBITDA to Short-term Debt	733%	4367%	4750%	13250%	14433%

Table 16 – AOL financial analysis from 1995 until 1999

The numbers shown in table can provide the following analysis regarding the financial situation of Time Warner in the period between 1995 and 1999:

- **Liquidity Measures:**
  - **Cash Ratio:** AOL had a good level of coverage its short-term obligations by its cash and equivalents in the period of analysis. The percentage of cover decreased from 1998 to 1999 but it still indicated a good level of coverage.

- **Profitability Indicators:**
  - **Return on Permanent Capital:** through the first three years of analysis (1995-1997) this return was very inconsistent due to the inconsistent evolution of the net income. In 1999 the return increased to 22% that shows

[9] The financial analysis was made using information regarding the Financial Statements of Time Warner present in the document "Registration of securities issued in business combination transactions Filed on 2/11/2000"

that the company took a good advantage of its permanent capital to generate profit to its shareholders;

- **Return on Equity:** very inconsistent level of ROE through the period 1994-1998. In 1998 the return achieved a significant positive percentage (25%) what reveals a high ability of the company's management to generate profit using the capital from the shareholders;
- **Return on Assets:** very inconsistent level of ROA through the period 1994-1998. In 1998 the return achieved a significant positive percentage (14%) what reveals a high ability of the company's management to generate profit using its asset base.

- **Debt Analysis:**
  - **Debt to Assets:** AOL had a very good value of Assets if we consider the coverage of its Long-term obligations. The level of coverage increased in the period of analysis and this fact can be considered a very good regarding the financial situation of the company at a long-term perspective. As of 1999 the Long-term obligations of AOL only represented 7% of its Total Assets;
  - **Debt to Equity:** the Long-term obligations of AOL were covered in the period of analysis by the capital invested by the shareholders and this can be considered a good sign regarding the company's long-term financial situation;
  - **Capitalization:** the financial structure of AOL in the period from 1995 to 1999 remained substantially stable with a good level of Equity. In 1999 the Total Equity represented 89% of the permanent capital of AOL;
  - **Liabilities Structure:** the Liabilities of AOL in 1999 were almost Long-term obligations and the short-term liabilities only had a marginal value in the Liabilities structure. The short-term obligations decreased from 1995 to 1999.

- **Operating performance:**
    - **Assets Turnover:** regarding this ratio the company took a good advantage of its assets base in order to generate revenues. Although this fact the ratio was a little bit instable through the period of analysis;
    - **EBITDA Margin:** this margin increased in the period between 1995 and 1999 and reveals an increase in the level of operating profitability of AOL. As of 1999 the EBITDA of AOL represented 18% of its revenues;
    - **EBITDA to Short-term Debt:** AOL had a very good level of coverage of its short-term liabilities by its EBITDA.

AOL Growth Analysis	
	CAGR 1994-1998
Revenues	62%
EBITDA	108%
Net Income	74%
Total Assets	63%
Total Liabilities	72%
Long-term Debt	76%
Total Equity	66%
Total Capitalization	66%

Table 17 – AOL growth analysis from 1995 until 1999

Regarding the growth analysis of the main indicators of the Balance Sheet and Income can be taken the following conclusions:

- The EBITDA and the Net Income had a CAGR greater that the Revenues what reveals a good increase of the profitability of the firm since that the company was able to increase its revenues without increasing much its operating expenses;
- The Long-term obligations of AOL increased at significant CAGR (76%) in the period of analysis greater than the increase verified in the Total Equity;
- The increase of Assets (CAGR=64%) was worth in the period of analysis (1995 to 1999) since that the Revenues grew at a very similar CAGR (62%).

5. Literature revision

5.1 Corporate valuation methods

5.1.1 Free Cash Flow to the Firm (FCFF)

The Free Cash Flow to the Firm (FCFF) valuation method is one of the most used methods to evaluate companies. In general terms, the FCFF method states that the value of a firm today is the value of its expected future cash flows discounted at the Weighted Average Cost of Capital (WACC)[12].

The future cash flows (FCFF) are the cash available from the operating activity to companies stock and bondholders after the company pays its cash operating expenses and makes its short-term (inventory, receivables, …) and long-term (fixed assets, …) investments. So, by this way, this method is splitting the corporate activity into two components: income and investment.

The formula to arrive at the FCFF is the following:

FCFF = Operating Income x (1-t) + Depreciation & Amortization – *Capex* – Changes in the Net Working Capital **(5.1)**

The **Operating Income** is the profit generated by a company after taking into account all the expenses generated from the operating activities of the company and is given by the formula:

Operating Income[13] = Gross Income – Operating Expenses – Depreciation & Amortization **(5.2)**

Tax (t) is the actual tax rate that the companies pays and changes accordingly to the country and the region where it is registered.

[12] The Weighted Average Cost of Capital will be further explained
[13] The Operating Income can also be stated as Earnings Before Interest and Taxes (EBIT) or Operating Profit

Regarding the **Depreciation & Amortization,** it's a value that accounts the cost of an asset, intangible or tangible respectively, over its useful time. Although it is considered an operating cost, it is discounted from the cash flow formula because it does represent an outflow of cash from the company.

Capital Expenditures *(Capex)* are the amount of funds used by a company to purchase or renew assets with a perspective of long stay at the company. Such assets can be property, industrial buildings or equipment. When we subtract the Depreciation & Amortization to the *Capex* we arrive at the Net *Capex*.

The **Net Working Capital** measures the ability of a company to pay its short term obligations after receiving all that it's due to her in the short term. It is given by the following formula:

Net Working Current = Current Assets – Current Liabilities **(5.3)**

Where:

Current Assets = Cash & Cash Equivalents + Inventory + Accounts Receivable **(5.4)**

Current Liabilities = Accounts Payable + Short-term Debt + Other Current Liabilities **(5.5)**

5.1.1.1 Weighted Average Cost of Capital (WACC)

The Weighted Average Cost of Capital (WACC) is the required return on the assets of the company since it takes into account the weighted required return from both shareholders and bondholders. This rate can be used when we are evaluating a project[14] or a firm and can be considered as the "proportional average of each category of capital inside a firm – common shares, preferred shares, bonds and other long-term debt (Lee, 2009: 1)". The formula of WACC is the following:

$$\text{WACC} = \frac{E}{(D+E)} * Re + \frac{D}{(D+E)} * \text{Rd}(1 - \text{t}) \quad \textbf{(5.6)}$$

[14] Using for example the Net Present Value analysis

Where:

- E is the Market Value of Equity
- D is the Market Value of Debt
- $\frac{E}{(D+E)}$ is the percentage of Equity in the Capital Structure
- Re is the Cost of Equity[15]
- $\frac{D}{(D+E)}$ is the percentage of Debt in the Capital Structure
- Rd is the Cost of Debt
- t is the corporate Tax rate

In order to estimate the **Market Value of Equity (E)** it's usual to use the Market Capitalization of the company at the time of the valuation by simply multiplying the number of outstanding share by the share price of the company.

The **Market Value of Debt (D)** is the value of the Long-term Liabilities of the company that generate financing costs. Sometimes the Short-term Liabilities are also considered when they represent a high percentage of the companies Liabilities. In order to estimate the Market Value of these Liabilities it is usual to use its book value considering that it represents the Market Value[16].

Regarding the **Cost of Debt (Rd)** there are many different ways to compute its value:

- Dividing the financial costs of the company by the book value of its Long-term Debt in order to find at which rate the company pays its debt;
- If the company has Debt in the form of Bonds can be used the coupon rate;
- Using the Risk-free rate (Rf) and adding the credit spread that the company have to pay due to its rating notation.

[15] The Cost of Equity will be further explained in the next point – Capital Assets Pricing Model (CAPM).
[16] It's common to consider that the book value of Debt is also its market value since that there are not many companies that have its debt in the market in the form of bonds.

5.1.1.2 Capital Assets Pricing Model (CAPM)

In order to estimate the **Cost of Capital (Re)** it is important to first explain the method used to compute it – the CAPM. The CAPM is a model used to estimate the rate of return of any asset that further can be used to determine its present value by dividing its future value by that rate. The model was created by Sharpe (1964) and further developed by Lintner (1965) and Mossin (1966). As explained by Wang (2003), the model states that every investor holds an asset portfolio equal to the market portfolio[17], and by this way they hold a well diversified portfolio that only have systematic risk.

Given the above the CAPM states that in an equilibrium situation the rate of return of any asset is given by:

$$E(Ri) = Rf + \beta i \times [E(Rm) - Rf] \quad \textbf{(5.7)}$$

Where:

- Rf is the risk free rate
- βi is the beta of the security
- E(Rm) is the expected return of the Market
- [E(Rm) - Rf] is the market risk premium

The **risk free rate (Rf)** represents the rate of return of an investment with zero risk. Usually can be used the interest rate of the Treasury Bills of the country where we are performing the valuation with a maturity matching the horizon time of the valuation.

Regarding **Beta (βi)** it is a measure of the systematic risk (or market risk) of a security. If a company has a higher Beta it means that its share price is more sensitive to the changes in the market. The Beta of a security is given by the following formula:

$$\beta i = \frac{\sigma_{im}}{\sigma^2_m} \quad \textbf{(5.8)}$$

[17] The Market Portfolio is a portfolio with all the assets of the market weighted by its share of the market

Where:

- σ_{im} is the covariance between the rate of return of the security i and the rate of return of the market;
- $\sigma^2{}_m$ is the variance of the return rate of the market.

Normally the Beta is computed using a regression between the return of a security and the return of the market.

The **expected return of the market [E(Rm)]** is computed using, for example, a stock index return over a fixed period of time.

5.1.1.3 Enterprise Value and Equity Value

After explaining all the theory and computations behind the FCFF method I'm going to get back to the initial point where it was stated that the value of a firm today (or Enterprise Value) is the value of its expected future cash flows discounted at the Weighted Average Cost of Capital (WACC). In order to arrive at the Enterprise Value it is important to explain first the difference between two concepts: Cash Flow Projection Period and Terminal Value.

The Cash Flow Projection Period (N) is the period of time for which we are going to estimate the cash flow of the company. Normally this period corresponds to a horizon where the financial analyst can correctly predict how it is going to be the business of the company and the market where it operates.

The Terminal Value[18] corresponds to the value of a firm considering that its cash flows will grow forever at a steady growth rate. For the Free Cash Flow to the Firm analysis this value is computed using the formula

$$\text{Terminal Value} = \frac{\text{FCFF}_{N+1}}{\text{WACC} - g_N} \quad \textbf{(5.9)}$$

[18] The Terminal Value can also be stated as Continuing Value or Horizon Value

Where:

- g_N is the terminal growth rate and normally is around 3% although it depends on many variables like the size of the firm, the expected future return and the competitive advantage in the market;
- $FCFF_{N+1}$ is the free cash flow of the N+1 year and is computed by multiplying the FCFF of the year N by the g_N.

By this way it is now clear to trace back the formula of the Enterprise Value (or Firm Value):

$$\text{Enterprise Value} = \frac{FCFF_1}{(1+WACC)^1} + \frac{FCFF_2}{(1+WACC)^2} + \cdots + \frac{FCFF_N}{(1+WACC)^N} + \frac{\text{Terminal Value}}{(1+WACC)^N} \quad \textbf{(5.10)}$$

The Enterprise Value measures the market value of the assets of the company, if we want to measure the market value of equity (Equity Value) we have to make the following adjustments:

$$\text{Equity Value} = \text{Enterprise Value} + \text{Cash \& Cash Equivalents} - \text{Debt} - \text{Minority Interests} \quad \textbf{(5.11)}$$

The **Cash & Cash Equivalents** value can be obtained in the Balance Sheet of the company and represent assets that can be quickly convertible into cash like commercial paper, treasury bills and marketable securities.

Debt represents the Market Value of Debt of the firm and can be obtained like it was explained in the WACC point.

The **Minority Interests** represents non-controlling positions in other companies and can be obtained directly from the Balance Sheet of the company.

5.1.2 Free Cash Flow to the Equity (FCFE)

The Free Cash Flow to the Equity represents the amount of cash that it's left to the companies' shareholders after it has paid its other obligations. By another words, the FCFE

is the "cash available to common shareholders after funding capital requirements, working capital needs, and debt financing requirements (Schweser, 2008: 197)".

Using this method we can value the market value of equity of the company by discounting its future FCFE at the cost of equity rate (Re). The formula to compute the FCFE is:

FCFE = Net Income – (Capex – Depreciation & Amortization) – Changes in the Net Working Capital + (New Debt Raised – Debt Repayment) **(5.12)**

The components of the formula are computed using the same methodology of the FCFF explained before except the new components (New Debt Raised and Debt Repayment). We can estimate the New Debt Raised and Debt Repayment by assuming that the Long-term Liabilities in the Balance Sheet represent the market value of Debt and simply computing the difference between the Debt in N and the Debt in N-1.

After this we can estimate the Equity Value of the company by using the formula:

$$\text{Equity Value} = \frac{\text{FCFE}_1}{(1+\text{Re})^1} + \frac{\text{FCFE}_2}{(1+\text{Re})^2} + \cdots + \frac{\text{FCFE}_N}{(1+\text{Re})^N} + \frac{\text{Terminal Value}}{(1+\text{Re})^N} \quad \textbf{(5.13)}$$

Where:

$$\text{Terminal Value} = \frac{\text{FCFE}_{N+1}}{\text{Re} - g_N} \quad \textbf{(5.14)}$$

5.1.3 Market multiples

The market multiples valuation method is based on the assumption that a company can be valued based on the market price of similar companies[19]. In order to perform a valuation using market multiples it is reasonable to follow these steps as defined by Drake (2006):

- 1 – Indentify comparable firms and obtain its market capitalization;
- 2 – Adjust values taking into account different accounting methods and currencies;
- 3 – Compute the multiple base using the comparable companies values;
- 4 – Estimate the multiple in order to apply it to the company we want to valuate;

[19] The market multiples valuation can also be applied to an asset or a business unit from a company

- 5 – Apply the multiple and value the company.

This kind of valuation is normally used as a cross check to the values obtained by the Discount Cash-Flows, FCFF or FCFE valuations. In order to explain briefly the multiples valuation, I'm going to detail how to compute three market multiples: PE – Price to Earnings, PS – Price to Sales, PBV - Price to Book Value.

The **PE – Price to Earnings** is computed using the current Market Capitalization[20] of the company and dividing it by the Net Income reported by the company on its last Annual Report. We can also use per share data and get back with an equivalent valuation. The formula is the following:

$$\text{Price to Earnings} = \frac{Market\ Value\ of\ Equity}{Net\ Income} = \frac{Current\ Share\ Price}{Earnings\ per\ Share} \quad \textbf{(5.14)}$$

Regarding the **PS – Price to Sales** it is a revenue multiple and measures the "value of the equity or business relative to the revenues it generates (Damodaran, 2007: 4)". It is computed using the formula:

$$\text{Price to Sales} = \frac{Market\ Value\ of\ Equity}{Revenues} = \frac{Current\ Share\ Price}{Revenues\ per\ Share} \quad \textbf{(5.15)}$$

Finally, the **PBV – Price to Book Value** that measures the difference between the value of the firm to the market and the value of the firm registered in its Financial Statements and lies on the assumption that the "market value of the equity in a firm reflects the market's expectations of the firm's earning power and cash-flows (Damodaran, 2007: 10)". The formula is the following:

$$\text{Price to Book Value} = \frac{Market\ Value\ of\ Equity}{Book\ Value\ of\ Equity} \quad \textbf{(5.16)}$$

[20] Normally the companies used to compute multiples are listed in order to facilitate compute its Market Capitalization

5.2 Mergers and Acquisitions (M&A)

5.2.1 Introduction and history

The Mergers and Acquisition (M&A) is a field of study within the spectrum of analysis of the Corporate Finance topic and is often related to corporate restructuring activities. In order to take a clear first approach to the topic it is crucial to plainly explain the differences between a Merger and an Acquisition. Taking into consideration the point of view of Bragg (2009), the two terms diverge in the following way:

- **Acquisition:** occurs when a company (*buyer*) acquires all or part of the assets or business of another company (*target*) and both of them are cooperating and positive about the transaction. Normally the buyer is a bigger company than the seller;
- **Merger:** occurs when two companies combine their ownership and operations into one company. Normally the companies that merge are about the same size.

Although the terms are clearly different, sometimes it is difficult to identify a transaction as being a merger or an acquisition. This is because sometimes both companies agree to classify their deal as being a merger even when it is technically an acquisition in order to avoid negative connotations for the stakeholders of the possibly target company.

Regarding the M&A history in the USA, it is possible to identify five merger waves until the year 2000, supported by the analysis done by Gaughan (2002):

- **1st wave:** occurred in the beginning of the XX century;
- **2nd wave:** occurred in the 1920s;
- **3rd wave:** took place in the 1960s;
- **4th wave:** took place in the 1980s. This wave was characterized by hostile takeovers[21] and the most important source of financing to the companies that were acquiring was the growth of the junk bond market;
- **5th wave:** occurred in the 1990s. In this period there was a little shifting in the type of the mergers since that they were not so hostile comparing to the ones that took

[21] An hostile takeover occurs when a company decides to acquire another and the target company strongly resists to the purchase

place in the 1980s. The 1990s mergers were more strategic mergers with a clear focus to the long-term activity of both companies. This decade also experienced a large increase in the number of mergers per year.

The following table shows clearly the described merger waves between 1960 and 2000:

Year	Number	Percentage Change (%)	Year	Number	Percentage Change (%)
1963	1,361	—	1982	2,346	–2
1964	1,950	43	1983	2,533	8
1965	2,125	9	1984	2,543	1
1966	2,377	12	1985	3,001	18
1967	2,975	25	1986	3,336	11
1968	4,462	50	1987	2,032	–39
1969	6,107	37	1988	2,258	11
1970	5,152	–16	1989	2,366	5
1971	4,608	–11	1990	2,074	–12
1972	4,801	4	1991	1,877	–9
1973	4,040	–16	1992	2,574	37
1974	2,861	–29	1993	2,663	3
1975	2,297	–20	1994	2,997	13
1976	2,276	–1	1995	3,510	17
1977	2,224	–2	1996	5,848	67
1978	2,106	–5	1997	7,800	33
1979	2,128	1	1998	7,809	–1
1980	1,889	–11	1999	9,278	19
1981	2,395	27	2000	9,602	4

Table 18 – M&A deal announcements in the USA from 1963 until 2000[22]

5.2.2 Reasons for a Merger or Acquisition

When companies face a change process with the scope of a Merger or an Acquisition there is always a big reasoning behind. Nevertheless, the ultimately objective is always creating value to the shareholders, although there are multiple ways to arrive there.

In order cover almost every reason behind a Merger of an Acquisition I'm going to follow the theory developed by DePamphilis (2010) that tried to go deep on the analysis of the M&A reasons and ambitions.

Starting with the analysis developed by DePamphilis (2010) it is crucial to clarify the definition of a term that is often used when we talk about M&A, the synergy concept. The synergy concept is the notion that the combination of two companies has a greater value than the sum of separated companies – using a numerical example, the synergy states that 1

[22] This table is from the Mergerstat Review of 1990 and 2001

plus 1 is equal to 3. Back to DePamphilis (2010), he stated that there could be identified 11 theories regarding the causes of M&A. The 11 theories are: Operating synergy, Financial synergy, Diversification, Strategic realignment, Hubris, Buying undervalued assets, Mismanagement, Managerialism, Tax considerations, Market power and finnally Misvaluation.

The **Operating synergy** occurs when a company manages to improve its operating efficiency by acquiring another company, which can be a costumer, supplier or a competitor. The operating synergy is accomplished through:

- **Economies of scale:** it happens when a company increases its efficiency of production as the number of produced products increases. Normally it results in a lower unit cost per product;
- **Economies of scope:** it has a similar meaning of the economies of scale with the difference that the company manages to have an efficiency of production by increasing the diversity of products produced.

Regarding the **Financial synergy**, it is related with the capacity of a merged company to reduce its cost of capital through the incorporation of uncorrelated cash flows of the companies that decide to merge.

The **Diversification** factor is related with corporate strategy and can be defined, in general terms, as the intension of a firm to reposition its business into new products or markets by the acquisition/ merger with another company.

Concerning the **Strategic realignment**, it occurs when a firm acquires or merges with another in order to rapidly face environmental changes that would be difficult to face if the company would have to develop capabilities internally. These environmental changes can be regarding technology, regulatory, law or political issues.

The **Hubris**, also classified by Donald as managerial pride, is a situation where the acquirer has a valuation of the target higher than what the market expects caused by an overestimation of the synergies value.

The **Buying undervalued assets** theory represents the cases where a firm buys the equity of existing firms at a lower price than the cost of buying or building the assets of the company.

Concerning the **Mismanagament**, referred by Donald inside the scope of agency problems, occurs when the shareholders of a company decide to merge with another in order to replace the managers of the company that are not operating in its best interests.

Regarding the **Managerialism**, it occurs when the managers of a firm decide to acquire or merge with another in order to increase its power and sometimes its payment fee. Normally in these cases the management is more concerned with their own interests, putting the interests of the company aside.

The **Tax considerations** theory accounts the cases where a company decides to acquire another in order to leverage tax benefits such as unused net operating losses and tax credits, asset write-ups, and substitute capital gains for ordinary income.

Concerning the **Market power**, it is the case where a company intends to gain market share with a purchase of another in order to improve its power in issues such as the ability to set prices.

Finally, Donald defined the **Misvaluation** cases where analysts overvalued the acquirer's stock price and encourage other companies to merge with the acquirer.

5.2.3 Types of Mergers and Acquisitions

Normally, the companies that are merging can have a variety of different business structures and by this way the merger can be categorized in a wide range of customs. Although this fact and looking into the literature that is available for this field of study, there can be identified three major types of mergers: horizontal, vertical and conglomerate. Following the concept description and explanation developed by Gaughan (2009), the three main types of mergers are defined as:

- **Horizontal Merger:** occurs when two companies that are direct competitors in the same market decide to combine their businesses. Normally, these types of mergers create a situation of increasing power in the market and can have an anti competitive effect that would need to be evaluated by the regulators of the country where the merger occurs. One example of a popular horizontal merger is the one that occurred between Daimler-Benz and Chrysler that were both competing in the Car Manufacturing market and combined into a Leading Global Automotive Company, with a merger valued at 92 billion USD;
- **Vertical Merger:** occurs when two companies that have different positions in the value chain of a particular industry decide to merge. Normally these companies have a buyer-seller relation and are respectively customer and supplier. One popular example of a vertical merger is the acquisition of Meco Containment Services, Inc., the largest marketer of prescription drugs by Merck, the world's largest drug company. The acquisition resulted in a company that was both the largest pharmaceutical and the largest integrated producer and distributor of pharmaceuticals;
- **Conglomerate Merger:** is the type of merger or acquisition where the companies do not have any common business areas, that is, the companies are not competitors and do not have any buyer-seller relationship. One popular example is the acquisition of General Foods, a company of the food industry, in 1985 by Philip Morris (now Altria Group, Inc.), a tobacco company for 5,6 million USD. The two companies had no common business areas and there was not much synergy value creation when we look at the acquisition at a general point of view.

Although these are the most common and wide spread types of mergers, there also can be identified another two types of merger as defined in the Investopedia[23]:

- **Market-extension merger:** occurs when two companies that sell the same product but are not direct competitors – they sell the same product in different market or for different segments of the market – merge;

[23] The Investopedia is a public web-site with a wide range of information created by anonymous users regarding Corporate Finance and Capital Markets

- **Product-extension merger:** occurs when two companies that sell related products in the same market merge. There is no buyer-seller relation and the companies are not direct competitors.

5.2.4 Types of M&A deals

One of the principal issues regarding an M&A is whether the buyer decides to pay the price with stock or cash, and all the relevant aspects related with that decision. In order to clearly understand all the theory behind this issue I'm going to follow the concepts developed by Eccles, Lanes, and Wilson (2001) that have an extensive study regarding all the relevant issues regarding the decision of buying a company with share or with cash. The main conclusion of the study is that "the choice between cash and stock should never be made without full and careful consideration of the potential consequences (Eccles, Lanes, and Wilson; 2001: 74)".

5.2.4.1 Payment with cash

Generally speaking, an acquisition with cash puts all the potential risks and benefits with the acquirer company. The benefits and risks of this kind of deal are the following:

Benefits:

- Strong signal to the market regarding the value of shares of the acquirer and the possibilities of synergies regarding the merger;
- Clear-cut roles of the two entities.

Risks:

- The synergy value is overvalued and will not be materialized into cash for the acquirer.
- There is pre-closing market risk for the acquirer;
- There is post-closing operating risk for the acquirer.

5.2.4.2 Payment with stock

When two companies decide to make a deal entirely with stock the values and risks of the transaction are shared between both of them by the same proportion of the company's ownership. This kind of deal is more popular in large deals.

When the companies agree to make a share deal there is another choice that still has to be done regarding payment of the deal: the companies have to agree if they issue a fixed number of share or if they issue a fixed value of shares. The benefits and risks of this kind of deal are the following:

Benefits:

- Gives the chance of profit from the synergy gains to the acquired company's shareholders;
- The owners of the target company are protected in a fixed value deal because they are not much depending on the volatility of the capital markets.

Risks:

- The synergy value is overvalued;
- It is not fully understood who is the buyer and who is the seller;
- If the acquirer decides to issue new shares in order to finance the deal the share value of the current shareholder can fall;
- The risks are exponentially large when we are facing a deal with large dimensions;
- In a fixed share deal the shareholders of the target company are vulnerable to a fall in the price of the acquirer shares;
- In a fixed value deal if the stock price fall the acquirer has to issue additional shares in order to fulfill the acquired value of the deal.

5.2.5 Value of an M&A

When the Top Management of a company is trying to understand the future value of an acquisition or a merger with another company it is crucial to first understand the distinctions between different types of value that exist in an M&A deal. The theory behind the different concepts of value behind an M&A deal were described by Eccles, Lanes, and Wilson (2001), who have classified four types of value that are important when we analyze the purchase price: intrinsic value, market value, synergy value and value gap.

The **intrinsic value** of a company is the today's value (NPV) of the expected future cash flows of the company if it remains independent with no implications of an M&A deal. This value assumes that the company will remain under the same management and experiencing the same growth and performance improvements that the market expects for the company.

Additionally to the intrinsic value, there is the **market value** that consists in the current market capitalization of the companies and, by this way, consists in the share price of the company. This value reflects both the valuation of the company by the market and premium regarding the likelihood of an offer to the company.

When a bidder wants to launch a takeover on a company, it must offer a price with a high probability of being accepted. This price is called the **purchase price** and represents the amount of cash (or value of stock) that the acquirer previews to pay in order to secure the deal. Normally, the Purchase Price is estimated by adding a premium to the intrinsic value of the firm.

The **synergy value** represents the Net Present Value of the future cash flows that will result from the enhancements created (cost savings, revenue growth …) by the merge of the two companies. This value is beyond the improvement value of the companies if they continue to do their business alone, since that improvement value is already incorporated in the intrinsic value of each company. The synergy value estimation is not normally revealed on an M&A deal but it can be estimated if we take into account the price of the deal.

Finally, there is the **value gap** that consists in the difference between the intrinsic value and the purchase price of a firm. The value gap takes into account some of the future benefits that the combination of the companies will bring but is also constrained by the bidding competitiveness. The greatest challenge for the acquirer is to find out how much they can enhance the value gap in through synergies and taking into account other competitors in the purchase of the target.

5.2.6 Types of synergy value

The estimation of the synergy value is the main challenge regarding a successful M&A deal. If this estimation is done following realistic assumptions, they will be a good indicator to the acquirer's definition of the premium he has to pay and, by this way, of the purchase price. Following the theory described by Eccles, Lanes, and Wilson (2001), there are five types of synergies that the acquirer seek to value when they want to buy another firm. These types of synergies are: cost savings, revenue enhancements, process improvements, financial synergies and tax benefits.

The **cost savings** synergies are considered the easiest to estimate and the most commonly referred when we heard about synergies in an M&A deal. Normally this kind of synergy comes from savings in the fixed costs or economies of scale in the purchasing of materials and it achieves high values when the businesses of the companies are correlated.

Regarding the **revenue enhancements**, they occur when the combination of two companies is able to sell more than the sum of the revenues of the two companies separately. This kind of synergy can happen when for example the target company brings a very innovative product to the merged company and its sales grow by using the distribution channels of the acquirer company. Although this is a type of synergy that creates value, sometimes the acquirer don't take it into account when valuing the synergy possibilities of a merger or an acquisition because it depends on many variables that the management of a company does not have power to fully control.

Concerning the **process improvements,** it is a synergy type that occurs when the best practices and core competences of one of the companies are transferred to the merged company. This transfer result in both cost savings and revenue enhancements.

The **financial engineering** synergy occurs when one company manages to reduce it weighted average cost of capital by the purchase of another company. This can happen when the acquirer takes leverage of the lower cost of debt rate of the target and by this way reduces its financial costs when acquires the target company.

Finally, the **tax benefits** represent cost savings regarding tax that two companies can manage when they merge. One example of this synergy is when the tax planning of a merged company results at a combined tax rate lower than the sum of the tax rates of the companies separately. Another example of this synergy is called the tax structuring that is defined as the capability of the merged company to avoid tax costs like transfer duties and change-of-ownership provisions.

6. The Merger

6.1 The deal

6.1.1 Description[24]

The merger deal between America Online and Time Warner was announced on January 10th of 2000 as a strategic merger of equals with a combined value of about 350 billion USD. The combined company resulting from the merger would be 55% owned by AOL and 45% owned by Time Warner and would represent in accounting terms, a purchase of Time Warner by AOL for 147 billion USD, including transaction costs. The name of the new company was defined as AOL Time Warner and would trade in the New York Stock Exchange as AOL.

The terms of the merger were the following:

- All stock deal;
- Time Warner and America Online stock would be converted to AOL Time Warner stock at fixed exchange ratios;
- Each shareholder of Time Warner would received 1,5 share of the combined company for each share he owned of Time Warner;
- Each shareholder of AOL would received 1,5 share of the combined company for each share he owned of AOL.

Regarding the new Board of Directors of AOL Time Warner it was composed by:

- **Chairman of the Board:** Steve Chase (formerly Chairman and CEO of AOL);
- **Chief Executive Officer:** Gerald Levin (formerly Chairman and CEO of Time Warner);
- **Chief Operating Officers:** Richard Parsons (formerly president of Time Warner) and Bob Pittman (formerly president and COO of AOL);

[24] The information about the merger is from the press-release of Time Warner "America Online and Time Warner Will Merge to Create World's First Internet-Age Media and Communications Company" from January 10, 2000

- **Chief Financial Officer:** J. Michael Kelly (formerly CFO and Vice President of AOL).

The merger was approved by the Federal Trade Commission at January 11 of 2001 and the companies completed the merger in the same day.

6.1.2 Synergies[25]

The merger was announced under the assumption of a high value in terms of synergies. The motivations of each company were different and each one of them had a clear vision of the synergies that the merger would represent.

For AOL, the merger with Time Warner would bring the following synergies:

- More effectiveness in the process of definition of the next generation broadband access;
- Build a set of trusted customers for their brands;
- Deliver any kind of content in every place creating the concept of AOL anywhere;
- Revenue increases through more advertising[26] opportunities thought the new position of AOL Time Warner as a Media conglomerate and not only an internet player like AOL.

For Time Warner, it was expected to take advantage of the merger by the following synergies:

- Position Time Warner as a strategic player in the digital revolution, taking advantage of both traditional and new media channels;
- Creation of multiple brands and a vast range of content to costumers;

[25] The information about the synergies of the merger is from the manuscript "The AOL/Time Warner Merger – Where Traditional Media Met New Media" by Kamal Verma

[26] Like it was told in the market review the Advertising market is the second most important source of revenue for Media and Entertainment companies.

- Integration of an extensive Internet infrastructure for the distribution of the portfolio of products of Time Warner;
- Leverage the international position of Time Warner;
- Sell the products of the music labels of Time Warner through the e-commerce platform of AOL.

The merger would also bring these synergies to the combined company:

- Efficiency increases in the marketing of the new company since it could be made through a wide range of platforms and systems;
- Cost synergies from the combination of some business functions like Research & Development.

6.2 Proposed valuation

In this part of the thesis I'm going to evaluate the two companies as of 31st December of 1999, some days before the announcement of the merger, in order to conclude if the Market Capitalization of AOL and Time Warner represented its real value

For this purpose I will use the Free Cash Flow to the Firm analysis as I explained in the Literature Revision chapter. Further in the valuation I will perform a sensitivity analysis to conclude how the Equity Value of both companies would react to a change in the main assumptions of the FCFF model.

In another step of the valuation part, I'm going to execute a Market Multiples assessment to identify the conclusions of a comparison between both companies and its peers.

6.2.1 Time Warner

6.2.1.1 FCFF Base scenario

6.2.1.1.1 WACC

In order to use the *equation (5.6)* we need to firstly compute or estimate the following variables: Marker Value of Equity (E), Market Value of Debt (D), Cost of Equity (Re), Cost of Debt (Rd) and Tax Rate (t).

The Market Value of Equity (E) is computed using the share price and outstanding number of shares of Time Warner in 31st December of 1999 from the Compustat data source. So, the computation is the following:

- $E = 73{,}31\ USD * 1.179\ million\ shares = 85.280\ million\ USD$

The Market Value of Debt (D) can be estimated using the last year-end Balance Sheet before the merger that is the Balance Sheet form 31st of December 1999 and retrieving the Long-term debt that is the following:

- $D = 18.083\ million\ USD$

The Cost of Equity (Re) is computed using the CAPM and the *equation (5.7)*. In order to apply it I used the following variables:

- Risk-free rate = 6,44% (average rate for the USA market – Damodaran, 1999);
- Market Risk Premium = 2,50% (average premium for the USA market – Damodaran, 1999);
- β_u = 0,83 (using the Entertainment, Publishing and Cable TV Unlevered Beta estimations of Damodaran and ponder it to the weight in the revenues of Time Warner of these three segments);
- β_l = 0,93 (after applying the capital structure of Time Warner to the previous unlevered Beta).

And then I applied the CAPM formula and arrived at the following Cost of Equity (Re):

- Re = 6,44% + 0,953 (2,50%) = 8,77%

The Cost of Debt (Rd) was computed using data from both the Balance Sheet and Income Statement of Time Warner of 1999:

- $Rd = \frac{Interest\ Expense}{Market\ Value\ of\ Debt} = \frac{1.782\ million\ USD}{18.083\ million\ USD} = 9{,}85\%$

The Tax Rate (t) used was the following:

- T = 40% (using the Entertainment, Publishing and Cable TV tax rates estimations of Damodaran and ponder it to the weight in the revenues of Time Warner of these three segments).

After this I applied the *equation (5.6)* and arrived at the WACC for Time Warner:

$$\text{WACC} = \frac{85.280}{(18.083 + 85.280)} * 8{,}77\% + \frac{18.083}{(18.083 + 85.280)} * 9{,}85\%(1 - 40\%) = 8{,}26\%$$

6.2.1.1.2 Assumptions

The FCFF analysis needs assumptions and forecasts regarding the activity of the company for a short, medium and long-term perspective.

The first assumptions that I made were regarding the evolution of the Time Warner's **Revenues**. For that I used the PricewaterhouseCoopers "Media and Entertainment 2000 Outlook" predictions for the growth of the different segments of the market. This study of PricewaterhouseCoopers only made projections for the annual growth until 2006 so I assumed the period between 1999 and 2006 as my projection period. The predictions for the various Media and Entertainment sub-segments were the following:

	Market 1999-2006 CAGR
Growth by Revenues Segment	
Cable Networks	6%
Publishing	2%
Music	1%
Filmed Entertainment	6%
Broadcasting	7%
Cable	7%
Digital Media	14%

Table 19 – PricewaterhouseCoopers forecasts for the Media and Entertainment Market growth

Applying this growth to the Revenues of Time Warner as of 1999 and choosing a steady 4% rate for the Intersegment Elimination[27] we arrive at the forecasts defined in the following table:

	Historical	Forecast						
	1999	2000	2001	2002	2003	2004	2005	2006
Revenues	27.333	28.597	29.932	31.344	32.836	34.415	36.083	37.849
Cable Networks	6.111	6.472	6.855	7.260	7.689	8.143	8.624	9.134
Publishing	4.663	4.744	4.826	4.909	4.994	5.081	5.168	5.258
Music	3.834	3.867	3.900	3.933	3.967	4.001	4.035	4.070
Filmed Entertainment	8.075	8.523	8.996	9.496	10.023	10.579	11.167	11.787
Broadcasting	384	410	437	466	497	531	566	604
Cable	5.374	5.733	6.117	6.525	6.962	7.427	7.923	8.453
Digital Media	1	1	1	1	2	2	2	3
Intersegment elimination	-1.109	-1.153	-1.199	-1.247	-1.297	-1.349	-1.403	-1.459

Table 20– Revenue evolution of Time Warner (1999-2006; millions of USD)

All the segment growths represent an overall CAGR for Time Warner Revenues from 1999 to 2006 of 4,8%.

Another part of the assumptions that need to be made in a FCFF analysis is regarding the investing activity of the company and its decomposition in *Capex* (Fixed Assets investment) and Net Working Capital investment (difference between the Current Assets and Currents Liabilities). It is also important to make an assumption regarding the operating margin of Time Warner in the following years by setting the value of the EBIT divided by the total Revenues.

In order to define the evolution of these three variables for the period of forecast (1999-2006) I analyzed the historical evolution of the Revenues, Fixed Assets (FA), Depreciation & Amortization (D&A), Current Assets (CA), Current Liabilities (CL) and EBIT in the financial statements of Time Warner from 1990 until 1999 and computed the five variables that I needed (FA/Revenues, D&A/Revenues, CA/Revenues, CL/Revenues and EBIT/Revenues) and its average as shown in the table below:

[27] The Intersegment Elimination is a mechanism defined by Time Warner in order to present its Revenues by business area without taking into account double registration of Revenues. It is used to eliminate the Revenues that are registered twice.

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Average
Revenues	11.517	12.021	13.070	6.581	7.396	8.067	10.064	13.294	14.582	27.333	
Fixed Assets	4.601	4.656	4.713	766	753	1.119	3.684	3.855	3.891	8.728	
FA/Revenues	**40%**	**39%**	**36%**	**12%**	**10%**	**14%**	**37%**	**29%**	**27%**	**32%**	**27%**
Depreciation & Amortization	1.109	1.172	132	133	133	181	557	1.294	1.178	2.529	
D&P/Revenues	**10%**	**10%**	**1%**	**2%**	**2%**	**2%**	**6%**	**10%**	**8%**	**9%**	**6%**
Current Assets	3946	3890	5117	2534	2817	3720	4821	5011	5449	9.861	
CA/Revenues	**34%**	**32%**	**39%**	**39%**	**38%**	**46%**	**48%**	**38%**	**37%**	**36%**	**39%**
Current Liabilities	3651	3576	3912	2225	2972	3027	4012	4371	4618	9.670	
CL/Revenues	**32%**	**30%**	**30%**	**34%**	**40%**	**38%**	**40%**	**33%**	**32%**	**35%**	**34%**
EBIT	988	1018	1202	518	637	623	888	1190	1410	3419	
EBIT/Revenues	**9%**	**8%**	**9%**	**8%**	**9%**	**8%**	**9%**	**9%**	**10%**	**13%**	**9%**

Table 21 – Historical evolution of Time Warner's investing activities and operating margin from 1990 until 1999 (millions of USD)

After this analysis I assumed the average between 1990 and 1999 for the **EBIT/Revenues** to remain constant. Because the values of FA, CA, CL and D&A experienced a lot of changes in the period in analysis (1990 until 1999), I assumed the **FA/Revenues, CA/Revenues, CL/Revenues** and **D&A/Revenues** to remain constant as of 1999. Following this assumptions I applied it for the evolution between 2000 and 2006:

	Historical	Forecast						
	1999	2000	2001	2002	2003	2004	2005	2006
Current Assets	9.861	10.295	10.776	11.284	11.821	12.389	12.990	13.626
Current Liabilities	9.670	10.009	10.476	10.970	11.493	12.045	12.629	13.247
Net Working Capital	191	286	299	313	328	344	361	378
Change in NWC		**95**	**13**	**14**	**15**	**16**	**17**	**18**
Fixed Assets	8.728	9.151	9.578	10.030	10.508	11.013	11.547	12.112
Change in FA		**423**	**427**	**452**	**478**	**505**	**534**	**565**
Invested Capital		**518**	**441**	**466**	**493**	**521**	**551**	**583**
Depreciation & Amortization	**2.529**	**2.574**	**2.694**	**2.821**	**2.955**	**3.097**	**3.248**	**3.406**

Table 22 – Forecasted evolution of Time Warner's investing activities from 2000 until 2006 (millions of USD)

Finally I only needed two more assumptions in order to perform a FCFF analysis regarding the tax rate and the terminal growth rate. For these assumptions I used the following rationale:

- T = 40% - using again the Entertainment, Publishing and Cable TV tax rates estimations of Damodaran and ponder it to the weight in the revenues of Time Warner of these three segments;

- G = 2% - based on the 4,8% growth rate for the period between 2002 and 2006 achieved by Time Warner using the PricewaterhouseCooper's forecast for the market and deducting 2,8% in order to achieve a terminal growth value below the normal growth. The Media and Entertainment was a market where all the major players had a consistent position and Time Warner was as of 1999 a well established player and crossing these facts it's not correct to predict a very high Terminal Growth Rate.

6.2.1.1.3 Enterprise Value and Equity Value

Using the assumptions described in the previous point I performed a FCFF analysis of Time Warner and arrived at the following values:

	2000	2001	2002	2003	2004	2005	2006
EBIT	2.574	2.694	2.821	2.955	3.097	3.248	3.406
EBIT (1-t)	1.533	1.605	1.681	1.761	1.845	1.935	2.029
Invested Capital	518	441	466	493	521	551	583
Depreciation & Amortization	2.529	2.574	2.694	2.821	2.955	3.097	3.248
FCFF	3.544	3.738	3.909	4.089	4.280	4.481	4.694
Terminal Value							76.440

Table 23 – Free Cash Flow the Firm valuation of Time Warner from 2000 until 2006 (millions of USD)

	1999
Enterprise Value	**93.017**
Cash and Cash Equivalents	1.284
Debt	18.083
Equity Value	**76.218**
Outstanding number of shares	1.179
Equity Value per Share	**64,63**

Table 24 – Enterprise Value, Equity Value and Equity Value per Share of Time Warner as of 1999 (millions of USD; millions of shares)

Applying all the assumptions and the FCFF that I described before I arrived at an Equity Value for Time Warner of 76.218 millions of USD what can be compared to the Market Capitalization of Time Warner at 31st of December of 1999 that was 85.280 millions of

USD and to the purchase price that was 147.000 millions of USD (including transaction costs). This shows that, based on my valuation, Time Warner was overvalued in the market with a gap between my valuation and the Market Capitalization of 9.063 millions of USD. This also shows that the price paid by AOL is significantly higher than the Market Capitalization and also my valuation of Time Warner, even if we take into consideration that the purchase price includes transaction costs and a premium value.

6.2.1.2 Market Multiples

The first step of a Market Multiples analysis is the choice of the comparable markets where the peer companies operate. I choose the Entertainment, Cable TV and Publishing markets and then got the estimates by Damodaran for its multiples as of 1999. Then I applied the Revenues breakdown of Time Warner of 1999 in order to estimate the multiples for the Media Conglomerate Market and arrived at the following values for the multiples Market where Time Warner operated:

	Price to Sales	Price to Earnings	Price to Book Value	EV/EBITDA
Entertainment	3,42	99,84	3,74	13,59
Publishing	1,59	34,20	5,68	7,58
Cable TV	3,04	-	11,09	9,42
Media Conglomerate Market	**2,98**	**80,14**	**5,60**	**11,55**

Table 25 – Estimation of multiples for the Media Conglomerate Market (1999)

After this I computed the multiples of Time Warner using the data from its Financial Statements and the Market Value of Equity as of 31st of December, 1999. So, following *equations 5.14*, *5.15* and *5.16:*

$$\text{Price to Sales} = \frac{Market\ Value\ of\ Equity}{Revenues} = \frac{85.280\ millions\ of\ USD}{27.333\ millions\ of\ USD} = 3{,}12$$

$$\text{Price to Earnings} = \frac{Market\ Value\ of\ Equity}{Net\ Income} = \frac{85.280\ millions\ of\ USD}{1.948\ millions\ of\ USD} = 43{,}78$$

$$\text{Price to Book Value} = \frac{Market\ Value\ of\ Equity}{Book\ Value\ of\ Equity} = \frac{85.280\ millions\ of\ USD}{9.713\ millions\ of\ USD} = 8{,}78$$

$$\text{Enterprise Value to EBTIDA} = \frac{Enterprise\ Value}{EBITDA} = \frac{93.017\ millions\ of\ USD}{8.564\ millions\ of\ USD} = 10{,}86$$

The combination of the Media Conglomerate Market and the Time Warner's multiples leads to the following conclusions:

- **Price to Sales:** the multiple of Time Warner is higher than the Entertainment Conglomerate Market average. The comparable companies of Time Warner have in average a Market Capitalization 2,98 times higher than its yearly Sales, what compares to the case of Time Warner where its Market Capitalization is 3,12 times higher than its yearly Sales;
- **Price to Earnings:** the multiple of Time Warner is higher than the Entertainment Conglomerate Market average. The comparable companies of Time Warner have in average a Market Capitalization 80,14 times higher than its yearly Earnings, what compares to the case of Time Warner where its Market Capitalization is 43,78 times higher than its yearly Earnings;
- **Price to Book Value:** the multiple of Time Warner is lower than the Entertainment Conglomerate Marker average. The comparable companies of Time Warner have in average a Market Capitalization 5,60 times higher than its Book Value, what compares to the case of Time Warner where its Market Capitalization is 8,78 times higher than its yearly Book Value;
- **Enterprise Value to EBITDA:** the multiple of Time Warner is lower than the Entertainment Conglomerate Market average. The comparable companies of Time Warner have in average an Enterprise Value 11,55 times higher than its yearly EBITDA, what compares to the case of Time Warner where its Enterprise Value is 10,86 times higher than its yearly EBITDA.

6.2.1.3 Sensitivity Analysis

The objective of my Sensitivity Analysis is to assess the impact of changes in the most important variables in the final results of my valuation, namely the Enterprise Value and the subsequent impact on the Equity Value and the Equity Value per Share.

WACC	Enterprise Value	Equity Value	Equity Value per Share
6,5%	119.103	102.304	86,75
7%	109.840	93.041	78,89
7,5%	102.261	85.462	72,47
8%	95.945	79.146	67,11
8,3%	93.017	76.218	64,63
9%	86.020	69.221	58,70
9,5%	82.050	65.251	55,33
10%	78.577	61.778	52,38

Table 26 – Sensitivity Analysis of Time Warner with variable WACC (millions of USD, except per share data)

The changes in the WACC have a relatively low impact in the Enterprise Value of Time Warner and subsequently in the Equity Value and Equity Value per Share of Time Warner. The Equity Value of Time Warner varies from 102.304 millions of USD with a WACC of 6,5% to 61.778 millions of USD with a WACC of 10%.

Terminal Growth	Enterprise Value	Equity Value	Equity Value per Share
0,5%	86.823	70.024	59,38
1%	88.448	71.649	60,75
1,5%	90.482	73.683	62,48
2%	93.017	76.218	64,63
2,5%	96.173	79.374	67,30
3%	100.121	83.322	70,65
3,5%	105.101	88.302	74,88

Table 27 – Sensitivity Analysis of Time Warner with variable Terminal Growth (millions of USD, except per share data)

The Terminal Growth Rate of Time Warner have a similar impact comparing with the WACC in the Enterprise Value and subsequently Equity Value and Equity Value per Share of Time Warner. The Equity Value ranges from 70.024 millions of USD with a Terminal Growth Rate of 0,5% to 88.302 millions of USD with a Terminal Growth Rate of 3,5%.

6.2.2 AOL

6.2.2.1 FCFF Base scenario

6.2.2.1.1 WACC

As it was done for Time Warner, we firstly need to compute or estimate the following variables: Marker Value of Equity (E), Market Value of Debt (D), Cost of Equity (Re), Cost of Debt (Rd) and Tax Rate (t).

The Market Value of Equity (E) is computed using the share price and outstanding number of shares of AOL in 31st December of 1999 from the Compustat data source. So, the computation is the following:

- $E = 75{,}86\ USD * 2.235\ million\ shares = 169.618\ million\ USD$

The Market Value of Debt (D) can be estimated using the last year-end Balance Sheet before the merger that is the Balance Sheet form 31st of June 1999 and retrieving the Long-term debt that is the following:

- $D = 348\ million\ USD$

The Cost of Equity (Re) is computed using the CAPM and the *equation (5.7)*. In order to apply it I used the following variables:

- Risk-free rate = 6,44% (average rate for the USA market – Damodaran, 1999);
- Market Risk Premium = 2,50% (average premium for the USA market – Damodaran, 1999);
- βu = 1,522 (using the Internet Unlevered Beta estimation of Damodaran)
- βl = 1,520 (after applying the capital structure of AOL to the Unlevered Beta)

And then I applied the CAPM formula and arrived at the Cost of Equity (Re):

- Re = 6,44% + 1,52*(2,50%) = 10,25%

The Cost of Debt (Rd) was computed using data from both the Balance Sheet and Income Statement of AOL of 1999:

- $Rd = \frac{Interest\ Expense}{Market\ Value\ of\ Debt} = \frac{20\ million\ USD}{338\ million\ USD} = 5{,}75\%$

The Tax Rate (t) used was the following:

- T = 22% (average of Internet companies, Damodaran 1999)

After this I applied the *equation (5.6)* and arrived at the WACC:

$$\text{WACC} = \frac{169.618}{(338 + 169.618)} * 10{,}25\% + \frac{338}{(338 + 169.618)} * 5{,}75\%(1 - 22\%) = 10{,}23\%$$

6.2.2.1.2 Assumptions

The first assumption that I made was regarding the growth of the **Revenues** of AOL. For that, I used information gathered by Tom Copeland, Managing Director of the Monitor Group[28] Corporate Finance Department in 2001. This information was an average between the projections for the growth in Revenues of AOL between 1999 and 2006 made by the following analysts: ING Barings, BankBoston Robertson Stephens, Donaldson, Lufkin, and Jenrette. These analysts previewed that the conditions of the Internet Market would not change from the period between 1999 and 2006. The average between the projected growth rates for the period between 1999 and 2006 was **23%**. The same analysts also projected an average terminal growth rate of **8%.**

The rates predicted by the analyst are pretty outstanding since there was a sense of optimism among them about the Internet segment that was experiencing major growth rates in the years before 1999. The Internet segment was viewed as being completely apart from the predictions regarding the Media and Entertainment market.

Applying the estimated revenue growth rate to the revenues of AOL we arrive at the following evolution:

[28] The Monitor Group is a global Management Consulting firm ranked as one of the most prestigious consulting firms

	Historical	Projection						
	1999	2000	2001	2002	2003	2004	2005	2006
Revenues	4.777	5.872	7.218	8.873	10.907	13.408	16.482	20.260

Table 28 – Revenue evolution of AOL (1999-2006; millions of USD)

Like I did for Time Warner, after forecasting the Revenues for the period in analysis I made an assumption about the value of the **EBIT divided by the total Revenues**. For this assumption I also used the information gathered by Tom Copeland. Once again, he made an average of the analyst's forecasts for the future operating margin of AOL as of 1999. This is information is shown in the following table:

	2000	2001	2002	2003	2004	2005	2006
EBIT/REVENUES	17%	20%	23%	25%	27%	29%	31%

Table 29 – Average of the analysts forecasts for the future operating margin of AOL (1999-2006; %)

Subsequent to the operating margin assumption, I focused on the investing activity of AOL and its decomposition in *Capex* (Fixed Assets investment) and Net Working Capital investment (difference between the Current Assets and Currents Liabilities).

Once again, like I did for Time Warner, in order to define the evolution of these two variables for the period of forecast (1999-2006) I analyzed the historical evolution of the Revenues, Fixed Assets (FA), Depreciation & Amortization (D&A), Current Assets (CA) and Current Liabilities (CL) in the financial statements of AOL from 1990 until 1999 and computed the four variables that I needed (FA/Revenues, Depreciation & Amortization, CA/Revenues and CL/Revenues) and its average as shown in the table below:

	1991	1992	1993	1994	1995	1996	1997	1998	1999	Average
Revenues	21	27	40	104	394	1.094	1.685	2.600	4.777	
Fixed Assets	1	1	2	18	70	101	233	363	657	
FA/REVENUES	**5%**	**5%**	**6%**	**18%**	**18%**	**9%**	**14%**	**14%**	**14%**	**11%**
Depreciation & Amortizaition	0,5	0,5	0,6	1	9	26	25	83	224	
D&A/REVENUES	**2%**	**2%**	**2%**	**1%**	**2%**	**2%**	**1%**	**3%**	**5%**	**2%**
Current Assets	4	19	25	105	133	271	323	930	1.979	
CA/REVENUES	**18%**	**72%**	**64%**	**101%**	**34%**	**25%**	**19%**	**36%**	**41%**	**46%**
Current Liabilities	4	4	9	40	133	290	554	894	1.725	
CL/REVENUES	**18%**	**16%**	**22%**	**39%**	**34%**	**27%**	**33%**	**34%**	**36%**	**29%**

Table 30 – Historical evolution of AOL's investing activities from 1990 until 1999 (millions of USD)

I concluded from the analysis of the historical evolution that the values of FA, CA, CL and D&A changed a lot. Taking into account this fact, I assumed the value of 1999 for the **FA/Revenues**, **CA/Revenues, CL/Revenues** and **D&A/Revenues** to remain constant and applied it for the evolution between 2000 and 2006:

	Historical	Projection						
	1999	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Current Assets	1.979	2.408	2.960	3.638	4.472	5.497	6.757	8.307
Current Liabilities	1.725	2.114	2.599	3.194	3.927	4.827	5.933	7.294
Net Working Capital	254	294	361	444	545	670	824	1.013
Change in NWC		**40**	**67**	**83**	**102**	**125**	**154**	**189**
Fixed Assets	657	822	1.011	1.242	1.527	1.877	2.307	2.836
Change in FA		**165**	**188**	**232**	**285**	**350**	**430**	**529**
Invested Capital		**205**	**256**	**314**	**386**	**475**	**584**	**718**
Depreciation & Amortization	**224**	**235**	**247**	**259**	**272**	**286**	**300**	**315**

Table 31 – Forecasted evolution of AOL's investing activities from 2000 until 2006 (millions of USD)

The last assumption that needs to be made in order to perform a FCFF analysis is regarding the corporate Tax Rate. For this I used the same rate that I applied in the computation rate of the WACC of AOL that is the following:

- T = 22% (average of Internet companies, Damodaran 1999).

6.2.2.1.3 Enterprise Value and Equity Value

Using the assumptions described in the previous point I performed a FCFF analysis of AOL and arrived at the following values:

	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
EBIT	998	1.444	2.041	2.727	3.620	4.780	6.281
EBIT (1-t)	783	1.132	1.601	2.139	2.840	3.749	4.927
Invested Capital	205	256	314	386	475	584	718
Depreciation & Amortization	235	247	259	272	286	300	315
FCFF	814	1.124	1.546	2.025	2.650	3.465	4.524
Terminal Value							218.661

Table 32 – Free Cash Flow the Firm valuation of AOL as of 1999 (millions of USD)

	1999
Enterprise Value	**138.646**
Cash and Cash Equivalents	1.424
Debt	348
Equity Value	**139.722**
Outstanding number of shares	2.235
Equity Value per Share	**62,50**

Table 33 – Enterprise Value, Equity Value and Equity Value per Share of AOL as of 1999 (millions of USD; millions of shares)

Applying all the assumptions and the FCFF that I described before I arrived at a Equity Value for AOL of 138.646 millions of USD what can be compared to the Market Capitalization of AOL at 31st of December of 1999 that was 169.618 millions of USD. This shows that, based on my valuation, AOL was largely overvalued in the market with a gap between my valuation and the Market Capitalization of 29.896 millions of USD.

This overvaluation fact was pretty common in the comparable companies of AOL as of 1999 and the subsequent Market Multiples analysis can prove that.

6.2.1.2 Market Multiples

For the Market Multiples valuation of AOL I used the average multiples for Internet companies in 1999 collected by Damodaran showed in the following table:

	Price to Sales	Price to Book Value	EV/EBITDA
Internet Market	44,31	65,35	522,90

Table 34 – Multiples for Internet companies as of 1999

After this I computed the multiples of AOL using the data from its Financial Statements and the Market Value of Equity as of 31st of December, 1999. So, following *equations 5.15* and *5.16:*

$$\text{Price to Sales} = \frac{Market\ Value\ of\ Equity}{Revenues} = \frac{169.618\ millions\ of\ USD}{4.777\ millions\ of\ USD} = 35{,}51$$

Price to Book Value = $\frac{Market\ Value\ of\ Equity}{Book\ Value\ of\ Equity} = \frac{169.618\ millions\ of\ USD}{3.033\ millions\ of\ USD} = 145{,}84$

Enterprise Value to EBTIDA = $\frac{Enterprise\ Value}{EBITDA} = \frac{138.646\ millions\ of\ USD}{802\ millions\ of\ USD} = 172{,}88$

The combination of the Media Conglomerate Market and the Time Warner's multiples lead to the following conclusions:

- **Price to Sales:** the multiple of AOL is lower than the Internet Market average. The comparable companies of AOL have in average a Market Capitalization 44,31 times higher than its yearly Sales, what compares to the case of AOL where its Market Capitalization is 35,41 times higher than its yearly Sales;
- **Price to Book Value:** the multiple of AOL is higher than 2 times the Internet Market average. The comparable companies of AOL have in average a Market Capitalization 65,35 times higher than its Book Value, what compares to the case of AOL where its Market Capitalization is 145,34 times higher than its yearly Book Value;
- **Enterprise Value to EBITDA:** the multiple of AOL is lower than the Internet Market average. The comparable companies of AOL have in average an Enterprise Value 522,90 times higher than its yearly EBITDA, what compares to the case of AOL where its Enterprise Value is 172,88 times higher than its yearly EBITDA.

The Market Multiples analysis shows that there is a high probability that the comparable companies of AOL were also over valuated in the market since that these companies had in average two Multiples larger than AOL.

6.2.1.3 Sensitivity Analysis

In order to evaluate the sensitivity of my results for the Enterprise Value, Equity Value and Equity Value per Share of AOL I changed the values of the WACC, Normal Growth Rate and the Terminal Growth Rate.

WACC	Enterprise Value	Equity Value	Equity Value per Share
8,5%	581.210	582.286	260,47
9%	296.135	297.211	132,95
10,2%	138.646	139.722	62,50
11%	106.084	107.160	47,94
12%	82.328	83.404	37,31
13%	68.074	69.150	30,93

Table 35 – Sensitivity Analysis of AOL with variable WACC (millions of USD, except per share data)

Small changes on the WACC make a huge difference in the Enterprise Value and subsequently in the Equity Value and Equity Value per Share of AOL. This result is due to the small difference between the AOL WACC (10,23%) and the Terminal Growth Rate (8%). The Equity Value of AOL vary from 582.286 millions of USD with a WACC of 8,5% until 69.150 millions of USD with a WACC of 13%.

Normal Growth	Enterprise Value	Equity Value	Equity Value per Share
18%	110.446	111.522	49,89
20%	121.177	122.253	54,69
22%	132.882	133.958	59,92
22,9%	138.646	139.722	62,50
25%	152.425	153.501	68,67
27%	166.889	167.965	75,14
29%	182.596	183.672	82,16

Table 36 – Sensitivity Analysis of AOL with variable Normal Growth (millions of USD, except per share data)

When I apply changes in the Normal Growth Rate between 1999 and 2006 for AOL – the analysts projected a 22,9% growth – the Enterprise Value of AOL, and subsequently the Equity Value and Equity Value per Share, don't vary a lot comparing to the changes caused by the WACC that I described earlier. The Equity Value varies from 111.522 millions of USD with a 18% Normal Growth Rate to 183.672 millions of USD with a 29% Normal Growth Rate.

Terminal Growth	Enterprise Value	Equity Value	Equity Value per Share
6,5%	94.849	95.925	42,91
7%	104.763	105.839	47,34
7,5%	118.508	119.584	53,49
8%	138.646	139.722	62,50
8,5%	170.694	171.770	76,84
9%	229.108	230.184	102,97
9,5%	367.715	368.791	164,97

Table 37 – Sensitivity Analysis of AOL with variable Terminal Growth (millions of USD, except per share data)

The third variable from the Sensitivity Analysis is the Terminal Growth Rate of AOL that the analysts appointed to be 8% in for the period beginning in 2006. The changes in the Terminal Growth Rate of AOL make some differences in the values of the Enterprise Value, Equity Value and Equity Value per Share but less than the changes caused by the vary of the WACC. The Equity Value of AOL varies from 95.925 millions of USD with a Terminal Growth Rate of 6,5% to 368.791 millions of USD with a Terminal Growth Rate of 9,5%.

Concluding the Sensitivity Analysis of my results taking into account changes in the WACC, Normal Growth and Terminal Growth it is clear that the WACC is the variable that causes biggest changes in the results when I vary it. The variable with the second biggest impact is the Terminal Growth Rate and for last the Normal Growth Rate.

7. Market response to the Merger

In this chapter I'm going to try to briefly analyze the market response to the announcement of the Merger. The analysis will be based on the stock return data but also will take into account the theory developed on this field that led to the conclusion that "investors systematically fail to assess quickly the full impact of corporate announcements (Andrade, Mittchell and Stafford, 2001: 18)".

In order to assess the market response I created a graph with the evolution of the Stock Price Abnormal Return for both the Target (Time Warner) and the Acquirer (AOL) using a timeline between the day after the announcement of the Merger – 10th of January 2000 – and the subsequent 30 trading days.

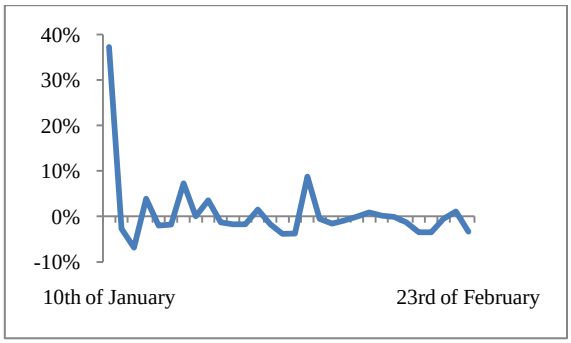

Figure 5 - Abnormal return of Time Warner during 30 days after the announcement of the Merger (2000)

The evolution of Time Warner's Abnormal Return shows that there was some inconsistency in the response of the market and its ability to clearly assess the impact of the Merger for the business of Time Warner. The Abnormal Return changed from -7% to a maximum of nearly 37% on the day of the announcement.

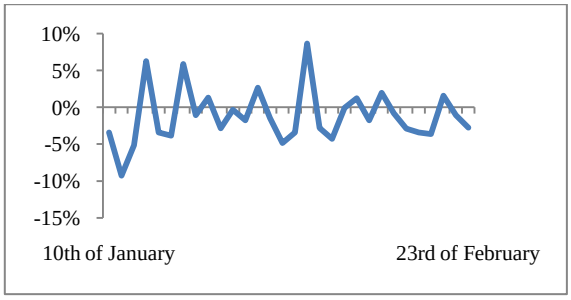

Figure 6 - Abnormal return of AOL during 30 days after the announcement of the Merger (2000)

Taking the analysis into the Acquirer (AOL) I arrive at the same conclusion regarding the ability of the market to assess the full impact of the Merger and its response. The reaction of the market was also inconsistent and the Abnormal Return of AOL ranged from -10% and 15% with many ups and downs within the analyzed trading days.

Another conclusion of Andrade, Mittchell and Stafford (2001) was that normally the Target company is the one that benefits more with the Merger when we only examine the Stock Market short-term evolution around the announcement day to assess the shareholder value created by a Merger. The Table 38 shown bellow reveal that Time Warner had a greater return than AOL at the 3 days around the announcement of the Merger (1 day before until 1 day after) and from 20 days before the announcement until the close of the deal. This result is in line with the findings of Andrade, Mittchell, Stafford and Teoh (2001) shown in the Table 39, where we can see that the Target companies had in average a greater return than the Acquirer companies around the announcement day from 1973 until 1998.

	Abnormal Cumulative Return	
	Time Warner	AOL
-1;+1	28,0%	-11,3%
-20; Close	11,5%	-4,7%

Table 38 – Announcement Period Abnormal Returns of Time Warner and AOL (2000)

	Abnormal Cumulative Return	
	Target	Acquiror
-1;+1	13,0%	-1,5%
-20; Close	20,8%	-6,3%

Table 39 - Announcement Period Abnormal Returns by Decade (1973-1998)[29]

Through this analysis I can state that Time Warner (Target) was the short-term winner of the Merger if we only consider the reaction of the market. If I take into account that the stock of AOL was highly overvalued I can conclude that Time Warner was not receiving, in practical terms, the purchase price fixed in the deal. I can also conclude that the market failed to assess the full impact of the Merger since it overvalued the benefits of the AOL stock value for Time Warner.

[29] This table is from the paper "New Evidence and Perspectives on Mergers" by Andrade, Mittchel, Stafford and Teoh published in 2001

8. Conclusions of the Case Study

The Case Study of the Time Warner and AOL Merger tried to assess the main reasons behind the failure of the merger with the information that was accessible just a few days after the announcement of the merger. From this perspective I excluded the information regarding the effectiveness of the proposed synergies that could be done using the financial information of the merged company years after the merger.

At an initial point of view, it is important to identify the main reasons behind the failure in general terms, without taking into account the single situation of both companies. Firstly, the proposed synergies were too optimistic if we consider the position of all the major players in the markets and segments were both companies operated. The main players were all well established and there was not too much space for cross-selling and revenue enhancements like both companies wanted. At the stock market perspective, its response to the announcement of the merger was inconsistent and Time Warner had some short-term positive returns inconsistent with the fact that AOL was extremely overvalued.

Moving the conclusions into an enterprise point of view, I will start by the conclusions regarding the situation of the target party. Time Warner was overvalued in the stock market as I showed in my valuation and the price of its acquisition (147 billions of USD) was almost twice its value (76,2 billions of USD). The company also overestimated the impact that the Internet segment could have in its business.

Finally, there can be identified some possible reasons for the failure in the perspective of the acquirer company. AOL was extremely overvalued in the stock market and tried to benefit from that by purchasing a media conglomerate in an all stock deal. Like it is quoted in the study of Dong, Hirshleiferer, Richardson, Teoth (2006: 1), "AOL stock was ridiculously overvalued … Time Warner that sold itself for wampum".

The Merger between Time Warner and AOL is a paradigmatic case of double overvaluation (acquirer and target) and also overestimation of the proposed synergies since both companies were trying to take advantage of a segment in a bubble situation. Time Warner shareholders didn't had the ability to see that AOL stock was overvalued and that they were selling the company for a very unfair and unrealistic price.

9. Annexes

Annex A – Global entertainment and media market by region from 1997 until 2000 (million USD)

Global entertainment and media market by region ($ Millions)					
Region	**1997**	**1998**	**1999**	**2000**	**CAGR 1997-2000**
United States	344.225	374.701	402.555	435.922	6,1%
Europe, Middle-East and Africa	269.961	287.810	305.896	330.828	5,2%
Asia/ Pacific	177.440	181.684	192.661	210.378	4,3%
Latin America	42.784	44.749	43.594	47.411	2,6%
Canada	18.378	20.022	21.099	22.967	5,7%
Total	**852.788**	**908.966**	**965.805**	**1.047.506**	**5,3%**

Annex B – Entertainment and media market by segment in the USA from 1997 until 2000 (million USD)

Entertainment and media market by segment in the USA ($ Millions)					
	1997	**1998**	**1999**	**2000**	**CAGR 1997 -2000**
TV Distribution (Station, Cable and Satellite)	54.145	58.809	63.937	70.156	6,7%
Educational and Professional Books and Training	59.386	63.032	66.031	67.041	3,1%
Newspaper Publishing	51.396	54.192	56.761	59.212	3,6%
Business Information	32.100	34.400	37.100	39.950	5,6%
TV Networks (Broadcast and Cable)	26.252	29.490	32.316	37.500	9,3%
Magazine Publishing	30.942	32.694	33.803	35.802	3,7%
Filmed Entertainment	21.569	23.307	24.789	26.557	5,3%
Radio and Out-of-Home Advertising	17.538	19.478	22.047	24.471	8,7%
Internet Advertising and Acess Spending	5.504	8.443	14.018	19.920	37,9%
Consumer Book Publishing	15.957	16.852	17.387	17.177	1,9%
Recorded Music	12.237	13.723	14.585	14.324	4,0%
Sports	8.804	22.571	11.681	14.212	12,7%
Theme Parks and Amusement Parks	8.395	8.710	9.100	9.600	3,4%
Total	**344.225**	**374.701**	**402.555**	**435.922**	**6,1%**

Annex C – High-impact segments of the media and entertainment market as of 2000

Annex D – Advertising spending by segment in the USA from 1997 until 2000 (million USD)

Advertising spending by segment in the USA ($ Millions)					
	1997	**1998**	**1999**	**2000**	**CAGR 1997 -2000**
Newspapers	41.330	43.925	46.289	48.671	3,3%
Cable Systems and Television Stations	23.360	25.061	25.847	29.046	4,5%
Television Networks: Broadcast and Cable	19.403	21.524	23.492	27.599	7,3%
Magazines	19.251	20.335	21.346	23.260	3,9%
Radio	13.491	15.073	17.215	19.295	7,4%
Internet	907	1.920	4.621	8.225	55,4%
Out-of-Home	4.047	4.405	4.832	5.176	5,0%
Total	**121.789**	**132.243**	**143.642**	**161.272**	**5,8%**

Annex E – Consumer/ end-user spending market by segment in the USA from 1997 until 2000 (million USD)

Consumer/ end-user spending market by segment in the USA ($ Millions)					
	1997	**1998**	**1999**	**2000**	**CAGR 1997 -2000**
Educational and Professional Books and Training	59.386	63.032	66.031	67.041	3,1%
TV Distribution (Station, Cable and Satellite)	30.785	33.748	37.090	41.110	7,5%
Business Information	32.100	34.400	37.100	39.950	5,6%
Filmed Entertainment	21.569	23.307	24.789	26.557	5,3%
Consumer Books	15.957	16.852	17.387	17.177	1,9%
Recorded Music	12.237	13.723	14.585	14.324	4,0%
Sports	8.804	11.571	11.681	14.212	12,7%
Magazines	11.691	12.359	12.457	12.542	1,8%
Internet Acess Spending	4.597	6.523	9.397	11.695	26,3%
Newspapres	10.066	10.267	10.472	10.541	1,2%
TV Networks (Broadcast and Cable)	6.849	7.966	8.824	9.901	9,7%
Theme Parks and Amusement Parks	8.395	8.710	9.100	9.600	3,4%
Total	**222.436**	**242.458**	**258.913**	**274.650**	**5,4%**

Annex F – Time Warner's statement of operations from 1994 until 1998 (million USD)

Time Warner Inc. Statement of Operations					
values in millions of USD, expect per share data	**1994**	**1995**	**1996**	**1997**	**1998**
Revenues	**7.396**	**8.067**	**10.064**	**13.294**	**14.582**
Business Segment Operating Income	713	697	966	1.271	1.496
Equity in pretax income of entertainment group	176	256	290	686	356
Interest and other (net)	**-724**	**-877**	**-1.174**	**-1.044**	**-1.180**
Income before extraordinary item	**-91**	**-124**	**-156**	**301**	**168**
Net Income	**-91**	**-166**	**-191**	**246**	**168**
Net Income applicable to common shares (after preferred dividends)	-104	-218	-448	-73	-372
Net Income per share of common share					
Basic	-0,1	-0,3	-0,5	-0,1	-0,3
Diluted	-0,1	-0,3	-0,5	-0,1	-0,3
Dividends per share	**0,2**	**0,2**	**0,2**	**0,2**	**0,2**
Average common share					
Basic	757,8	767,6	862,4	1.135,4	1.194,7
Diluted	757,8	767,6	862,4	1.135,4	1.194,7
EBITDA	**1.150**	**1.256**	**1.954**	**2.565**	**2.674**

Annex G – Time Warner's selected balance sheet data from 1994 until 1998 (million USD)

Time Warner Inc. Balance Sheet Data					
values in millions of USD, expect per share data	**1994**	**1995**	**1996**	**1997**	**1998**
Cash and equivalents	282	1.185	514	645	442
Total assets	16.716	22.132	35.064	34.163	31.640
Short-term Debt	355	34	11	8	19
Long-term Debt	8.839	10.856	14.150	12.941	12.395
Series M preferred stock			1.672	1.857	
Shareholders' equity					
Preferred stock liquidation preference	140	2.994	3.559	3.539	2.260
Equity aplicable to common stock	1.008	673	59.343	5.917	6.592
Total shareholders' equity	1.148	3.667	9.502	9.356	8.852
Total capitalization	10.342	14.557	25.335	24.162	21.266

Annex H – America Online's statement of operations from 1995 until 1999 (million USD)

America Online Statement of Operations					
values in millions of USD, expect per share data	**1995**	**1996**	**1997**	**1998**	**1999**
Revenues	**425**	**1.323**	**2.197**	**3.091**	**4.777**
Business Segment Operating Income	-34	86	-446	-63	529
Interest and other (net)	**3**	**5**	**10**	**30**	**638**
Net Income	**-55**	**35**	**-485**	**-74**	**762**
Net Income per share of common share					
Basic	-0,05	0,02	-0,04	-0,04	0,37
Diluted	-0,05	0,02	-0,04	-0,04	0,30
Average common share					
Basic	1,2	1,5	1,7	1,9	2,0
Diluted	1,2	1,9	1,7	1,9	2,4
EBITDA	**22**	**131**	**95**	**265**	**866**

Annex I – America Online's selected balance sheet data from 1995 until 1999 (million USD)

America Online Balance Sheet Data					
values in millions of USD, expect per share data	**1995**	**1996**	**1997**	**1998**	**1999**
Cash and equivalents	663	177	191	677	887
Total assets	459	1.271	1.501	2.874	5.348
Short-term Debt	3	3	2	2	6
Long-term Debt	21	22	52	372	358
Total shareholders' equity	242	707	610	996	3.033
Total capitalization	266	732	664	1.370	3.397

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