

THE PENNSYLVANIA STATE UNIVERSITY  
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DEPARTMENT OF TELECOMMUNICATIONS

MEASURING THE STOCK RETURNS OF TELECOMMUNICATIONS AND INTERNET  
COMPANIES BY STUDYING THE EFFECTS OF FREQUENT MERGERS AND  
ACQUISITIONS

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## ABSTRACT

This research paper aims to analyze a popular investment strategy in the technology and telecommunications market sectors. Over the years, it has been evident that many companies in these industries believe that the larger they grow in size, the better. This study challenges that notion by assessing the effect of frequent mergers and acquisitions on market capitalization and comparing the results of companies that merge and acquire frequently with comparison companies that do so less frequently.

The hypothesis undergirding this thesis research is to see whether there is a difference between companies that frequently acquire or merge with other companies and those that do not. For the purposes of this study, the median split method was utilized to divide the largest companies within two market sectors (technology and telecommunications) into two groups and assess the change in market capitalization over a ten-year period. Then correlation and regression methods were used to further analyze the data.

This analysis focuses on the largest wireless providers and the largest Internet companies by total revenue in the United States in the fiscal year 2016-2017. The analysis captures performance data from 2007 until 2017. After studying these, it is concluded that contrary to the dominant narrative that frequent mergers and acquisitions are “good for business”, there is no clear difference between high and low M&A investment strategy on market capitalization. Companies in both industries performed well in some instances and not very well in others. These findings raise questions about the popular notion that growing larger in these industries is a road to success, but rather that each company should customize its strategy to fit its needs.

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## **Chapter 1**

### **Introduction**

Mergers and acquisitions have been a common growth strategy for many companies across diverse market sectors. The telecommunications and technology industries are ones that have seen a great amount of conglomerization activity over the past few decades. From speaking to various researchers in this industry, it is clear that the prevailing theory is that mergers and acquisitions bring a lot of economic benefits, and that the more of them the better. According to a journal published by KSI Transactions on Knowledge Society, “companies which choose to grow, normally try to take an additional market share, reach new customer base, create economic profits, provide returns for their stakeholders, etc., while companies which choose not to grow, are obviously doomed to failure due their loss of customers and market shares, destroyed shareholder and stakeholder values and so on. Today growth in many cases occur through mergers and acquisitions (M&As). (Tamosiuniene, & Duksaite, 2009). This research paper studies the effects of this investment strategy and hopes to challenge the notion that a high number of M&A’s is beneficial for all firms in the wireless telecommunications and technology Internet industries.

According to a research paper published in the Etri Journal about M&A’s in the telecommunications industry, “It is commonly believed that M&As strengthen businesses by making their operations more synergistic. However, a large number of empirical studies have actually demonstrated that M&As have either a negative effect on business performance or simply no effect at all. For example, AT&T recently acquired TCI cable in order to develop a



bundled digital phone service. However, evidence suggests that this acquisition has yet to bring about any synergism or for that matter, any other benefits to AT&T business operations.” (Park, Yang, Nam, & Ha, 2002).

## **Background**

M&A's have been occurring for hundreds of years, from the days of the British East India Company to contemporary proceedings around AT&T/Time-Warner, and across many industries. There are different types of M&A's and each strategy is utilized for different purposes. The Burnie Group effectively describes the different types, and these are mainly horizontal mergers/acquisitions, vertical mergers/acquisitions, conglomeration and reverse mergers/acquisitions. Horizontal mergers/acquisitions occur with a direct competitor. Vertical mergers/acquisitions occur with companies above or below in the supply chain. Conglomerates occur between companies in different industries. Reverse mergers/acquisitions are used by private companies to go public without an IPO. (Berniegroup.com, n.d.). There are obvious financial and non-financial benefits of merging with or acquiring another firm, however not all companies are stable enough to be following this popular strategy. Financial benefits include higher shareholder value and increased profits. Non-financial reasons include acquiring new technology and access to skilled employees. These reasons will be discussed in more detail in the paragraphs below.

In order to understand how the strategy became popular, it is helpful to understand the history of M&A's. According to an article titled “2015: A Merger Bonanza” published in The

Atlantic, “In the last 100-odd years, there have been six waves of rapid merger activity in the U.S. At the turn of the 20th century, horizontal mergers, which united companies in the same industry (such as steel or oil) and formed monopolies, were common. Another wave, this one in the 1960s, saw companies trying to diversify, with mergers that created conglomerates such as General Electric, which had businesses ranging from manufacturing equipment, to television, and even financial services. In the 1990s, deregulation and globalization led to another wave, one that was heavily concentrated in the banking and telecommunications industries.” (Lam, 2016).

Today, the business world is going through another wave with the advancement in technology. Most companies are basing their investment strategies on the need to acquire patents and/or integrate new technology into its processes. A lot of companies are introducing robots, artificial intelligence and augmented reality in different forms in order to remain up-to-date and competitive. It is safe to say that technology is driving the motivation behind a lot of these mergers and acquisitions. According to a report published by the Boston Consulting Group, “tech isn’t for tech companies anymore – and it hasn’t been for some time. Nearly every industry has been affected by digital and mobile technologies, and many have been upended. Other advances, such as robotics and additive manufacturing, are also taking hold. No company can afford to ignore the impact of technology on everything from supply chains to customer engagement, and the advent of even more advanced technologies, such as artificial intelligence (AI) and the Internet of Things, portends more far-reaching change. For an increasing number of organizations, the answer is to buy rather than to build. Approximately 70% of all tech deals in 2016 – 9 percentage points more than 2012 – involved buyers from outside the tech sector.” (Kengelbach, Keienburg, Schmid, Sievers, Gjerstad, Nielsen, & Walker, 2017). However, in recent studies it has been proven that a large percentage of these M&A’s is not successful -

according to journal published in the Harvard Business Review, “study after study puts the failure rate of mergers and acquisitions somewhere between 70% and 90%.” (Christensen, Alton, Rising, & Waldeck, 2011).

The percentage of failure is really high, and it is obvious that there are other factors encouraging companies to merge with and acquire other companies. Economic efficiencies are an obvious motive, however, there are other factors that influence these companies’ decisions. Many companies prioritize their shareholders. If a merger or an acquisition proves that it will result in shareholder gains, then many companies will consider moving forward with it. According to a journal published by Eprentise.com, “the hope is that with a merger, shareholder value will be increased by emergent synergies that include cost reductions achieved through economies of scale, the combination of duplicate corporate functions, and streamlined sales forces; capital efficiencies achieved through rationalized assets and the combination of duplicate facilities; and revenue enhancement effected though product development synergy (new products), shared marketing skills, and combined distributions.” (Abrams, 2013). According to a research paper published by Toulouse School of Economics and the University of Crete, the “diffusion of know-how” is another popular reason (Motis, 2007). This is a common motivation for companies in the wireless telecommunications and Internet industries. If there is technology that the company is trying to acquire or get the patent for, then a merger or an acquisition is an easy solution. Human capital is also another factor, as some companies have employees who know how to build a specific technology, and that is an invaluable asset.

## Factors Affecting Analysis

Due to the limited sample size caused by the limited number of major competitors in the market sectors chosen for this exploratory analysis, certain assumptions had to be made when performing data analysis. These are outlined below:

The telecommunications sector is broken up into various sub-sectors. The focus of this study is on the four major wireless providers (i.e., AT&T, Verizon, Sprint and T-Mobile), which together account for 98.58% of the overall market (Statista.com, 2017). The technology sector is likewise also broken up into various industries, and this initial analysis focuses on the five largest Internet companies (i.e. Google, Microsoft, Facebook, Amazon and Apple); however, since Facebook's IPO was in 2012, market capitalization data for this one company could only be gleaned from this date forward.

During the literacy review, a paucity of research specifically focusing on the impact of the frequency of M&A's on market capitalization was found, which made it difficult to use the CAPM model to assess stock performance over the years. Thus, the median split method was used and market capitalization was derived for the observed years.

For the purposes of this research, it is important to understand the relationship between market capitalization and stock returns. A company's value, this the value of its stock can be determined by calculating market capitalization. According to Investopedia.com., "Market capitalization represents the market value for an entire company. Investors can compare market cap to financial data to evaluate the price relative to fundamental returns. Market cap is also useful for identifying the type of stock and setting appropriate growth, risk and dividend expectations." (Investopedia.com, 2015). Stock returns affect market capitalization, and this

research paper broke down market capitalization into sub-parts to better understand the overall effect on the financial performance of the company.

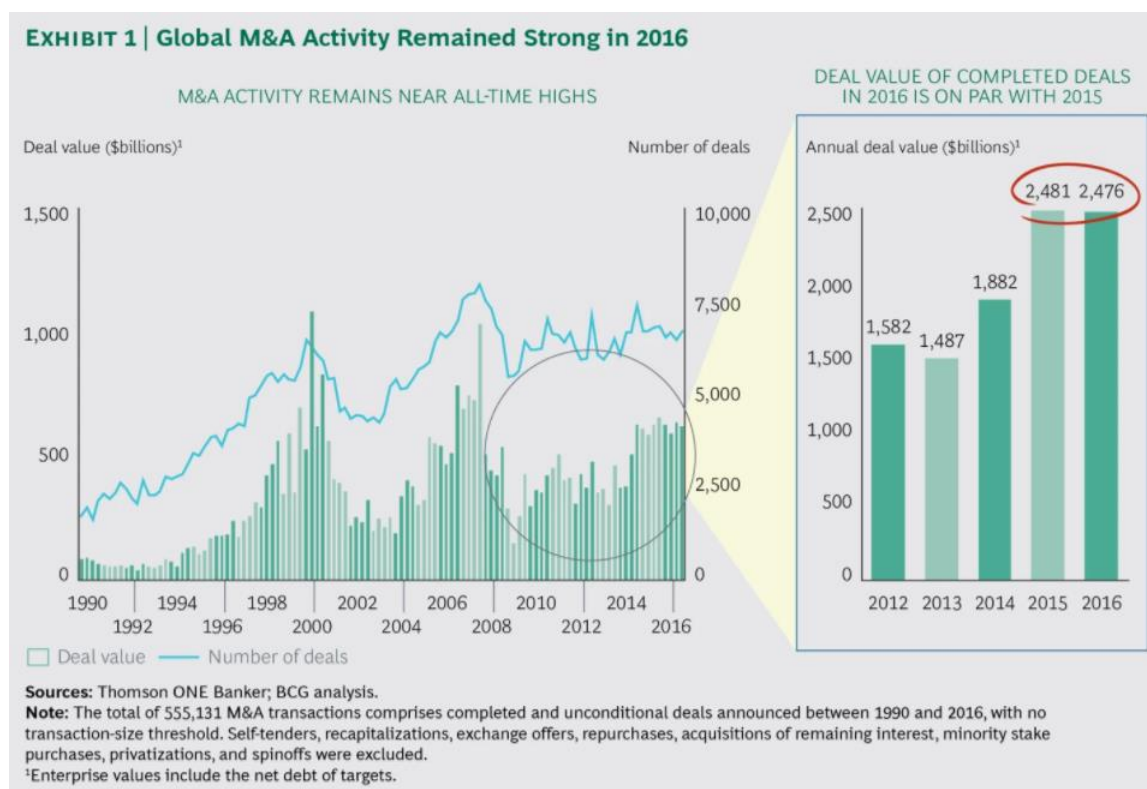
There were also various factors that were not taken into consideration during this research. In the following chapters, the methods utilized included correlation and regression with a limited number of factors used to make the analysis. There are many factors that influence market capitalization, other than the percentage in earnings per share, percentage change in shares and the number of M&A's. Market capitalization is affected by two main factors, and those are stock price and the number of shares issued or repurchased by the company. Stock price is influenced by many factors that can be baked into the stock price. According to research published Zacks Investment Research, according to the NYSE, the primary factor influencing stock price is supply and demand. If there is a high demand for a stock from investors, then the price goes up, and vice versa. Another obvious factor is financial performance of the company. A company that consistently increases its earnings and meet's investors' expectations would have a higher stock price. Economic trends can also affect the price of the stocks even if they are not directly related to the company or its industry. An economic boom could result in high prices.

News about the particular company can influence what investor's feel about the company. For instance, if an article is published accusing a company of child labor in developing countries, then the price of its stocks would go down. As stated in the Zack's Investment Research, "money is an emotional subject and sometimes emotions trump reason when it comes to stock investment, resulting in market prices being driven up or down far beyond what is justified by the company's performance." ([finance.zacks.com](http://finance.zacks.com))

## Chapter 2

### Industry Trends

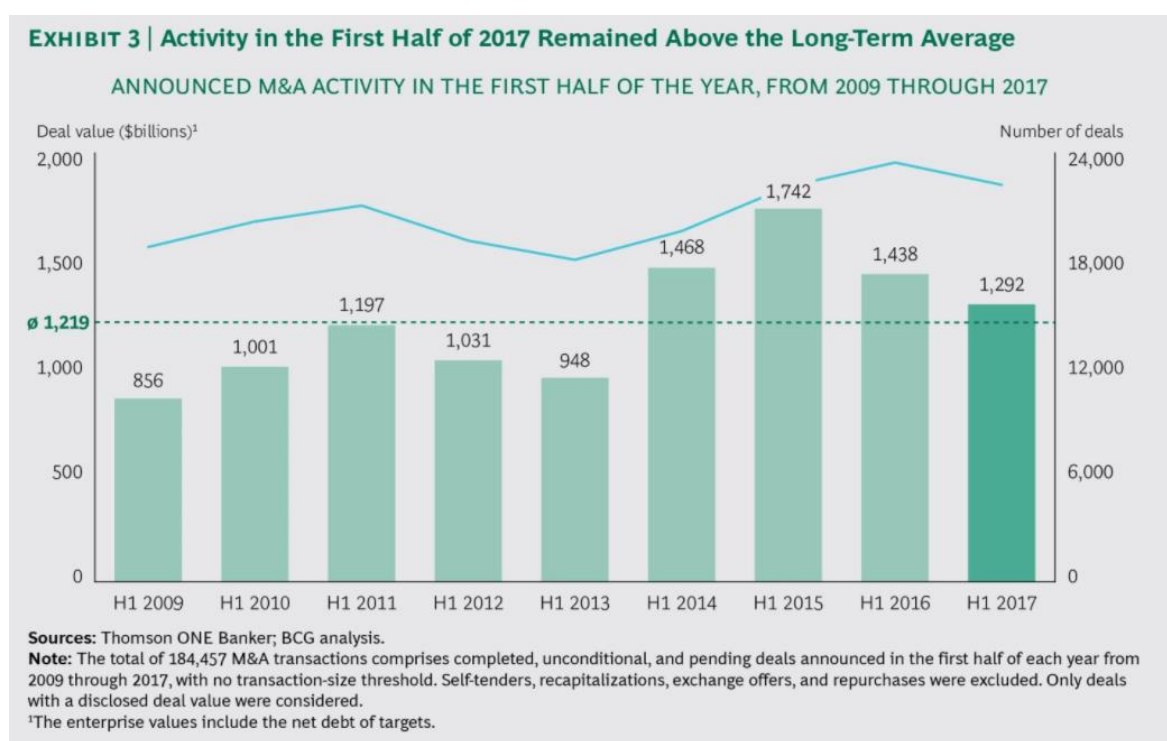
The number of M&A's has been on the rise for the past few years. The figure below, from the report by the Boston Consulting Group, demonstrates the sharp rise in M&A activity across all industries (Kengelbach, Keienburg, Schmid, Sievers, Gjerstad, Nielsen, & Walker, 2017). The figures show that it has been a global upward trend over the past few years. This investment strategy is one that is evident in many sectors, and the presence of weak US government regulations preventing conglomerization facilitate this happening in many industries, such as the wireless and Internet industries.



**Figure 1 Global M&A Activity Remained Strong in 2016**

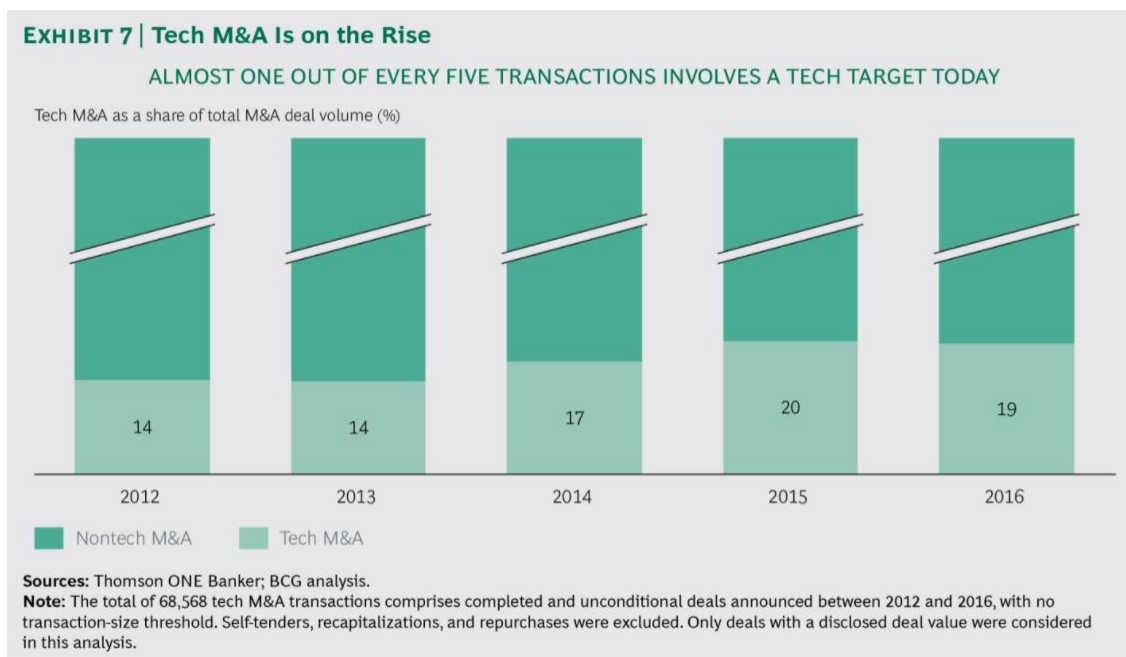
The wireless and Internet industries, each with unique factors that have made them attractive for investors, have become popular targets for M&A's. Despite political uncertainty in

the United States in 2017, M&A activity remained high as Figure 2 documents. Recent activity in M&A's has also been higher than the long-term average. It is evident that companies in the United States are following this global trend. Not only that, but they are also involving themselves in mergers and acquisitions more and more every year. In a report published by Deloitte, "Corporate and private equity executives foresee an acceleration of merger and acquisition (M&A) activity in 2018, both in the number of deals and the size of the transactions. Technology acquisition is the new No. 1 driver of M&A pursuits and dealmakers report using non-spreadsheet based M&A technology tools to help reduce conflicts, costs, and time. (Thomson, Dettmar, & Garay, 2018).



**Figure 2 Activity in the First Half of 2017 Remained Above the Long-Term Average**

I would like to start this analysis by observing the activity of the technology sector. These have been an extremely attractive target for investors. Figure 3 demonstrates the rapid increase in M&A activity in the global technology industry.



**Figure 3 Tech M&A Is on the Rise**

The telecommunications sector has experienced a large number of M&A's over the past half-decade. According to a report published by PricewaterhouseCoopers, "It will be difficult for telecom companies to embrace a new strategic identity by themselves; many of them don't have the capabilities required to create the product offerings and services needed for repositioning in the marketplace. For that reason, acquisitions are an attractive vehicle for entering new markets. In 2016, telecoms spent US\$224 billion on M&A, an increase of 137 percent over the prior year, according to Capital IQ."

Some companies opted for buying competitors to improve their product offerings, while others tried conglomerate M&A's and purchased companies in other industries. The same report states that "several other transactions are targeted at the adjacent industries strategy — in particular, AT&T's pending purchase of Time Warner and its vast storehouse of content. And the primary attraction in Verizon's acquisition of AOL in 2015 was AOL's vaunted automated online advertising program, another possible avenue of growth for telecom companies within the



nearby media spectrum. Verizon has also made a string of acquisitions, including Hughes Telematics and smart-city startup Sensity Systems, that give it a leg up in connectivity markets. Deals like these have the potential to reshape the industry, especially if they allow companies to build scale while focusing their expertise.” (El-Darwiche, Rupp, Gröne, Peladeau, 2017)

Taking the provided data into consideration, it is important to recognize that the current state of high M&A frequency will continue to be a trend in the future. As technology becomes more advanced, many companies will consider this strategy to remain competitive. The sectors chosen for this research paper are constantly experiencing the entrance of new technology so it is safe to say that the frequency will increase in the future.

In performing any business analysis, it is important to pay attention to the historical trends to help predict the future. From looking at the data over the past half-decade, it can be concluded that the trend will last a few years into the future and that it is not just a short-term trend that will shift soon. The Deloitte report mentioned above also predicts that M&A’s will increase in size and number. Executives in the aforementioned sectors must pay attention to these trends to minimize financial instability.

## **Chapter 3**

### **Methodology**

#### **Company Selection**

This thesis focuses on the relationship between the frequency of mergers and acquisitions of wireless telecommunications and Internet companies and the effect of that on market capitalization. To ensure accuracy of these data points and aid with direct comparative analysis, the largest wireless providers and Internet companies that are listed on the New York Stock Exchange (NYSE) were chosen.

The wireless provider industry is dominated by the “Big 4” providers and those are AT&T, Verizon, T-Mobile USA, and Sprint Corporation, in ascending order of revenues. (Statista.com., 2017). The Internet industry is known for its “Big 5”, and these are Apple, Amazon, Microsoft, Google and Facebook, in order of revenues. (Dolata, 2017).

#### **Data Collection**

The first step to analyze the frequency of mergers and acquisitions was to find the historical investment strategies that each company followed. The database used to extract this data is Mergent (Online). Each company was searched using its ticker symbol on the NYSE. Once a company’s ticker symbol is entered, the database shows a webpage where the history of the company is available. Each company’s history was downloaded as an excel file to better extract the needed information.

## **Data Refinement**

Once the excel file was downloaded, any data that was not related to mergers and acquisitions was eliminated from the list. In addition to that, any acquisition that was less than 50% was removed as that does not count as a majority takeover (even though, in a few cases, these minority stakes may have represented a controlling stake). In addition, any data from prior to 2007 was excluded. After that, the financial statements of each company were pulled from the companies' websites to figure out the fiscal year for each company. The fiscal year was chosen over the calendar year to see the company's strategy in relation to their regularly reported financial statements.

## **Data Analysis**

The number of M&A's for each company can be found in the table below:

<b>Company</b>	<b>No. of M&amp;A's</b>
Google	232
Microsoft	111
Apple	45
Facebook	38
Amazon	35
Verizon	17
AT&T	15
Sprint	7
T-Mobile	1

**Table 1 M&A's by company**

The companies were then split in two groups based on the median split method. This method was used to study the difference in market capitalization for companies that frequently merge and acquire and those that do not. The method is popular for changing a continuous variable to become a categorical one. According to a research study published in the Journal of Consumer Psychology, “when independent variables are uncorrelated, it is totally acceptable to conduct median split analyses, [and] our research sets the record straight that median splits are perfectly acceptable to use when independent variables are uncorrelated.” (Iacobucci, Posavac, Kardes, Schneider, & Popovich, 2015).

The companies were then grouped in their respective industries and split into categories of “high” and “low” M&A activity. In the telecommunications segment, AT&T and Verizon were labeled as “high”, and T-Mobile and Sprint were labeled as “low”. In the technology sector,

Google and Microsoft were labeled “high” and Apple, Facebook and Amazon were labeled “low”.

Next, market capitalization data was pulled from Ycharts.com, and the following results were found:

Market Capitalization: stock price x number of shares outstanding			
Data pulled from Y Charts			
<b>Google</b>	<b>31-Dec-07</b>	<b>29-Dec-17</b>	
	216,110,000,000	731,900,000,000	239%
<b>Microsoft</b>	<b>31-Dec-07</b>	<b>29-Dec-17</b>	
	332,110,000,000	659,910,000,000	99%
<b>Apple</b>	<b>30-Sep-07</b>	<b>29-Sep-17</b>	
	133,460,000,000	796,060,000,000	496%
<b>Facebook</b>	<b>31-Dec-12</b>	<b>29-Dec-17</b>	
	63,140,000,000	512,760,000,000	712%
<b>Amazon</b>	<b>31-Dec-07</b>	<b>29-Dec-17</b>	
	38,540,000,000	563,540,000,000	1362%
<b>Verizon</b>	<b>31-Dec-07</b>	<b>29-Dec-17</b>	
	117,510,000,000	215,920,000,000	84%
<b>AT&amp;T</b>	<b>31-Dec-07</b>	<b>29-Dec-17</b>	
	251,170,000,000	238,680,000,000	-5%
<b>Sprint</b>	<b>31-Dec-07</b>	<b>29-Dec-17</b>	
	37,350,000,000	23,560,000,000	-37%
<b>T-Mobile</b>	<b>31-Dec-07</b>	<b>29-Dec-17</b>	
	6,771,000,000	52,840,000,000	680%

Table 2 Market Capitalization Difference Over Ten Years

To make sure the analysis was more accurate, the year by year market capitalizations were also pulled and the following results were found:

<b>Google</b>		
<b>Fiscal Year</b>	<b>% Change in Market Cap (in Billions)</b>	<b>No. of M&amp;A's</b>
2007	51%	16
2008	-55%	4
2009	95%	6
2010	-4%	73
2011	8%	27
2012	8%	14
2013	58%	18
2014	-3%	37
2015	48%	15
2016	5%	16
2017	31%	6
		232

Table 3 Year to Year Market Cap

<b>Microsoft</b>		
<b>Fiscal Year</b>	<b>% Change in Market Cap (in Billions)</b>	<b>No. of M&amp;A's</b>
2007	14%	16
2008	-47%	16
2009	48%	6
2010	-14%	5
2011	-7%	5
2012	0%	5
2013	34%	17
2014	24%	10
2015	14%	18
2016	11%	8
2017	36%	5
		111

Table 4 Year to Year Market Cap II

<b>Apple</b>		
<b>Fiscal Year</b>	<b>% Change in Market Cap (in Billions)</b>	<b>No. of M&amp;A's</b>
2007	141%	0
2008	-56%	1
2009	136%	2
2010	53%	6
2011	24%	2
2012	30%	6
2013	-3%	13
2014	30%	9
2015	-8%	5
2016	4%	0
2017	41%	1
		45

Table 5 Year to Year Market Cap III

<b>Facebook</b>		
<b>Fiscal Year</b>	<b>% Change in Market Cap (in Billions)</b>	<b>No. of M&amp;A's</b>
2007	-	1
2008	-	0
2009	-	1
2010	-	8
2011	-	11
2012	-23%	9
2013	110%	2
2014	56%	3
2015	36%	2
2016	14%	0
2017	52%	1
		38

Table 6 Year to Year Market Cap IV

<b>Amazon</b>		
<b>Fiscal Year</b>	<b>% Change in Market Cap (in Billions)</b>	<b>No. of M&amp;A's</b>
2007	141%	2
2008	-45%	6
2009	156%	2
2010	37%	7
2011	-5%	4
2012	40%	3
2013	57%	3
2014	-21%	3
2015	122%	2
2016	19%	2
2017	57%	1
		35

Table 7 Year to Year Market Cap V

<b>Verizon</b>		
<b>Fiscal Year</b>	<b>% Change in Market Cap (in Billions)</b>	<b>No. of M&amp;A's</b>
2007	14%	2
2008	-19%	3
2009	-4%	1
2010	10%	2
2011	10%	2
2012	10%	1
2013	11%	0
2014	39%	0
2015	-4%	2
2016	16%	2
2017	-3%	2
		17

Table 8 Year to Year Market Cap VI



<b>AT&amp;T</b>		
<b>Fiscal Year</b>	<b>% Change in Market Cap (in Billions)</b>	<b>No. of M&amp;A's</b>
2007	15%	4
2008	-32%	1
2009	-5%	2
2010	3%	0
2011	2%	1
2012	4%	0
2013	-6%	2
2014	-5%	3
2015	20%	1
2016	24%	0
2017	-10%	1
		15

Table 9 Year to Year Market Cap VII

<b>Sprint</b>		
<b>Fiscal Year</b>	<b>% Change in Market Cap (in Billions)</b>	<b>No. of M&amp;A's</b>
2007	-32%	1
2008	-86%	1
2009	95%	2
2010	9%	0
2011	-48%	0
2012	143%	1
2013	143%	2
2014	-60%	0
2015	-14%	0
2016	140%	0
2017	-31%	0
		7

Table 10 Year to Year Market Cap VIII

<b>T-Mobile</b>		
<b>Fiscal Year</b>	<b>% Change in Market Cap (in Billions)</b>	<b>No. of M&amp;A's</b>
2007	-41%	0
2008	-20%	0
2009	-48%	0
2010	60%	0
2011	-32%	0
2012	6%	0
2013	663%	1
2014	-19%	0
2015	45%	0
2016	49%	0
2017	10%	0
		1

Table 11 Year to Year Market Cap IX

In order to further analyze the data, another method was used to ensure the validity of the hypothesis. Firstly, the method tests for correlation between the change in market capitalization and the number of M&A's. Secondly, a regression is done that takes into account factors, such as earnings per share (EPS), number of M&A's and the number of shares, to test for their effect on market capitalization. Each method will be explained in more detail in the paragraphs that follow.

Correlation was tested for by using IBM's software SPSS for statistical analysis. Ycharts.com was used to extract the data needed. For each year, the percentage change in market capitalization and the number of M&A's were tested for correlation. The following results were found:

Correlations				
	Sector	M&A Activity		
Google	Technology	High	-0.253	11
Microsoft	Technology	High	-0.100	11
Apple	Technology	Low	-0.250	11
Facebook	Technology	Low	-0.550	6
Amazon	Technology	Low	-0.537	11
Verizon	Telecom	High	-0.632	11
AT&T	Telecom	High	-0.048	11
Sprint	Telecom	Low	-0.468	11
T-Mobile	Telecom	Low	0.983	11
All firms			-0.073	94
High M&A firms			0.024	44
Low M&A firms			-0.058	50
Color code: Orange = insignificant, yellow = significant				

**Table 12 Correlation Results**

From looking at the data, it is concluded that for most companies there was no correlation between the number of M&A's and the percentage change in market capitalization, except for two of the low M&A companies in the telecommunications sector: T-Mobile and Verizon. It appears that market capitalization did increase once an M&A occurred. However, there are many factors that can be attributed to that. It could have been a successful merger or acquisition, which resulted in positive financial results. From looking at the data, it can also be found that in instances where a high merger and acquisition, market capitalization was negative. The mixed results prove that there is no relationship between high mergers and acquisitions and high market capitalization, and that supports the hypothesis that a high number of M&A's is not necessarily always a successful strategy.

The second method utilized is one that used regression to test for the relationship between the change in market capitalization and percent change in the number of shares, EPS and number of M&A's.

The equation used is: % change in market capitalization = a + (b x percentage change in number of shares) + (c x percentage change in EPS) + (d x number of M&A's) + error.

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.170	.058		2.916	.005
	percentshares	1.893	.137	.839	13.790	.000
	percentEPS	.014	.019	.044	.730	.467
	numberMandA	-.002	.005	-.020	-.323	.748

a. Dependent Variable: percentmarketcap

**Table 13 Regression Co-efficients**

Thus, the equation becomes:  $0.17 + (1.893 \times \text{percentage change in number of shares}) + (0.014 \times \text{percentage change in EPS}) - (0.002 \times \text{number of M\&A's}) + \text{error}$

From looking at the data above, only the coefficient in percentage of shares is significant. This can be seen in the last column of the table (labeled Sig.) as the result is 0.000. This means that is the only factor influencing market capitalization significantly. A 1% increase in the number of shares is associated with a 1.8% increase in market capitalization.

The percentage change in EPS has a sig. of 0.467, which means that there is an almost 50% probability that the number is due to chance. This means that is not influencing the price of stock. It is important to note here that these are stocks of the largest companies in their respective sectors, thus they are followed by financial analysts. The result is that the effects of earning are already factored in into the prices of stocks. In conclusion, the EPS changes are not affecting stock prices, thus they are not affecting market capitalization.

The last variable would be the percentage change in the number of M&A's. It has a sig. of 0.748, meaning that it has no effect on market capitalization. It had a negative coefficient (-0.002), which means

that the M&A activity slightly depresses market capitalization, but the effect is so small and therefore not significant.

The regression also provided the table below:

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.840 <sup>a</sup>	.705	.694	.4694914

a. Predictors: (Constant), numberMandA, percentEPS, percentshares

**Table 14 Model Summary**

The results of this table suggest that the model is able to explain almost 70% of the variation in the dependent variable, which is change in market capitalization. This can be seen in the column labeled “R Square”. The overall results of running the regression can be explained in the section below.

## Chapter 4

### Results

The data do not show any overarching trends based upon whether the company is high on the merger and acquisitions scale or not. From looking at the results of the first method, it became obvious that both investment strategies lead to mixed results. For instance, it appears that the companies labeled “high” have safer strategies and higher returns, but AT&T seems to break that trend. The data from the companies labeled “low” show mixed results as well.

When looking at the tables that display the change in market capitalization from the beginning till the end of each year, the same results were found. There was no obvious trends and no correlation between the number of M&A’s that year and the percentage change in market capitalization.

After looking at the second method using correlation, it is clear that there is no correlation between the percentage change in market capitalization and the number of M&A’s. This suggest that the dominant investment strategy of doing frequent M&A’s is not necessarily successful in all cases.

The regression results provide interesting insights as well. The regression results suggest that M&A activity does not affect market capitalization. The percentage change in M&A’s had a very high probability of being due to chance, which means that does not directly have an effect. Whether the company had a high or low number of M&A’s does not make a difference. Given the results found in this research paper, it is important for companies to assess their current financial position before moving forward with a merger and acquisition. Since 70%-90% of mergers and acquisitions fail, it is worth studying the matter before deciding to go with the trending investment strategy. In many instances, market capitalization was very low when

M&A's were high. Even though there are many other factors that have to be taken into consideration before making a complete analysis, it is important for a company to study its history with M&A's before acquiring or merging with other companies.

Historical data analysis would be helpful for both "high" and "low" M&A companies but is especially helpful for those that were reported as "high" M&A companies. This is necessary to determine the factors that are contributing to the low market capitalization. There could be byproducts of high M&A's that are resulting in these low numbers. Perhaps, productivity and moral are going down because of constant culture clashes. Another reason could be the lack of "know-how" within the company that hinders its success in utilizing the new technology acquired.

Historical analysis could also highlight some other factors that are contributing to the failure of the merger or acquisition. Perhaps, there is a lack of funding needed to help with conglomerization after the acquired company is included. Another factor could be the redundancy of the merger and acquisition all together. This could lead the company to reconsider the criteria it currently has before completing the merger or acquisition.

The financial department of each company should perform a similar analysis to the one conducted in this research paper to rule out what factors are contributing to the success or failure of their mergers and acquisitions. It is worth exploring the failures that have occurred in the past to determine with frequency is really the issue here. Completing said analysis could save the company millions of dollars and help allocate its resources to increase returns in the future instead of minimizing them.

## Chapter 5

### Hypothesis

These analyses support the notion that there is no optimal M&A strategy for these market sectors. Each company has its own internal and external factors that make an investment decision viable or not, but the overarching notion that frequent M&A is good for overall market capitalization and stockholder value is not supported.

With the rising number of M&A's in the past decade, it has become evident that many companies in various other industries as well have been trying to grow larger through the use of mergers and acquisitions. However, there are other ways to bring the same positive results to all the stakeholders without spending so much money on a decision that proves to be of questionable value.

There are ramifications due to the excessive investment in M&A's. First of all, companies spend millions of dollars in order to acquire or merge with other companies. This can have a negative effect on these companies' bottom line. The costs include, but are not limited to, the cash spent on acquiring or merging with the other company, legal fees to ensure the completion of the transaction, and cash spent to make a smooth transition over to the parent a company. Many companies take financials into account before initiating a merger or an acquisition, however, they fail to consider the money that will be spent after the transition is done. The costs can be associated with training staff, salaries and wages of new employees, and provision of resources to the new company, such as office space and operational funding.

Considering that many of the M&A's in the wireless and Internet sectors are driven by the need to acquire technology, other methods can be utilized to achieve the same end result. One method would be hiring new employees that are capable of building the technology in-house.



Another method could be buying patents to own the technology instead of buying a whole company all-together. An alternative method could also be outsourcing the R&D function to technology companies in the United States or abroad. By utilizing these methods, many companies can save costs and achieve similar results.

## Chapter 6

### Future Research Areas

This research paper only focuses on the investment strategies of these companies and explores whether one strategy (frequent M&A) is better than the other (less-than-average M&A) in bolstering market capitalization. Future research is needed to explore other factors that determine why a company would merge or acquire another company. These factors could include the state of the market at the time, the revenue that each company brings in, or what factors make a company more or less attractive to acquire or merge with.

There may also be more statistically powerful ways to categorize companies and perform similar analyses. The median split method was able to aid the analysis here, however, we cannot rule out that it was not precise enough to capture the success of M&A 'strategies overall.

There is, however, limited research on how relative frequency of M&A's affects the financial performance of companies over time. It is an area worth exploring because there appear to be very mixed results when it comes to looking at the M&A data of market leading companies across two market sub-sectors. Including additional companies across other industries could prove to be illuminating.

In terms of the correlation and regression done in this research paper, there were only a few factors that were taking into consideration. Adding more variables would help in getting more accurate results. For instance, the size of each company was not accounted for. This could have an effect on market capitalization as larger companies are perceived better by investors. In the case of the telecommunications sector, AT&T and Verizon's market shares are much larger than Sprint and T-Mobile's market shares. Another variable could be the number of years the company has been operating for. This research was limited to ten years of analysis no matter

how old the company was. Additionally, the amount of money spent on each merger and acquisition were not taken into consideration. Some investments are smaller than others, thus the losses attributed to a failure would be different. Factoring those in could have an effect on market capitalization.

Running a regression against the S&P 500 to find alpha then plugging that number in the CAPM model and including other variables could be one method to make a more accurate analysis. The CAPM model is also used to assess returns on assets, such as stocks. It includes systematic risk and calculates the expected return on assets, which is a helpful measure for investors.

As M&A's continue to be on the rise, it is worth exploring the effect that this trend has on different sectors. Since technology firms continue to be the target of most M&A's, it is also worth exploring the effect of this high demand on the technology sector. There are many factors that drive in M&A's. There is plenty of qualitative research on the effects of M&A's on the acquired and acquiring company. However, there is limited qualitative research on the effect of M&A's, especially when it comes to stock valuation and market capitalization.

## Chapter 7

### Conclusion

Shareholders will continue demanding fast-paced growth. The objective of this paper is to highlight that each company should follow its own investment strategy, and that the dominant narrative that frequent M&A's are "good for business" does not appear to hold. This exploratory analysis lends credence to the Faustian bargain that M&A's hold for dominant players. As Par and Jang summarize, "merger and acquisition (M&A) has been viewed as an efficient strategy for firm growth because M&As allow firms to quickly achieve their ideal size. However, whether consistent growth can be maintained after an M&A is questionable because post-M&A integration is a difficult process." (Park, & Jang, 2011)

Further research is needed to investigate whether the onus placed on companies for constant growth via M&A's is actually a failing strategy. The research done in this paper is only the first step to analyze a dominant strategy that could be harming the financial stability of many companies in the long run.

In conclusion, it is important for executives to account for the short and long term affects of this strategy on the performance of their companies. Looking at market capitalization and stock returns is one way to do it, but there are other non-quantitative issues that should be taken into consideration, such as company "culture clashes" that could be detrimental for the survival of the company. The research done in this paper proves, from one angle, that following industry trends is important, but it should be executed carefully and customized to fit the company's needs.

The research done in this paper highlights that there is a trend across many sectors that is not beneficial for many companies. There is no correlation between M&A's and market

capitalization. Despite that, many companies continue to follow this strategy to bring higher value to shareholders. The regression showed that M&A activity has a very small effect on market capitalization, and that alludes to the fact that engaging in a high number of M&A's is not a flawless strategy.

Although the research done here is not perfect, it highlights a few issues in the trending investment strategy. It is a start to a new area of research that is worth exploring in the future because it can have a large effect on the market. This paper also studied the current state of the market in two sectors (telecommunications and technology) and provided some research on the predicted state of the markets. As these markets become more competitive in the future, it is important to study the current behavior of companies in these markets and provide some advice on how they should move forward.

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## Academic Vita of Leen Obeidat

### EDUCATION

- **The Pennsylvania State University**
  - Schreyer Honors College*
  - Smeal College of Business*
  - Donald P. Bellisario College of Communications*
  - Bachelor of Science in Finance
  - Bachelor of Arts in Telecommunications

**University Park, PA**  
 Graduation: May 2018  
 Dean's List 7/7 Semesters

### EXPERIENCE

#### **The Daily Collegian**

##### *Business Manager*

*January 2015-Present*

*State College, PA*

- Managing a total staff of 88 employees across 5 departments: Creative Design, Promotions, Sales, Business Operations and Audience Engagement.
- Responsibilities including financial analysis, goal setting, product management and staffing across all departments in support of The Collegian's strategic objectives of increased online membership and long-term financial stability
- Assessing current financial and operational performance and transitioning The Daily Collegian to become a digital first, multimedia news organization
- Launching the Collegian Digital, which offers digital marketing, such as SEO, SEM, key word search engine advertising, etc.
- Creating a five-year plan to introduce augmented reality news and advertising for the first time in the newspaper industry
- Controlling a million-dollar revenue, creating budgets for each department and keeping business activities within budget

##### *Sales Manager*

- Managing relationships with major clients and ensuring that their advertising needs are met
- Managing a team of 20 account executives and monitoring their performance
- Hiring and training account executives to become well-rounded salesmen in all aspects of print and media selling
- Solving tactical and strategic problems and dealing with client disputes to ensure premium customer service

##### *Account Executive*

- Creating advertising plans that assist clients in solving their marketing and promotional issues
- Analyzing client's budgets and devising plans to fit them
- Checking and reporting on advertising campaign's progress and devising ways to ensure success
- Prospecting and cold-calling clients to expand our customer base

##### **West Arête**

*June 2017-August 2017*

*State College, PA*

##### *Marketing and Telecommunications Intern*

- Creating, for the first time, a CRM database of over 1,200 potential sales leads to facilitate a new product introduction
- Defining key customer metrics and data points to better target marketing efforts
- Leading data analysis of the competitive landscape and CRM database to identify key industry trends, opportunities and threats.
- Assisting in the generation of online web content, design and copy for the launch of a new product

- Benchmarking industry competitors to facilitate in the sales go-to-market strategy

**Procter & Gamble – Abu Dawood**

*May 2016-June 2016*

***Commercial Innovation Intern***

*Jeddah, KSA*

- Performing consumer research on Saudi Arabian population to assist in marketing P&G products
- Analyzing research results and statistics for P&G to better target their customers
- Studying shopper behavior and working on marketing campaigns for various fast-moving consumer goods
- Performing data analytics and presenting results for P&G Marketing and Commercial Innovation managers

**Construction and Investment Company - Taher Group (CICTG)**

*July 2014-August 2014*

***Summer Intern***

*Jeddah, KSA*

- Shadowing of all the department managers in a rotational program to learn about different investment strategies
- Applying excel knowledge in creating financial statements for various product and service lines
- Creating financial documents, such as Balance Sheets and Income Statements, to help the financial department's manager make key decisions about the future of some products