

Sources and uses of financing in the U.S. Telecom industry

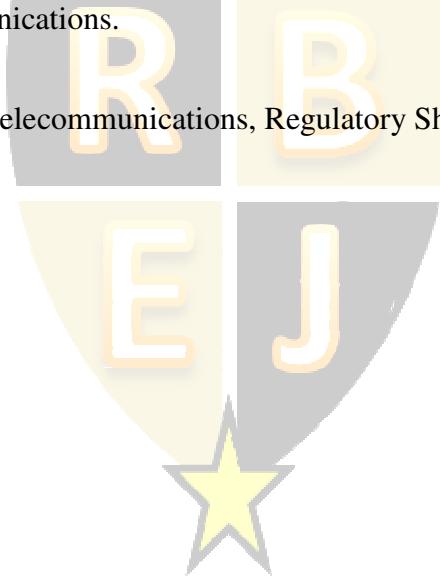
Dave Van Dorselaer
Sam Houston State University

Jonathan P. Breazeale
Sam Houston State University

Abstract

The purpose of the paper is to analyze the sources and uses of financing during the recent rapid expansion of the telecommunications industry. Expansion of the industry has substantial - especially in the wireless sector. We document that this expansion has been accompanied by a reduction in long-term debt financing and argue that two large regulatory shocks also contributed to the capital structure change. In addition to affecting financing, the 1984 divestiture of AT&T and the Telecommunications Act of 1996 both actually served as entry deterrents rather than foster competition as regulators had (at least publicly) intended. The result is a current duopoly of AT&T and Verizon Communications.

Keywords: Capital Structure, Telecommunications, Regulatory Shocks



INTRODUCTION

The purpose of the paper is to analyze the sources and uses of financing during the recent rapid expansion of the telecommunications industry. Those findings are then compared to two major historical shocks in the market - the divestiture of AT&T in 1984 and the Telecommunications Act of 1996. Capital structure changes resulting from those shocks are then examined to determine if entry deterrents or entry opportunities were created for competitors. The paper concludes with an analysis of the current duopoly nature of today's domestic telecom industry and the impacts the companies have on entry.

TELECOM INDUSTRY LANDSCAPE

"[The] global communication industry covers communication services, equipment and products. The communications equipment market, including LANs, WANs, routers, telephones, switchboards and exchanges, has been valued based on end-user spending on telecommunication equipment except in the case of networking equipment where manufacturers selling price is used (Datamonitor, AT&T, 2010)."

There are two primary types of telecommunication companies. ILECs (Incumbent Local Exchange Carriers) and CLECs (Competitive Local Exchange Carriers) represent the majority of the telecommunication companies competing in today's market. ILECs are incumbent companies like AT&T and Verizon that have an obligation to serve the specified market with certain services. For example, AT&T has a 22 state region that it is required to serve for basic land line services such as local phone service (AT&T Annual Report, p. 30, 2009). If the ILECs were not required by law to serve the specified area, they would be able to invest or disinvest their infrastructure quickly when market conditions change. These irreversible capital costs, which impact much of this industry, can often grow in a way that is not consistent with consumer demands. The wireless business, however, is not subject to ILEC regulation. Wireless companies are not required to offer services where another entity of the same company is required to place wireline infrastructure in place to serve the region. Therefore, many of today's telecom companies have dual purposes. They have an obligation to serve certain customers with little competition and a much wider customer base where competition is fierce (Cincinnati Bell Annual Report, p. 117, 2009).

Competition

Telecom companies have many competitors given their diverse product portfolio. Regional, Domestic and Global competitors exist. Domestic competitors are companies that generally have a very similar product sets across multiple market segments. For example, AT&T, Verizon and Sprint all offer domestic wireless service to both consumers and businesses. Within the United States, the primary competitors are AT&T, Sprint Nextel and Verizon Communications. Globally, telecom companies generally compete with companies like IBM and HP to service the Fortune 500. The focus of this paper is telecommunications companies that primarily operate in the United States (AT&T Annual Report, p. 46, 2009).

The two largest telecom companies in the United States are AT&T and Verizon Communications Inc. Verizon is based out of New York, NY, and has 217,000 employees. Verizon and AT&T compete primarily in the following areas: Enterprise Businesses, Mobility, Consumer and Government. The two compete within the U.S. market, but Verizon does have

some global partnerships with Vodafone for global mobility. Verizon has the nation's largest mobility subscriber base with over 80 million subscribers. They are AT&T's largest competitor in the Enterprise Business markets and services 98% of the Fortune 500 base (Datamonitor, Verizon, 2010).

AT&T is headquartered in Dallas, TX, and has over \$120 billion dollars in revenue and over 275,000 employees. Since November 1, 1999, AT&T has been included as one of the thirty stocks that comprise the Dow Jones Industrial Average due to the company's size and impact on the market. The company's primary markets are mobility and fixed wireline telecommunication services. The company is currently the exclusive cellular provider for the Apple iPhone and has received a lot of press, both positive and negative as a result of this partnership. This partnership is discussed in more detail later in the paper. From a fixed wireline perspective, AT&T provides local, long distance and TV services under its "U-verse" product to homes and is available within AT&T's twenty-two state footprint. The company operates in three main customer segments: consumer, small business and enterprise (Datamonitor, AT&T, 2010).

Sprint Nextel Corporation primarily competes on wireless services within the U.S. for consumer and enterprise customers. In 2008 and 2009, Sprint has lost market share to both Verizon and AT&T. Sprint is headquartered in Kansas and has approximately 56,000 employees. Sprint lost \$2 billion dollars in 2008 and continues to mount losses as they work to restructure their organization and business model. Sprint has recently invested exclusively on wireless. Sprint believes that mobility is the key to the future of its business. (Datamonitor, Sprint, 2010).

Qwest, Cincinnati Bell and Level 3 are smaller regional competitors in the United States. Their reach tends to be in areas where they have the capital to expand. Level 3 is a CLEC and is able to choose its market in a more strategic way than the ILECs. The barriers to entry that these smaller competitors face are discussed below - as is their strategic decision on how to spend their capital to enter and compete in specific lines of business (Level 3 Annual Report, p. 48, 2009).

Shocks in the Telecom Market

In 1934, the Federal Communications Commission (FCC) was formed to regulate interstate and international telecommunications, radio and television. The largest and most historic regulatory break up in the telecom industry occurred in 1984 when the Department of Justice reached an agreement with AT&T to divest its local phone infrastructure and operating companies. The legislation ultimately led to the formation of regional bell operating companies. In 1996, Bill Clinton signed the Telecommunications Act of 1996 which eased some of the regulatory burden on the telecom companies, allowing the regional bell operating companies to further consolidate. This consolidation led to many mergers and acquisitions during the late 1990s for both AT&T and Verizon Communications. The 1984 ruling by the Department of Justice and the 1996 Telecommunications Act are the two largest pieces of regulation analyzed in this paper Verizon Annual Report, p. 38, 2009.

Economic Impact

When consumers lose their jobs or look to save money, they often look first to communication services where they reduce costs. In today's mobile world, wireline voice and local services are typically cancelled first when folks start tightening their belts. During the last two years, AT&T, Verizon and Sprint have publicly released the details and impact of the economic pressure on its business. In the first quarter of 2008, AT&T and Verizon lost 2.08

million wired access lines for the quarter (Wilson, 2008). While consumers continue to put pressure on Telecoms' business during tough economic times, it is imperative that the telecom companies continue to build on their large capital investments. The telecom industry is expected, by some, to grow at about 10% over the next five years. According to a report from Boonton, N.J.-based market research firm Insight Research Corp, the global telecom industry is expected to reach \$2.7 trillion by 2013 (Dicker, 2009). According to ABI research, Mobile capital expenditures exceeded \$131 billion last year and will grow to \$163.5 billion a year by 2013 (Beckman, 2008).

Technological Changes

As cellular networks have developed to match the computing power and throughput of smart phones, consumers are able to utilize fast download times for social media, email and complex processing applications. Customers expect anywhere access to their key applications such as email, mobile banking, social networking and cellular voice. As network speeds increase over the next 18 months to LTE (Long Term Evolution) which will provide significant increases in download speeds, the opportunities for growth are substantial. There are high capital costs to deliver such innovation and changes in technology. Purchasing software licenses, putting up cell sites and new construction of wired networks make up the majority of the capital spending for large telecoms today. During the last three years, AT&T has invested more than \$55 billion which is more than any U.S. competitor (AT&T Annual Report, 2009, p. 9). Verizon, the second largest telecom company in the U.S. has spent more than \$51 billion in capital to increase network capacity over the last three years (Verizon Annual Report, 2009, p. 7).

Financial Analysis of the Industry

AT&T's stock price has done very well over the past five years and has outperformed the S&P 500 Index and the S&P 500 Integrated Telecom Index. As an example, \$100 invested in 2004 with AT&T would be worth \$140 in December of 2009 while the S&P 500 Integrated Telecom Index would have been worth \$135 dollars. That same \$100 invested in 2004 would be worth \$102 if it had been invested in the S&P 500 Index. If you compare AT&T's stock performance to that of its competition over the past 5 years, AT&T beats its competition and provides a better return than the S&P 500 (AT&T Annual Report, 2009).

Verizon is AT&T's toughest U.S. based competitor. As the industry has further consolidated, Verizon continues to lead the wireless subscriber base in the United States. Using the same comparison as above, a \$100 investment in 2004 would have netted the stockholder \$108.9 in 2009. Verizon still beats the S&P 500 by \$7 over the five year period. Verizon, however, does not beat the S&P Telecom Services Index over the same five year period. Verizon's earnings per share dropped from \$2.18 in 2004 to \$1.29 in 2009. Verizon was experiencing consistent growth from 2006 to 2008 but was also hit hard by the 2009 economic downturn (Verizon Communications Annual Report, 2009).

Behind Verizon, Sprint is probably the next largest competitor in the consumer mobility and enterprise business segments. Sprint has been hit very hard over the past five years with customers fleeing to AT&T and Verizon based on enhanced features and product sets, improved customer service and better pricing plans. Sprint is the nation's third largest wireless carrier and in the first quarter of 2010, lost 578,000 monthly bill paying customers under contract. This is less than expected and below the 1.25 million customers Sprint lost a year ago in the same

quarter (Investor's Business Daily, 2010). From an investment perspective, \$100 invested in 2004 with Sprint would be worth \$16.37 in December of 2009. The company has been badly beaten in the market and has been operating with a net loss for each of the past three years (Sprint Nextel Annual Report, 2009).

Industry Trends

Wireless companies have been growing since the mid to late 1990s. Many traditional wireline companies like AT&T and Verizon (then GTE) had interests in fixed wireless carriers. Some of the companies made it and some of them did not. McCaw Cellular was one of the founders of the wireless industry in the 1980s.

One of the key trends within the telecommunications industry is the migration of enterprise and consumer services from traditional wireline services to wireless, mobile solutions. As previously mentioned, the wireless network speeds are increasing which is providing customers options for their business and personal locations. Historically, each site would need local phone, long distance, internet and wide area network connectivity to connect to key corporate applications. With the evolution of the Smartphone, customers have a choice in how they connect and the required experience for each application. This key trend is driving revenue out of the wireline business and increasing the wireless business. Looking back to 2003, the United States had 180 million cellular subscribers versus 149 million switched-access lines (Stuck & Weingarten, 2008).

Capital Spending

Telecommunication companies need to allocate capital in the following areas: Copper Wires, Coaxial Cable, Fibre Optics, 3G Connectivity, Wi-Fi and WiMax (Stuck & Weingarten, 2008). Wireline telecom costs are relatively high and fixed with relatively low variable costs. Once the infrastructure is established, the company can begin to sell to the various customers in the area. The capital expenditures of the traditional telephone services (switched access line) which are served over copper wire is \$1,050 in capital costs per subscriber (Stuck & Weingarten, 2008).

Wireless telecom costs are relatively variable with low fixed costs. As the number of wireless subscribers increases, the variable expenses for building out the infrastructure grow accordingly. The costs are relatively variable because you are removing the high cost of wires and replacing them with transmitters only where the customer has service. The wireless plant per subscriber was \$250 for wireless versus the \$1,050 for traditional copper lines in 2003 (Stuck & Weingarten, 2008). "When the long-run average network cost declines as average revenue per user (ARPU) increases, the mobile operator experiences economies of scale (Teral, 2009)." A key trend in the market today is for the major wireless networks carriers to offload excess traffic to their wireline network. This recent technological development has allowed the telecoms to meet the expanding needs of wireless customers in a competitive way. Since telecom companies face a very complicated and diverse customer base, the industry requires a wide range of capital spending to provide the depth and breadth of services that are required to remain competitive. The diverse products require a complicated capital structure that are examined in this paper.

ANALYSIS OF CAPITAL STRUCTURE

The 1970s

From a market perspective, the 1970s was not a time that witnessed the technological advancement that was observed in the 1990s. Regulation was probably the most significant event for telecoms in the 1970s. In 1970, Richard Nixon created the Office of Telecommunications Policy which many believe was created to loosen AT&T's strong hold on the market (Office of Telecommunications Policy, 2010). In 1974, the Department of Justice filed suit against AT&T which began the ultimate breakup of AT&T in 1984 (Webb & Associates Web Site, 2009).

It is however important to analyze the capital structure of telecom firms during the 1970s in order to accurately analyze the 1984 dismantling of AT&T. Generally speaking, the capital structure mix of telecom firms in the 1970s was relatively consistent. When analyzing the average, median, max and min during the decade, there were no significant spikes or declines in the telecom company's capital mix (See Table 1 [Appendix]).

AT&T averaged 48% of its capital structure as Common Stock during the 1970s. Their competition was more heavily focused on long-term and short-term debt. GTE, UT, CTC, CTU and MID averaged just 31% of its capital structure as common stock during the 1970s (Chrast, 1980). The 1970s was pre-divestiture so AT&T's capital structure decision was made during a "monopolistic" type environment. With a much reduced role in the market, one would expect the competition's capital structure decision to be different.

AT&T's competitors utilized more debt, both long term and short term, as part of their capital structure during the 1970s. AT&T's competitors followed the characteristics of a Debt First, Equity Last model during the 1970s. AT&T's competition in the 1970s also seemed to follow the pecking order theory which states that firms look to internal financing first, then debt and as a last resort utilize equity. AT&T's competition in the 1970s averaged 63% of its capital structure as short term and long term debt. The average AT&T competitor reported 51% of fund sources as long-term debt (Chrast, 1980).

It is surprising that the competition's debt was as high as it was during the 1970s. The use of common stock was lower than that of AT&T's and AT&T was the monopolist in this market. You could argue that the competition was leveraging itself in order to create barriers to entry in the market but that was supposed to be AT&T's job during that time. It is more likely that the competition kept a higher debt level because of the MM Proposition I. MM Proposition I is a theory that was created by Franco Modigliani and Merton Miller in 1958. This is the debt irrelevance proposition which states that under ideal conditions, the shareholder should not be concerned with the overall debt used by the firm (Brealey, Myers & Marcus 2007, p. 400). M&M argued that utilizing debt as part of the company's capital structure does not impact either the operating risk or the business risk of the firm (Brealey, Myers & Marcus 2007, p. 401). Based on the historic quotes of the 10 year Treasury bond, utilizing debt during the 1970s appears to have been a good capital strategy by AT&T's competitors at the time. That being said, the late 1970s was a period of great economic uncertainty and the Treasury Bond 10 year yield increased 2 1/4 point during later in the decade (Yahoo Finance, 2010).

The Mid-1980s

MCI was the first company to contest AT&T's monopoly stronghold in the 1970s and 1980s. MCI was originally created as a microwave technology company in the 1960s that ultimately merged with WorldCom in 1998. MCI WorldCom is probably most noted for their collapse in the early 2000s and Bernie Ebbers' fraud trial and ultimate conviction. MCI won the battle that they had pushed so hard for during the 1970s which was to encourage the Justice Department's fight against AT&T. While the Justice Department ultimately intervened, it came at a price for the competition in the market. AT&T responded to the regulation by dropping rates dramatically which put extreme pressure on companies like MCI. MCI's stock collapsed in 1985 from \$20 per share to \$7 per share because the pricing pressures applied by AT&T. MCI's aggressive political efforts led them to the number 2 carrier status in the United States yet they recorded a net loss in 1986 of \$448 million dollars (Funding Universe, 2010). The company significantly increased its long term debt in 1986 in effort to help ensure they could meet their capital expenditure plan for the year of \$800 Million (MCI Annual Report, 1986, p. 4). Since MCI was extremely financially leveraged during 1985, they bought back \$15M in common stock in effort to show that the company believed in its future (MCI Annual Report, 1986, p.4). "As companies financial leverage increase, the concerns around the company and its future increases at a proportionate rate" (Brealey, Myers & Marcus 2007, p. 401).

After the breakup of AT&T in 1984, AT&T's capital structure changed pretty dramatically. The 1984 bust-up of AT&T was a major shock to the telecom market and AT&T continued to increase the utilization of both short-term and long-term debt as part of their overall capital structure. AT&T's primary business - post break-up - was in the Long Distance Voice business which was relatively secure and still remained a high margin business for AT&T. AT&T lowered its overall use of the common stock during 1985 and 1986, the years immediately following the break up in 1984, to just 27% and 29% respectively (AT&T Annual Report, p.20, 1986). This represented a significant drop in common stock given the 1970s levels of a fairly consistent 48%, on average. There were relatively few new entrants to the market at this time and the use of common stock or new IPOs were lower than earlier periods. AT&T's pre- break-up capital structure does seem consistent with utilizing more debt, both short-term and long-term during a time when they wanted to continue to increase the barriers to entry (AT&T Annual Report, p. 21, 1986). AT&T's stock fared well post-divestiture which still made it a good source of capital for AT&T during the 1980s. AT&T's stock performance demonstrated that their debt levels at the time were not at all a concern for investors (Yahoo Finance, 2010).

1996

The Telecommunications Act of 1996 removed many of the barriers to growth established by the 1970s regulation and break-up of AT&T in the mid-1980s. The Act removed much of the regulation that had previously prevented the Regional Bell Operating Companies (RBOCs) from consolidating. "The 1996 Act provided for three avenues of entry into what was viewed as the local market: facility based entry, the use of ILEC UNEs, and resale of ILEC retail services (Bernstein, 2007)." A UNE relationship occurs when the ILEC is able to resell the local services to companies like AT&T who were without local infrastructure post divestiture.

In 1995, the three major players were AT&T, Verizon and Sprint/Nextel. Post 1996, firms began to look to enter the market. Since many of the regulatory barriers were removed and the beginning of the internet boom began shortly thereafter, firms looked to the telecom industry

as an area for growth. As you can see in Figure 1 (Appendix), the number of telecom firms increased drastically post 1996 Telecommunications Act until the early 2000s (Leach, Moyen & Yang 2004). This growth of new firms resulted in the most drastic change in capital structure that telecom firms have seen in the last twenty years.

Capital structure is challenging to analyze during the mid-1990s since there were so many new entrants. Additionally, the mid to late 1990s was a period of time of a historic number of IPOs. First day returns for IPOs during the period 1996-2000 was 11.97%. If the IPO was in support of an internet based company, the first day return averaged 90.28% during the same period (Ghosh, 2007). Throughout the first year of IPOs in the internet segment, the average return in the first year was 21.47%. “Initial Public Offerings (IPOs) were the most prevalent form of security issues by firms wanting to raise capital in the United States during 1990-2000” (Ghosh, 2007).

Throughout the 1980s, 1990s and 2000s, AT&T and Verizon (GTE) have the most historical capital structure data to analyze of any of the telecom market during the last 30 years. In 1995, AT&T and Verizon utilized 35% and 30% common stock respectively while continuing to focus on debt as their primary source of capital. Sprint/Nextel continued to have a high level of funding provided by common stock with 69% in 1995. In 1996, Level 3 and Qwest had 100% of their capital structure funded by Common Stock. For details, see Table 3 (Appendix).

The trade-off theory is probably the most applicable capital structure theory to describe the capital structure for telecom firms during the mid-1990s. The theory primarily focuses on determining the right debt ratios for companies. Generally speaking, companies with an established business and taxable income can use the income tax shield, which increases the debt ratios. Companies that are relatively new to market, like many of the new internet based companies, rely heavily on equity financing (Brealey, Myers & Marcus, 2007, p.414). The trade-off theory explains the challenging mix of capital structure in the mid-1990s. There were established companies like AT&T and Verizon who followed more of the utility model, whose assets were both safe and tangible. Those utility type telecom companies followed a higher debt model during the mid-1990s while the start ups were forced to gain financing from IPOs.

2000s

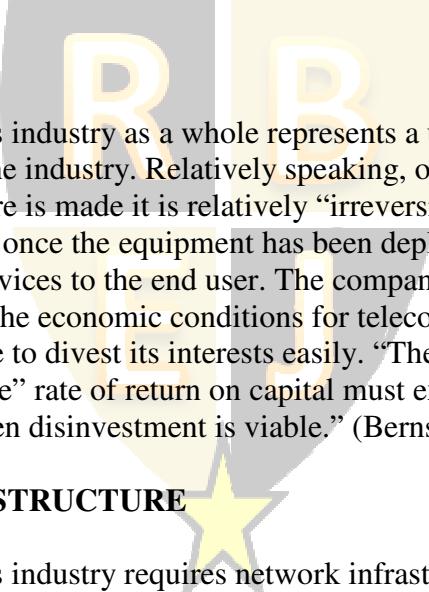
The competition today relies more heavily on common stock in its capital structure mix than the competition did in the 1970s. On average, AT&T’s competition uses common stock as 59% of their capital mix. In the 1970s AT&T’s competition utilized common stock for just 31% of its capital structure on average. The use of short-term debt has almost completely flipped between AT&T and its competition. Today, AT&T uses 15% short-term debt versus just 4% in the 1970s. The competition utilizes 10%, on average, today versus 12% in the 1970s. While AT&T has certainly changed its capital mix over the last twenty-five years, it has remained relatively consistent with its use of common stock. AT&T gets about 41% of its capital from Common Stock today and that remains relatively consistent from the 1970s, 1984 and 1985 and the 1990s. AT&T is historically a low growth stock with a strong dividend which makes this a good investment for many investors. AT&T once again makes up one of the companies that make up the Dow Jones Industrial Average. During the early 2000s, AT&T dropped off the Dow Jones list prior to the merger with SBC.

The Telecommunications Act of 1996 allowed for less regulation and more freedom for telecommunication companies to compete. Many of the telecom and internet based companies

that grew after the 1996 regulation and subsequent telecom boom, utilized more equity, then debt. Starting in the 2000s, only the strong survived and there began a steady decline in telecom based companies. Based on the “Pecking Order Scale,” it makes sense that telecommunication companies in the United States today have primarily moved to debt first, equity last in their capital structure (Brealey, Myers & Marcus, 2007, p. 415). Verizon is the largest exception in today’s market and they use debt for 59% of its capital structure. This makes sense when you consider the environment of telecommunication firms today. Once thought of as a major utility, telecommunication companies are competing hard for the ever-growing mobility business discussed earlier. The mobility market is growing quickly despite the challenging economic times in the past five years. The speed of delivering to customers is absolutely critical.

Customers expect to have service wherever they are and the communication companies are largely competing for this high revenue base. Today’s telecom leaders, AT&T and Verizon have considerable “financial slack” in their balance sheets and capital structure (Brealey, Myers & Marcus, 2007, p. 416). Given AT&T and Verizon’s retained earnings in the 2000s, creditors view the company’s debt as a safe investment. Both companies have easy access to both cash and debt which helps the companies keep competition at bay and meet the capacity needs of today’s customers.

BARRIERS TO ENTRY



The telecommunications industry as a whole represents a unique challenge for companies looking to serve and invest in the industry. Relatively speaking, once the investment in telecommunication infrastructure is made it is relatively “irreversible” (Bertstein, 2007). It is an irreversible investment because once the equipment has been deployed; it is very hard to stop the roll out and the extension of services to the end user. The company would have to incur a lot of costs to stop the investment. If the economic conditions for telecommunication companies worsen, the company is not able to divest its interests easily. “Therefore, as a consequence of the inability to disinvest, the “hurdle” rate of return on capital must exceed the opportunity cost pertaining to circumstances when disinvestment is viable.” (Bernstein, 2007).

DUOPOLY AND CAPITAL STRUCTURE



The telecommunications industry requires network infrastructure to be rolled out to the users in order to connect to the services offered. To finance their infrastructure, the telecom industry borrows a lot of money. Their debt also serves to prevent entry into the market. In 2005, Leach, Moyen and Yang argued that telecommunication firms have been increasing their leverage since the Telecommunications Act of 1996 (Leach, Moyen & Yang, 2008). Telecoms have borrowed \$1.5 trillion from banks and issued more than \$600 billion of Bonds since 1996 (Tarzijan, 2007). Companies like AT&T, Sprint and Verizon recognize that debt levels affect entry decisions by potential competitors. “While debt may give a strategic advantage, incumbents at this stage must consider that debt reduces the monopoly profits by motivating a production larger than the unrestricted optimum. (Tarzijan, 2007)” Generally speaking, a new entrant makes more money when they are competing with an unleveraged incumbent.

McAndrews and Nakamura stated that when firms face a threat of entry from a competitor, higher debt levels utilized by the incumbents actually hurt competition and future capacity or throughput (McAndrews & Nakamura, 1992). Firms make their debt decisions as part of their overall capital structure decision and this is done at the same time as they analyze

the debt and capital structure of their competitors (McAndrews & Nakamura, 1992). We have previously discussed the fixed versus variable costs in the telecom industry. Generally, the telecom industry has very high fixed costs. When the incumbent issues debt, the new entrants have a hard time making a profit while making the debt payments (McAndrews & Nakamura, 1992). Given this fact, new entrants tend to pick their entry points into the telecom market carefully or choose not to enter at all. "If the incumbent issues debt and the entrant enters, then we have the duopoly output market case" (McAndrews & Nakamura, 1992).

After researching capital structure changes in the telecom industry over the last 25 years, it seems no wonder that there are only two companies that have made it through all of the ups and downs. Verizon, like AT&T, grew through acquisitions in the 1990s and 2000s. Verizon has many legacy companies and GTE is one of the companies that were analyzed in the 1970s. Both have weathered the various regulation and deregulations, mergers and acquisitions, booms and busts. It becomes a challenge to compare two giant telecom companies to the rest of the industry and derive any real value. Verizon and AT&T own the wireless network business within the U.S. With the growth of the wireless network seen today and with the cost per subscriber almost 25% of that of a Wireline subscriber, Verizon and AT&T essentially operate a duopoly in the telecom industry. As one analyzes the capital structure of the telecom companies, no two major competitors could join forces and come anywhere close to that of AT&T and Verizon. They very effectively use debt as a barrier to entry. The competition can ultimately choose which market it enters based on the available debt level information of the incumbents. Given the hold that Verizon and AT&T have on the mobility market, firms check debt levels and enter the market where the competition is not as fierce and their capital investment can be rewarded with new and repeat customers (Tarzijan, 2007). That is why Qwest, for example, has not allocated any money to mobility in the past 3 years. While this duopoly exists, the firms continue to improve their financial status while building a bigger arsenal against any future entrants.

In the appendix, we report the capital structure for major telecom firms in the United States. Both AT&T and Verizon are now able to fund 100% of their capital spending out of retained earnings while maintaining a good investment, with a strong dividend. Based on Verizon and AT&T's capital structure and current market forces, they will remain the strongest telecom in the United States for the foreseeable future. It will require government intervention or an unforeseen major shock in the market or significant technology change to change the capital structure of the current incumbents. The current competition is not able to raise enough money to come anywhere close to AT&T, and they continue to lose money. Lambrecht stated in his 1999 paper that firms can fail due to poor management, competition and the firm's key financial decisions (Lambrecht, 2001). AT&T and Verizon are unlikely to fail in this current market. The major competitors to AT&T and Verizon are likely to fail in the endeavors based on their current operating losses and inability to raise the substantial capital needed to support the price per subscriber today.

CONCLUSION

While the capital structures for telecom companies have changed over the past twenty-five to thirty years, Verizon and AT&T are the two companies who have stood the test of time. Entrants have come and gone and both responded well to the various market shocks over that period of time. The largest change in capital structure came during the late 1990s after the Telecommunications Act of 1996. IPOs became the largest source of financing for new entrants

into the telecom industry and firms were quite successful for a period of time leading up to the early 2000s.

Since the telecom industry is so capital intensive and the mobility network growth is so significant, the current duopoly telecom market makes new entry into the domestic U.S. telecom market virtually impossible. Companies like AT&T and Verizon have been created out of a series of acquisitions and mergers over the past twenty years. Today's telecom growth is driven from the mobility business. This type of customer has approximately 75% less cost per subscriber capital investment than the traditional wireline products that made telecoms so successful in the 1970s to 1990s. This is good for the companies but also means that they need to have ready access to the capital markets to meet the needs of today's customers. Based on the "financial slack" that both Verizon and AT&T have in their balance sheets and capital structure, they have ready access to the capital markets that serve these margin rich customers.

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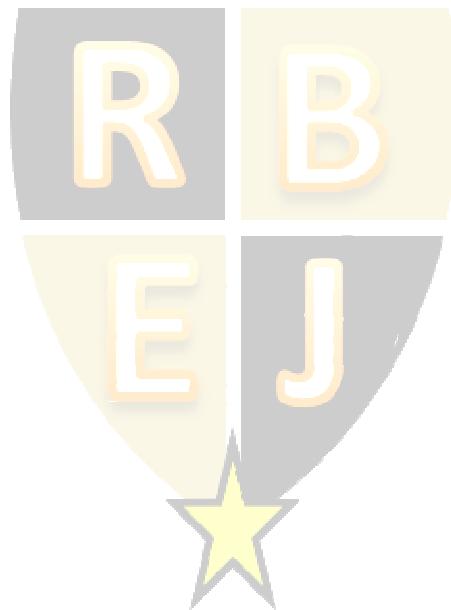
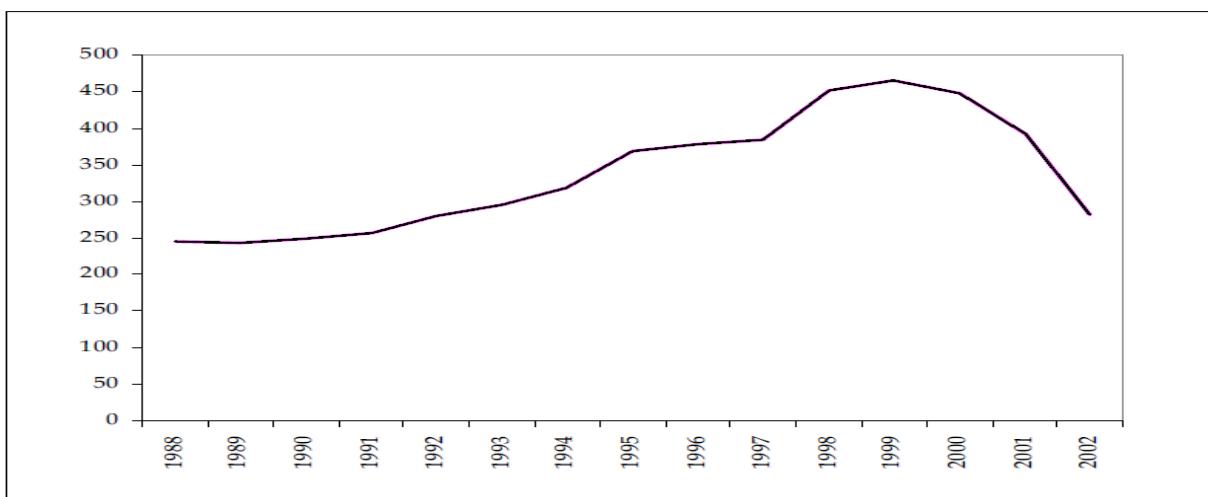


Figure 1. Number of Telecom Firms (1998-2002)

Leach, Moyen, Yang, 2004

Figure 1 Number of Telecom Firms



Source: Leach, Moyen & Yang (2004)

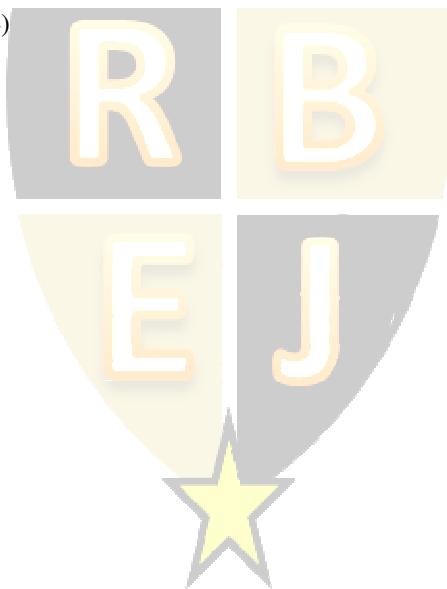


Table 1. Telecom Common Size Balance Sheets of the 1970s

	1971	1972	1973	1974	1975	1976	1977	1978	1979	Average
AT&T										
ST Debt	3.2	3.4	2.9	4.3	3.7	4.1	5.1	5.7	6.0	4.3
LT Debt	42.4	44.0	44.7	45.5	46.1	44.8	42.1	41.4	41.2	43.6
Preferred Stock	2.7	3.6	5.0	4.6	4.4	3.9	2.9	2.5	2.2	3.5
Common Stock	51.7	49.0	47.4	45.6	45.8	47.2	49.9	50.4	50.6	48.6
Total GTE, UT, CTC, CTU, MID										
ST Debt	12.9	11.9	12.3	13.9	12.0	10.2	9.9	11.1	13.0	11.9
LT Debt	52.9	53.2	51.9	50.9	51.6	51.3	49.6	48.0	46.9	50.7
Preferred Stock	4.1	4.9	6.6	6.6	7.5	8.3	8.1	7.5	7.3	6.8
Common Stock	30.1	30.0	29.2	28.7	28.9	30.2	32.4	33.4	32.8	30.6

Source: Bernstein Research

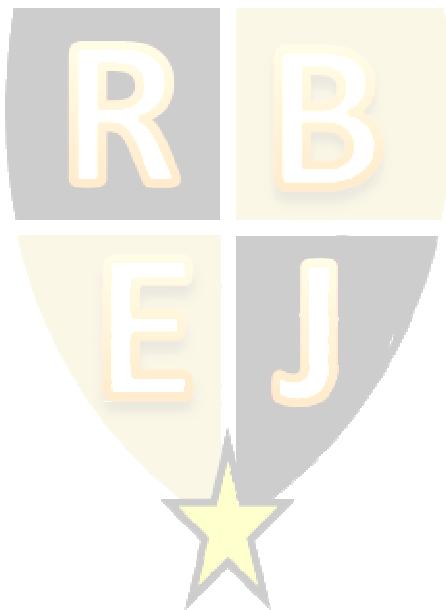


Table 2. Telecom Common Size Balance Sheets - AT&T Break Up of 1984

	1985	1986
AT&T		
ST Debt	32	34
LT Debt	22	22
Preferred Stock	4	3
Common Stock	27	29
Retained Earnings	14	12
MCI		
ST Debt	30	22
LT Debt	39	53
Preferred Stock	0	0
Common Stock	19	24
Retained Earnings	12	1

Source: Annual Reports

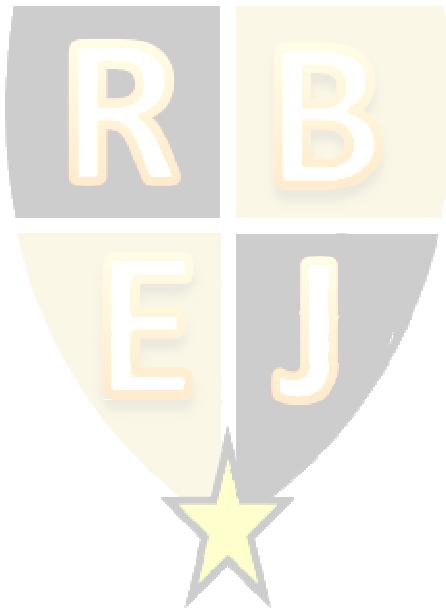


Table 3. Telecom Common Size Balance Sheets - Telecommunications Act of 1996

	1995	1996	2000	2009
AT&T				
ST Debt	48	37	27	15
LT Debt	17	18	18	27
Common Stock	35	39	52	41
Retained Earnings	0	7	4	16
Verizon				
ST Debt	28	29	29	20
LT Debt	33	30	37	39
Common Stock	30	30	21	28
Retained Earnings	9	12	13	12
Sprint				
ST Debt	0	0	10	8
LT Debt	31	43	51	25
Preferred Stock	0	0	7	0
Common Stock	69	57	31	66
Retained Earnings	0	0	0	0
Level 3				
ST Debt	0	11	8	
LT Debt	0	40	31	
Common Stock	100	50	61	
Retained Earnings	0	0	0	
Qwest				
ST Debt	0	15	9	
LT Debt	0	23	20	
Common Stock	100	62	71	
Retained Earnings	0	0	0	
Cincinnati Bell				
ST Debt		13	5	
LT Debt		44	28	
Common Stock		31	66	
Retained Earnings		0	0	

Source: Annual Reports