

Performance and Value Implications of Cross-Border Acquisitions In Telecommunications Industry

The Case of US Telecom Companies



C. Bülent Aybar, Ph.D

Southern New Hampshire University
School of Business

Ozgur Berk Kan, Ph.D

Western Connecticut State University
Ansell School of Business

Corresponding Author

C. Bülent Aybar, Ph.D
Southern New Hampshire University
School of Business
2500 N. River Rd. Manchester, NH 03106
Phone:603-644-3116 Fax :603-645-9737 e-mail: baybar@minerva.snhu.edu

Abstract:

This study analyzes the impact of cross-border acquisitions of US Telecom Operators on the shareholder value and firm performance. We analyzed the value implications of 33 acquisitions made by US Telecommunication companies in 18 countries located in North America, Europe, Latin America and Asia Pacific. While 15 of the target companies were domiciled in developed countries, 18 were located in Latin American and Asian emerging markets. Total value of acquisitions included in the sample was \$12.3bn with a mean transaction value of \$363.8m. Our small sample analyses revealed that cross-border acquisitions of US Telecom companies on the average did not create value for the shareholders. We also could not identify any significant performance improvements in the post acquisition period. An interesting result of our empirical analysis was the finding that acquisitions of targets in emerging markets generated higher cumulative abnormal returns than the targets in developed country markets.

Introduction

A combination of environmental forces ranging from technological innovations, deregulation, privatization and liberalization to a number of firm level drivers have dramatically shifted the dynamics of telecommunications industry and triggered rapid globalization. Economies of scale and strategic considerations prompted telecom service providers to aggressively pursue international opportunities in an increasingly open market that traditionally used to be reserved for national monopolies. Facing imminent challenges in this transient industry, US telecom companies developed a range of strategic responses from domestic and international alliances to expanding operations internationally, leveraging their existing capabilities and expertise. The objective of this paper is to evaluate the impact of cross-border expansion of US telecom service providers on the shareholder wealth during 1990s.

Telecom globalization has been driven by a set of environmental and institutional forces such as technological innovations, deregulation, privatization and liberalization (Sarkar, Cavusgil and Aulakh, 1999).

The telecommunications industry has been revolutionized by explosive introduction of new technologies and rapid evolution of institutional infrastructure in less than a decade. Technological innovations facilitated a range of new services including cellular, digital wireless and satellite telephony. Introduction of these services accelerated the changes brought on by earlier innovations such as digital exchanges, microwave communications and led to rapid convergence of computer and communication technologies. The emergence of fiber optic networks facilitated the convergence among voice, data and video as well as introduction of other innovative services and led to formation of unimaginable capacity and created the potential for a vast array of new products.

Technological progress reduced the extent of economies of scale in network construction and utilization, which allowed multiple players in the market.

This subsequently shrank the core of the natural monopoly. Therefore, duplicative investment argument in favor of natural monopoly has lost its validity in large parts of the sector. Innovations such as microwave and satellite technologies made competition possible in service segments such as long-distance communication. A range of non-traditional players flocked into the traditionally monopolistic markets, and incumbents faced competitive pressures.

The changes in the technology also triggered an unprecedented change in the institutional and regulatory arrangements within the industry. Although the seeds of change was embedded in earlier inspiring movements such as British Telecom privatization in the UK, and the deregulation experiment by the break up of the AT&T monopoly, it was not until mid 1990s that the change was embraced by a large group of countries. The telecommunication Act of 1996 in US was an important cornerstone in deregulation of the sector and it contributed to the acceleration of deregulation and privatization of the state owned telephone monopolies around the world.

While technological and institutional innovations facilitated access to the market, telecommunications industries have become increasingly capital intensive and required substantial amount of fixed investments. In the rapidly evolving global economy, telecommunications operators have to keep up with the needs of increasingly sophisticated users who demand low-cost, reliable and high-speed networks for transmitting data, voice, text and images.

Intensifying competition and continued pressure on the firms to innovate and improve quality triggered a range of collaborative arrangements in the industry. Companies, long considered rivals, have courted each other in order to join forces to compete in the new environment. While some companies adopted pure play strategies by remaining focused in closely related products, technologies and markets, others pursued convergence

strategies by creating alliances across technologies, products and markets. They struggled to create value by controlling technology, increasing market access and gaining economies of scale.

The waves of privatization and deregulation spanning a large number of countries not only attracted capital into local telecommunications but they also stimulated cross-border investments. Throughout 1990s both Baby Bells of US and the national telephone companies of OECD countries were actively expanded their international presence through cross-border mergers and acquisitions and participation in telecom privatizations in foreign countries. Governments in all quarters of the world welcomed multinational telecom operators to expand and upgrade their existing networks. Multilateral efforts, such as the Group of Basic Telecommunications (GBT) initiated by the World Trade Organization (WTO), further accelerated the momentum for reform and liberalization in telecommunications. Initially 72 countries, including 42 developing economies, made commitments for privatization and liberalization of their telecommunication industries with various deadlines. In less than a decade, interaction of technological change and worldwide regulatory reform globalized what used to be a dominantly domestic industry.

While environmental forces created incentives for internationalization, strategic and scale related factors prompted telecommunication firms to seek cross border opportunities proactively.

Technological turbulence and changes in the regulatory environment discussed above amplified uncertainties and vulnerability of telecom service providers at their home markets and increased the attractiveness of the foreign markets. In this volatile transitional period, escalating competition and limited growth opportunities in traditionally protected markets and demand uncertainty in emerging product markets (internet services, wireless communications and a range of data services) as well as proliferation of competition brought international expansion to the forefront of strategic

considerations as an alternative to boost revenues and diffuse risks incurred at home markets.

Sarkar et.al. (1999) argue that seeking access to international markets represents a way to move funds outside the regulated zone, and offer a potential to earn higher rates of return than rate of return regulated or price capped domestic markets¹. The threat of diverting funds from the local market could increase telecom companies' bargaining power against the regulators. In other words, in some cases international expansion is driven by the desire to alleviate regulatory pressures and to negotiate higher rates of return or price caps.

Globalization of international production and central role played by communications technologies in this process increased the need to coordinate and integrate geographically dispersed operations of corporate clients. The configuration of multinational production networks created the opportunity to serve multinational customers across the markets by providing technically compatible service packages. At the same time, it made presence in multiple markets almost mandatory to win and retain large corporate accounts for telecommunication companies. Telecom companies responded to this strategic imperative by providing customized communication services for the multinational networks such as establishing global private networks for their clients through dedicated lines and selling network maintenance and consulting services. These activities boosted the revenues, contributed to their capability to spot business development opportunities in foreign markets and increased their bargaining power in equipment procurements.

Although the structure of the telecom markets was in shifting from monopoly towards competition, it still accommodated a relatively small number of

¹ Price and Star (1993) report that telecom operators privatized between 1985-1993 had an average annualized return of 20.8%, which is much higher than the returns earned by "rate of return" regulated US telecom operators.

players and only a limited number of international market opportunities contested. This was particularly the case in many emerging markets, where telecommunications sector were being deregulated and privatized sequentially². In most cases, however, market opportunities were limited to a small number of successful bidders. This meant that companies that failed to gain access to the market at an early stage would be excluded from the market for a considerable period of time until the markets are fully liberalized. Even then, later entrants have difficult time in cracking the market as incumbents build barriers to entry despite liberalization and regulatory reform³. Thus, early and preemptive entry has potentially more value for telecom operators.

International presence is likely to create certain systemic advantages in a technologically volatile industry as it facilitates formal and informal clout over institutions such as International Telecommunications Union, industry wide standard setting negotiation groups, and equipment manufacturers. Therefore, international presence is consistent with the search for systemic advantages for telecommunication companies

Finally, telecommunication companies are motivated to seek international expansion to create input and output economies of scale. The enhanced position in equipment purchases creates input scale economies. The interconnected nature of the telecom networks creates output scale economies that arise due to traffic handling and capacity utilization (bandwidth, switching and administrative facilities) and allows network optimization that otherwise operated sub optimally under national constraints. It also creates the arbitrage possibility of carrying the traffic across the cheapest network.

² State owned national monopolies were privatized either in bundles or after unbundling and restructuring them along the market segments such as local loop, long distance, data and value added services.

³ The experience of AT&T in Mexican long distance market demonstrated how difficult it could get to break the dominance of the incumbent's hold in the market.

M&A Dynamics in the Telecommunications Industry

Although mergers and acquisitions is a widely studied issue in corporate finance, corporate control issues in the regulated industries have not been fully explored. The rapid transformation and the changing dynamics of the telecommunications industry as well as persisting role played by the policy makers suggests that corporate control is still an uncertain source of value for the companies. The central role played by mergers and acquisitions in the evolution of the telecommunications industry justifies exploration of value and performance implications of these strategic moves.

As it was discussed above, the main potential benefits of international acquisitions in telecommunications are the achievement of scale and scope economies, strategic advantages derived from preemptive market entry, systemic advantages amassed from international presence, opportunity to capitalize on the strategic interdependence, and regulatory arbitrage across regimes. The wealth implications will largely depend on the extent to which these benefits can be capitalized in international expansion through acquisitions. As it has been widely discussed in the M&A literature, acquisitions may also be potentially value destroying from the shareholder's point of view because of agency problems, managerial hubris and lack of focus or diversification discount. In the context of telecommunications services, the value destruction can also be related to volatility of regulatory environment, failure to capitalize on prospective economies of scale, strategic advantages and disruptive technological innovations.

The literature focusing in telecom mergers and acquisitions is not extensive. In the following section we will briefly review the findings of the relevant literature: Wilcox et.al (2001) analyzed 44 transaction occurred between 1996 and 1998. Their event study results suggests that telecom mergers and acquisition activities resulted in significant increases in the market values of

the affected firms. They indicate that their results contradict with the earlier studies focusing on transactions involving information technology firms and they attribute this to the changing perception of the investors after the 1996 Telecommunications act. In another study focusing on European mergers and acquisitions between 1999 and 2000, Trillas (2002) reports 2.7% average abnormal stock returns in 12 acquisitions and is supported by a case study of Telefonica of Spain. The study concludes that there is no evidence of significantly positive average effect on acquirers' market value of the completed transactions in the market for corporate control of European telecommunications firms. Trillas also notes that some potentially positive net present value acquisitions were stopped by political reasons.

The current study will explore the value and performance implications by analyzing 100 acquisitions by US companies between 1985 and 2000.

Data and Methodology

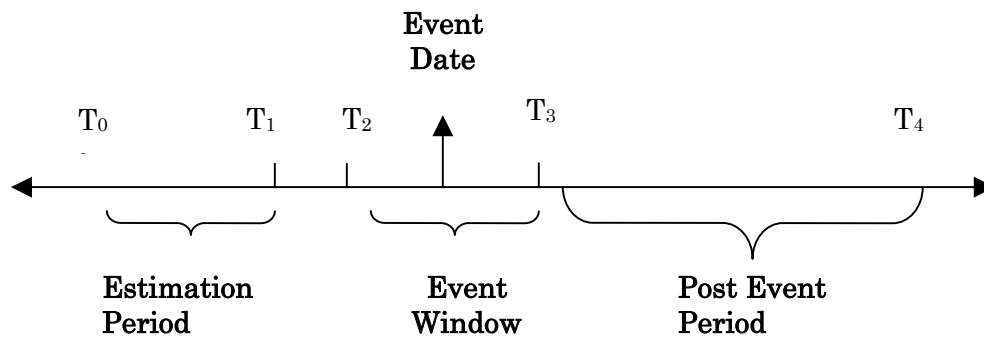
Data

Our search of newswires for cross-border telecom mergers and acquisitions revealed a total of 3609 transactions. Out of these 3609 cases, 523 transactions involved acquirers domiciled in the United States. In 480 of the 523 transactions acquirer name and industry could be identified. Our screening of acquirers within SIC code 4813 produced 119 transactions. Among these 119 transactions, 110 revealed a disclosed transaction value. We further pursued this sample to compile accounting and share price data. Search and cross checks in DataStream revealed 35 transactions with share price data for the relevant period, and 64 transactions with relevant accounting data. We used 35 transactions to conduct event studies to identify value implications of cross-border acquisitions announcements. A second sample of 64 companies with workable accounting data was used to compare pre and post acquisition performance indicators. A list of companies in each sample was included in the appendix.

Methodology:

a. Event Study

The event-study methodology is used in this study to examine the reaction of investors to acquisition announcements (also called events).



- $[T_0...T_1]$ is estimation period: typically 250 transaction days, but varies 180 to 250 days. In this study a 250 days of estimation window was used.
- $[T_2...T_3]$ is event window: Varies depending on the objective of the study and the accuracy of the announcement day, anywhere between 3 days (-1 to +1) to 60 were used in the literature. In our case we are confident that the announcements are recorded accurately, therefore we contemplated a 3 day event window, which is also consistent with the spirit of the event study methodology.
- $[T_3...T_4]$ is post event period: Varies depending on the objective of the study. In this study we used 12 and 24 month post event periods.

The methodology is based on the assumption that capital markets are sufficiently efficient to evaluate the impact of new information (events) on expected future profits of the firms. It involves the following steps:

- Identification of the events of interest and definition of the event window
- Selection of the sample set of firms to include in the analysis;

- Prediction of a "normal" return during the event window in the absence of the event;
- Estimation of the abnormal return within the event window, where the abnormal return is defined as the difference between the actual and predicted returns; and
- Testing whether the abnormal return is statistically different from zero. Several methods may be used to obtain to estimate abnormal returns: the single-index model (constant mean return model), the market model and the capital asset price model (CAPM) are the most widely used methods. In this study market model was used to estimate the abnormal returns.

The market model assumes a linear relationship between the return of any security to the return of the market portfolio:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_t \quad (1)$$

with $E(\varepsilon_{it})=0$ and $Var(\varepsilon_{it})=\sigma^2_{\varepsilon_i}$

where t is the time index, $I=1,2, \dots,N$ stands for security, R_{it} and R_{mt} are the returns on security i and the market portfolio respectively, during period t , and ε_t is the error term for security i .

Equation (1) is generally estimated over a period, which runs between 120 and 250 days prior to the event up to a predetermined number of days prior to the event. The event window is defined depending on the accuracy of announcement date and ranges from 3 days to as long as 60 days. With the estimates of α and β from equation (1), one can predict a "normal" return during the days covered by the event window. The prediction error (the difference between the actual return and the predicted normal return), commonly referred to as the abnormal return (AR), is then calculated as:

$$AR_{it} = R_{it} - \alpha_i + \beta_i R_{mt} \dots\dots\dots(2)$$

For each individual event daily abnormal returns are calculated over the specified event window. However, in order to draw overall inference on the abnormal return observations for the event(s) of interest, one can also aggregate the abnormal returns. For a sample of N firms a daily average abnormal return (AR) for each day t is obtained:

$$AR_t = \frac{1}{N} \sum_{i=1}^n AR_{it} \quad (3)$$

The expected value of AR_t is zero in the absence of abnormal performance. To examine whether the average daily abnormal return is statistically different from zero, the average standardized abnormal return (SAR_t) is calculated as:

$$SAR_t = \frac{1}{N} \sum_{i=1}^N \frac{AR_{it}}{S_{it}} \quad (4)$$

where S_{it} is the square root of firm i's estimated forecast variance computed by

$$S_{it} = \left\{ S_i^2 \left[1 + \frac{1}{T} + \frac{(R_{mt} - \bar{R}_m)^2}{\sum_{k=1}^T (R_{mk} - \bar{R}_m)^2} \right] \right\}^{1/2} \quad (5)$$

where S_i^2 is the residual variance for security i from market model regression, T is the number of observations during the estimation period, R_{mk} is the return on market portfolio for the k-th day of the estimation period, R_{mt} is the return on the market portfolio for day t, and \bar{R}_m is the average return on the market portfolio. Assuming that the individual abnormal returns are normal and independent across securities, the statistic Z_t which follows a unit-normal distribution is used to test the hypothesis that the average standardized abnormal return equals zero where.

$$Z_t = \sqrt{N} SAR_t \quad (6)$$

In order to test for the persistence of the impact of the event during a period (T_1, T_2) , the abnormal returns over the event window can be aggregated to obtain the cumulated abnormal returns $(CAR_i(T_1, T_2))$ for security i over the period (T_1, T_2) :

$$CAR_i(T_1, T_2) = \sum_{t=T_1}^{T_2} AR_{it} \dots\dots\dots(7)$$

For a sample of N securities, the average cumulative abnormal return is calculated by

$$\overline{CAR}_{(T_1, T_2)} = \frac{1}{N} \sum_{i=1}^N CAR_i(T_1, T_2) \quad (8)$$

Finally a t-statistic is computed for the average CAR as:

$$t = \frac{\overline{CAR}_{(T_1, T_2)}}{(S_{CAR(T_1, T_2)} / \sqrt{N})} \quad (9)$$

where S_{CAR} is the standard deviation of the cumulative abnormal returns over the event window, and N is the number of firms. The CARs are used to determine whether the decision taken by the firm had a material effect on the firm value. While positive CARs indicate that the equity market expects the acquisition to create value, negative CARs imply value destruction.

b. Other Performance Metrics to be used in the Analysis

In order to compare pre and post acquisition performance of the firm we used three widely used indicators: Operating Margin, Return on Assets and Tobin's-q.

The Operating Margin employed in this study was calculated as follows:

$$OM_t = \frac{EBITD_t}{Sales_t} \quad (10)$$

This ratio is based on the real cash earnings of a firm (Earnings Before Interest, Taxes and Depreciation-EBITD) and is neutral to differential accounting practices across firms, degree of leverage and tax treatments of assets. It is particularly widely used in sectors that require large investments in infrastructure with long gestation period, which is consistent with the characteristics of the telecommunications industry.

The second indicator, return on assets, is also based on the EBITD due to its neutrality to depreciation methods, leverage and tax treatment and measures pre and post acquisition efficiency of assets. If the expected synergies from acquisition are realized, asset efficiency of the company should improve. Return on Asset ratio employed in the analysis was calculated as follows:

$$ROA_t = \frac{EBITD_t}{TotalAssets_t} \quad (11)$$

Finally, the third indicator Tobin's-Q is defined as the ratio of market value of the firm to the replacement cost of its assets. We used Chung-Pruitt (1994) approximation to calculate the Q ratio:

$$Tobin's-Q_t = \frac{MVE_t + PS + DEBT}{TotalAssets_t} \quad (12)$$

where MVE is the product of a firm's share price and the number of outstanding common shares, PS is the liquidating value of the firm's outstanding preferred stock, DEBT is the value of the firm's short term liabilities net of its short term assets, plus the book value of the firm's long term debt, and TA is the book value of the total assets of the firm.

Tobin's Q an important and widely accepted measure of corporate performance. It has been employed to explain a number of diverse corporate

phenomena such as cross-sectional differences in investment and diversification decisions, the relationship between managerial equity ownership and firm value, relationship managerial performance and tender offer gains, investment opportunities and tender offer responses. In the context of this study, we use the Tobin's-q to measure the effectiveness of the acquisition. Doukas (1995) argue that international acquisitions can be construed as one-way managers spend cash instead of paying out to shareholders. Therefore, declining q can be associated with overinvestment or investments in low benefit or value destroying projects. An increase in Tobin's q in the post acquisition period, on the other hand, implies value maximization.

After computing the pre and post acquisition performance variables, we used the Mann-Whitney test (also known as Wilcoxon Rank Sum Test) of two medians as our principal method of testing for significant changes in the variables. More specifically we tested whether post acquisition cross-sectional sample medians are larger than the pre-acquisition cross-sectional sample medians. This procedure is the non-parametric counterpart of the equality of means for normal distributions. The advantage of the test is that it does not require assumption of normality.

Empirical Results

Event Study Findings:

In this study we analyzed 33 acquisitions made by US Telecommunication companies in 18 countries located in North America, Europe, Latin America and Asia Pacific. While 15 of the target companies were domiciled in developed countries, 18 were located in Latin American and Asian emerging markets.

Total value of acquisitions included in the sample was \$12.3bn with a mean transaction value of \$363.8m. Median, minimum and maximum transaction

values were reported in table-3 of the appendix. Total dollar value of acquisition of targets in emerging markets exceeded the dollar value of acquisitions in developed markets. Average emerging market target acquisition was also larger than the developed country target acquisitions.

The event study results of 33 cases suggest that on average cross-border acquisitions of US Telecommunication companies failed to create value for shareholders. While average abnormal returns calculated on the day prior to the announcement (-1) and on the announcement day were negative, abnormal returns the day after the announcement day was positive (See table-4). In 42% of the transactions analyzed 42% of the abnormal returns were positive on day (-1) and day (0). The number of transactions with positive abnormal returns increased to 52% on event day (+1). Cumulative abnormal returns over the event window proved to be positive but insignificant (see Table-4). A closer look at the abnormal returns reveals that maximum abnormal returns recorded on day (-1), announcement day and day (+1) were 3.7%, 9.5% and 20.2% respectively. Average cross-sectional Cumulative Abnormal Returns (CARs) were 0.154%. Maximum and minimum CARs across the companies were 79% and -15% respectively (See Table-5). Roughly 51% of the CARs were positive.

An analysis of abnormal returns and cumulative abnormal returns based on the target location reveals an interesting pattern. On average Cumulative Abnormal returns are larger for emerging market acquisitions than the developed market acquisitions. It is also more likely to observe a positive AR or CAR when the target is domiciled in an emerging market (see Tabel-6). However when differences tested they proved to be statistically insignificant. This result was also verified by a cross-sectional regression of CARs on the country dummy (see Table 7).

Pre and Post Acquisition Comparative Performance Metrics :

A simple naked eye analysis of the performance measures reveals the following: Operating margin improved in 49.23% of the cases from pre-acquisition year to the announcement year. The same number of positive changes were observed from pre-acquisition year to the year following the acquisition. The operating margin improvements declined to 40% when from pre-acquisition year to two years following the acquisition. In 28% of the cases performance increased in two of three years following the acquisition. Only 23% of the cases revealed three year improvements as compared to the pre-acquisition year (See table-10). Similar ratios were observed for the Return on Asset measure. Asset efficiency increased in more cases in the post acquisition year as compared to operating margin.

The improvements in Tobin's-q are dramatically different than the changes in the other two metrics. For instance in only 20% of the cases we observed an improvement in q from pre-acquisition year to post acquisition year.

In order to test the statistical significance of these naked eye observations reported in Tables 10 and 11, we used Mann-Whitney test. Test results revealed that observed changes were not statistically significant at 1, 5 and 10% significance levels.

Concluding Remarks

In this study we analyzed the value and performance implications of cross-border acquisitions by US Telecommunications firms. Our study was based on two relatively small samples. Sample analyses revealed that cross-border acquisitions of US Telecom companies on the average did not create value for the involved shareholders. We also could not identify any significant performance improvements. On the surface the results of the study is consistent with the earlier findings reported in the finance literature where bidding firms are consistently associated with value destruction. Some studies attribute value destruction to loss of focus, and relate the negative acquisition premiums to

diversification effect. In more recent studies, it was reported that cross border (geographic acquisitions) with focus were more likely to create value (Bodnar et al 2001). Our study results cannot verify this conclusion as our sample represents focused acquisitions in a narrow industrial segment.

The results of this study should be generalized with great caution for a number of reasons. First, small sample size does not allow us to make general statements about the findings, and empirical patterns. Second, two samples used in the study introduces a survival bias. Survivor firms that seldom became targets themselves dominate the event study sample. The performance sample includes a number of firms that became acquisition targets or bankrupted.

Finally, to improve the external validity of the study, empirical analysis should be expanded with a larger sample.

BIBLIOGRAPHY

Bodnar, G. Tang C. Y. and Weintrop, J., 2001, Both Sides of Corporate Diversification: The value impacts of corporate geographic and industrial diversification. NBER WP # 6224 .

Chung K.H and Pruitt, S.; 1994, A Simple Approximation of Tobin's q, Financial Management, Volume 23, No:3, p. 70-74.

Doukas J., 1995, Overinvestment, Tobin's q and Gains from Foreign Acquisitions, Journal of Banking and Finance, Volume 19, p. 1285-1303.

Lehn, K., (2002), Corporate Governance In The Deregulated Telecommunications Industry : Lessons From The Airline Industry., Telecommunications Policy, Jun/Jul2002, Vol. 26 Issue 5/6, p225

Price M and Star M., 1993, Privatizations Bring Global Opportunities, Pensions and Investment, Volume 21 No 15, p28.

Ramamurti R. 2000, Risk and Rewards in the Globalization of Telecommunications in Emerging Economies, Journal of World Business, Volume 35 No 2 p 149.

Sarkar MB, Cavusgil, T, and Aluakh P.;, 1999 International Expansion of Telecommunications Carriers: The Influence of Market Structure, Network Characteristics and Entry Imperfections, Journal of International Business Studies, Volume 30 No 2 p 361..

Trillas, Francesc , 2002, Mergers, Acquisitions And Control Of Telecommunications Firms In Europe.; , Telecommunications Policy, Jun/Jul2002, Vol. 26 Issue 5/6, p269,

Wilcox H.D., Kuo-Chung C., and Grover V.; 2001, Valuation of Mergers and Acquisitions in the Telecommunications Industry: A Study on Diversification and Firm Size, Information Management, 38 p. 459-471.

APPENDIX

Table-1a: Event Study Sample

Acquirer Name

US Sprint Communications Co	MCI Communications Corp
Southwestern Bell Corp	Telegroup Inc
American Telephone & Telegraph	Southwestern Bell Corp
NYNEX Corp	AT&T Corp
Pittencrieff Communications	Tyco Submarine Systems Ltd
Pacific Telesis Group	Primus Telecommunications
Nextel Communications Inc	BellSouth Corp
Nextel Communications Inc	BellSouth Corp
Southwestern Bell-Cellular Op	Sprint PCS
Southwestern Bell Corp	Centennial Cellular Corp
AirTouch Communications Inc	Primus Telecommunications
AT&T Corp	AT&T Latin America
Southwestern Bell Corp	Viatel Inc
Southwestern Bell Corp	Startec Global Communications
McCaw International(Nextel Co)	BellSouth Corp
AirTouch Communications Inc	BellSouth Corp
BellSouth Corp	8x8 Inc
Nextel Communications Inc	Covad Communications Group Inc

Table-1b: Event Study Parameters

Event Date	MM-Start	MM-End	# Trading Days	Event Start	Event End	Event Window
10/11/1990	10/11/89	09/27/90	250	10/10/90	10/12/90	3
10/11/1990	10/11/89	09/27/90	250	10/10/90	10/12/90	3
01/07/1993	01/09/92	12/24/92	250	01/06/93	01/08/93	3
10/22/1993	10/23/92	10/08/93	250	10/21/93	10/25/93	3
01/17/1994	06/23/93	01/03/94	142	01/14/94	01/18/94	3
03/31/1994	01/04/93	03/17/94	250	03/30/93	04/01/94	3
06/06/1994	06/07/93	05/23/94	250	06/03/94	06/07/94	3
10/11/1994	10/12/93	09/27/94	250	10/10/94	10/12/94	3
10/24/1994	10/25/93	10/10/94	250	10/21/94	10/25/94	3
01/12/1995	12/16/93	12/01/94	250	12/14/94	12/16/94	3
02/07/1995	02/08/94	01/24/95	250	02/06/95	02/08/95	3
08/07/1995	08/04/95	08/07/95	250	08/08/94	07/24/95	3
07/10/1996	07/12/95	06/26/96	250	07/09/96	07/10/96	3
11/08/1996	08/19/96	10/24/96	48	11/07/96	11/11/96	3
12/23/1996	12/25/95	12/06/96	250	12/20/96	12/24/96	3
09/05/1997	09/05/96	08/22/97	250	09/04/97	09/08/97	3
07/29/1998	07/29/97	07/14/98	250	07/28/98	07/30/98	3
08/06/1998	08/07/97	07/22/98	250	08/05/98	08/09/98	3
11/16/1998	11/14/97	10/30/98	250	11/13/98	11/17/98	3
01/05/1999	01/05/98	12/21/98	250	01/04/99	01/06/99	3
05/19/1999	05/19/98	05/04/99	250	05/18/99	05/20/99	3
05/31/1999	05/29/98	05/14/99	250	05/28/99	06/01/99	3
10/01/1999	10/01/98	09/16/99	250	09/30/99	10/04/99	3
11/16/1999	11/16/98	11/01/99	250	11/15/99	11/17/99	3
12/17/1999	12/17/96	12/02/97	250	12/16/99	12/18/99	3
01/17/2000	01/29/99	12/31/99	250	01/14/00	01/18/00	3
02/08/2000	02/09/99	02/24/00	250	02/07/00	02/09/00	3
02/24/2000	02/24/99	02/09/00	250	02/23/00	02/25/00	3
02/29/2000	03/01/99	02/14/00	250	02/28/00	03/01/00	3
03/30/2000	03/31/99	03/15/00	250	03/29/00	03/31/00	3
05/05/2000	5/26/1999	04/20/00	250	05/04/00	05/08/00	3
05/25/2000	05/26/99	05/10/00	250	05/24/00	05/26/00	3
06/30/2000	07/01/99	06/15/00	250	06/29/00	07/03/00	3
08/11/2000	03/25/99	07/27/00	250	08/10/00	08/14/00	3

Table-2: Performance Study Sample

Acquirer Name	
Millicom Inc	Andrew Corp
Pacific Telesis Group	AT&T Corp
Pacific Telesis Group	ADC Telecommunications Inc
Atlantic Tele-Network Co	MCI Communications Corp
Park Communications Inc	ADC Telecommunications Inc
Able Telcom Holding Corp	Itron Inc
GTE Corp	Computron Software Inc
Cognitronics Corp	Sitel Corp
IDB Communications Group Inc	Aspect Telecommunications
Digital Equipment Corp	United International Holdings
Able Telcom Holding Corp	GST Telecommunications Inc
Starter Corporation	AirTouch Communications Inc
NYNEX Corp	Cincinnati Bell Inc
Bell Atlantic Corp	AirTouch Communications Inc
Geotek Communications Inc	Bell Atlantic Corp
LCI International Inc	LCC International Inc
Pittencrieff Communications	BellSouth Corp
Geotek Communications Inc	Tellabs Inc
Datatec Systems Inc	P-COM Inc
Motorola Inc	Caribiner International Inc
AirTouch Communications Inc	COMSAT Corp
AirTouch Communications Inc	SBC Communications Inc
Nextel Communications Inc	Automatic Data Processing Inc
Motorola Inc	Automatic Data Processing Inc
Nextel Communications Inc	Medialink Worldwide Inc
Nextel Communications Inc	Motorola Inc
AirTouch Communications Inc	Nextel Communications Inc
GTE Telephone Operations	United International Holdings
United International Holdings	Sitel Corp
AirTouch Communications Inc	Brightpoint Inc
DSP Communications Inc	P-COM Inc
GST Telecommunications Inc	AirTouch Communications Inc
Harris Corp	

Table-3: Event Study Sample Characteristics

	Total	In Emerging Markets	In Developed Markets
Number of Acquisitions	33	18	15
Value (million \$)	\$12,370.80	\$7422.3	4948.5
Mean Value (million\$)	363.8	218.3	141.4
Median (million \$)	136.7	20.5	.0
STD (million \$)	626.624364	496.0628	454.3338

Table-4: Summary of ARs and SARs over the event window.

	Mean	Median	% Positive	Z-Value/t-Value
AR(-1)	-0.0068	-0.0062	42%	0.22
AR(0)	-0.0012	-0.0033	42%	-0.04
AR(+1)	0.0097	0.0004	52%	-0.43
SAR(-1)	0.0390	-0.0191	42%	
SAR(0)	-0.0066	-0.0106	42%	
SAR(+1)	-0.0745	0.0025	52%	
CAR(-1,1)	0.0015	-0.0013	51%	0.148

Table-5: Maximum and Minimum AR s during the event window

	Max	Min
AR(-1)	0.037	-0.075
AR(0)	0.095	-0.080
AR(+1)	0.202	-0.073
SAR(-1)	1.675	-0.707
SAR(0)	0.387	-0.274
SAR(+1)	0.599	-0.507
CAR(-1,+1)	0.794	-0.150
SCAR(-1,+1)	0.794	-1.219

Table-6: Differential Abnormal Returns in Acquisition of Targets in Emerging and Developed Countries

	Developed		Emerging	
	Target	%Positive	Target	%Positive
AR(-1)	-0.0036	40%	-0.0030	44%
AR(0)	-0.0037	40%	0.0025	50%
AR(+1)	0.0626	33%	0.0452	67%
SAR(-1)	-0.0372	40%	0.0750	44%
SAR(0)	-0.0062	40%	-0.0002	50%
SAR(+1)	-0.0197	33%	-0.0526	67%
SCAR	-0.0359	33%	0.0124	67%

Table-7: Emerging Developed AR Differences

	AR(Emerging-Developed)	Z-Stat
AR(-1)	0.0006	0.0018
AR(0)	0.0063	0.0179
AR(+1)	-0.0174	-0.0498
SAR(-1)	0.1122	0.3209
SAR(0)	0.0060	0.0172
SAR(+1)	-0.0330	-0.0943
SCAR	0.0483	0.1381

**Table-8: Cumulative Return Regression Output:
(Independent Variables Country Dummy and Transaction Size)**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.055917	0.056620	-0.987584	0.3313
EMG	0.110385	0.108580	1.016616	0.3175
TRNSC	-7.67E-05	6.83E-05	-1.123334	0.2702

Table-9: Abnormal and Cumulative Abnormal Returns over the event period.

ACQUIRER	AR(-1)	AR(0)	AR(+1)	$\sum AR_t$	SAR(-1)	SAR(0)	SAR(+1)	$\sum SAR_t$	CAR(-1,1)
Sprint	0.0066	-0.0055	0.0087	0.0099	0.0181	-0.0150	0.0238	0.0155	0.0099
SBC	-0.0079	0.0259	0.0129	0.0309	-0.0428	0.1403	0.0700	0.0967	0.0309
AT&T	0.0106	0.0021	0.0004	0.0132	0.0617	0.0121	0.0025	0.0441	0.0132
NYNEX Corp	0.0145	-0.0314	-0.0042	-0.0210	0.0915	-0.1978	-0.0263	-0.0765	-0.0210
Pittencrieff Communications	0.0026	-0.0801	-0.0728	-0.1502	0.0049	-0.1533	-0.1388	-0.1658	-0.1502
Pacific Telesis Group	0.0065	-0.0080	-0.0006	-0.0020	0.0294	-0.0360	-0.0025	-0.0053	-0.0020
Nextel	-0.0070	0.0047	-0.0146	-0.0169	-0.0257	0.0172	-0.0535	-0.0358	-0.0169
SBC	-0.0168	-0.0128	-0.0171	-0.0467	-0.3304	-0.2513	-0.3372	-0.5305	-0.0467
SBC	-0.0009	-0.0112	-0.0018	-0.0138	-0.0191	-0.2451	-0.0386	-0.1748	-0.0138
AT&T Corp	-0.0155	0.0003	-0.0047	-0.0199	-0.7074	0.0122	-0.2120	-0.5238	-0.0199
SBC	-0.0081	0.0005	0.0224	0.0148	-0.2179	0.0140	0.5991	0.2282	0.0148
Nextel	0.0368	-0.0248	-0.0320	-0.0200	1.6751	-0.1283	-0.1655	0.7975	-0.0200
AirTouch Communications Inc	0.0081	-0.0005	-0.0224	-0.0148	1.1696	-0.0754	-3.2148	-1.2244	-0.0148
Bell South	-0.0043	0.0272	0.0266	0.0495	-0.0566	0.1407	0.3487	0.2499	0.0495
Nextel	0.0111	0.0830	-0.0199	0.0742	0.0434	0.3240	-0.0778	0.1672	0.0742
MCI	-0.0365	0.0204	0.0156	-0.0005	-0.2600	0.1455	0.1109	-0.0021	-0.0005
Telegroup	-0.0062	-0.0151	0.0269	0.0056	-0.0110	-0.0269	0.0479	0.0058	0.0056
SBC	-0.0173	0.0120	0.0258	0.0204	-0.1783	0.1234	0.2653	0.1214	0.0204
AT&T	0.0279	0.0083	0.0230	0.0593	0.3296	0.0984	0.2716	0.4039	0.0593
TYCO	0.0160	0.0366	-0.0199	0.0327	0.1694	0.3868	-0.2109	0.1994	0.0327
Primus	-0.0352	-0.0012	0.0574	0.0210	-0.0387	-0.0013	0.0630	0.0133	0.0210
BSC	-0.0113	0.0082	-0.0699	-0.0730	-0.0821	0.0598	-0.5069	-0.3055	-0.0730
BSC	-0.0114	-0.0346	0.0014	-0.0446	-0.0905	-0.2740	0.0113	-0.2040	-0.0446
Sprint	-0.0137	-0.0033	-0.0064	-0.0235	-0.0439	-0.0106	-0.0204	-0.0433	-0.0235
Centennial	-0.0422	-0.0058	0.0267	-0.0213	-0.0488	-0.0067	0.0308	-0.0142	-0.0213
Primus	0.0080	0.0952	0.0874	0.1907	0.0108	0.1285	0.1180	0.1485	0.1907
AT&T	0.0058	-0.0166	-0.0065	-0.0173	0.0341	-0.0978	-0.0382	-0.0589	-0.0173
Viatel	-0.0752	0.0038	0.2021	0.1307	-0.0887	0.0044	0.2385	0.0890	0.1307
Startec	-0.0685	-0.0332	-0.0065	-0.1083	-0.0682	-0.0331	-0.0065	-0.0622	-0.1083
BSC	-0.0096	-0.0106	0.0157	-0.0045	-0.0927	-0.1017	0.1515	-0.0247	-0.0045
BSC	0.0051	-0.0143	0.0233	0.0141	0.0475	-0.1332	0.2174	0.0760	0.0141
8x8	-0.0118	-0.0208	0.0544	0.0218	-0.0064	-0.0112	0.0294	0.0068	0.0218
Covad	0.0145	-0.0398	-0.0126	-0.0379	0.0099	-0.0272	-0.0086	-0.0150	-0.0379
Average	-0.0068	-0.0012	0.0097	0.0016	0.0390	-0.0066	-0.0745	ACAR =	0.0015
Z-Stat					0.2238	-0.0380	-0.4281		0.148377

Table-10: Performance Changes: Pre-Acquisition and Post-Acquisition Periods

	(-1) to (0)	(-1) to (+1)	(-1) to (+2)	Two Years	Three Years
Operating Margin	32	32	26	18	15
%	49.23%	49.23%	40.00%	27.69%	23.08%
ROA	32	38	28	17	16
%	49.23%	58.46%	43.08%	26.15%	24.62%
Tobin-q	7	13	11	6	5
%	10.77%	20.00%	16.92%	9.23%	7.69%

Table-11: Summary Statistics for Performance Measures

	(-1)	0	(+1)	(+2)
Operating Margin				
# of Companies	62	63	65	45
Mean (%)	-47.2399	-23.29273	-6.657969	2.1321778
Median (%)	18.7465	20.166	18.808	18.767
Max (%)	45.365	50.449	50.449	51.201
Min (%)	-1257.37	-1136.826	-830.558	-154.384
STD (%)	241.736	181.69188	111.41649	45.925458
ROA				
# of Companies	62	63	65	46
Mean (%)	-1.46394	1.4790952	-0.625431	-1.857522
Median (%)	4.1015	3.876	2.338	3.464
Max (%)	59.844	39.324	39.324	15.591
Min (%)	-212.13	-56.174	-38.331	-34.009
STD (%)	30.6958	12.971217	13.140827	12.640214
Tobin's-q				
# of Companies	51	54	55	38
Mean	9.21498	5.729852	4.0526791	3.0324615
Median	4.33357	2.9060228	2.5590311	2.3798624
Max	99.5087	65.593089	16.254948	7.6786614
Min	0.06559	0.0655883	0.0655883	0.2546963
STD	16.7	9.6692347	3.8603736	2.1420998