

**Telecommunications Merger Trends
in the Context of the Convergence
– Using the U.S. Merger Cases**

Jin Ki Kim

Department of Management Science and Systems

University at Buffalo, The State University of New York

369 Jacobs Management Center

Buffalo, NY 14260 U.S.A.

jkim3@buffalo.edu

Paper to be presented at the 33rd Telecommunications Policy Research Conference (TPRC)

Arlington, Virginia U.S.A., September 23rd – 25th 2005

ABSTRACT

Technology development, fierce competition and deregulation have transformed several distinct communications service markets into a converged market. Mergers and acquisitions are a couple of ways to enter a new market. Digital convergence encourages mergers between companies in different areas and changes the service market. We postulate that the trends of mergers and acquisitions represent the changing market. From data collected during 2001-2004 mergers trends are investigated. Mergers within industry and that between industries are examined. Using cluster analysis, the pattern of mergers in the communications industry is scrutinized. Results show that merger within an industry is still dominant against the mergers between industries, although merger between industries is becoming significant. Telecommunications companies occupy central position in this changing market of mergers. The discussions about that phenomenon are presented from the view of technology and entry barrier to the converged market.

Keywords

Digital convergence; Mergers and acquisitions; Communications industry; Triple services; Telecommunications industry; Broadcasting and cable industry; Horizontal and vertical integrations; Cluster analysis

1. INTRODUCTION

Technology development, fierce competition, and deregulation have changed the telecommunications market from a static to a dynamic market. The development of telecom technology has turned the segmented telecom market into one converged market. Competition in this market has forced players to discover new markets and new business models. Deregulation, which has removed entry barriers, has given telecom carriers an opportunity to enter the market and to create a new market for bundling services. These internal and external forces drive telecom operators to search for a new breakthrough. Digital convergence is one of the alternatives. Convergence has led to the emergence of bundled services across market boundaries.

Convergence induces a variety of changes that are based on the notion that regulators have not been able to successfully integrate certain changes. Changes in technology and market make the regulators to come up with a new framework for telecom policy. The amendment of the Telecommunications Act of 1996 in the U.S. and the EC competition law under Article 90 of the EC Treaty are examples of these changes. The phenomena of convergence between telecom, broadcasting and IT affect the market structure of the telecom industry.

A recent surge of mergers in the telecom market is a reflection of the drastically changing environment of the market. Research on convergence in the telecom market has usually focused on the substitutability of fixed and mobile services, on the value chain for the provision of the telecom services, and on regulation matters. Research on merger has dealt with explanatory variables and merger performance. There is no research on merger cases for convergence in the telecom market.

This study tries to answer the following questions: Do the merger trends represent the digital convergence? What resides in the core of the convergence? What is the direction of convergence through mergers in future? To answer these questions, this study investigates the difference in merger trends between and within industries. We attempt to discover the merger trends in the telecom market in the context of digital convergence. We use data from 515 cases from the journal of “Mergers & Acquisitions” from 2001 to 2004. We investigate the mergers trends within and between industries using time-series analysis and discover merger types using the clustering analysis.

2. DIGITAL CONVERGENCE

The communications industry is undergoing a radical transformation, creating

exciting new opportunities and new challenges for infrastructure and service providers (Li and Whalley, 2002). One of the major trends in the communications industry is digital convergence. Digital convergence creates new opportunities for upstarts and challenges for tech icons (Baker and Green, 2004). Convergence refers to the power of the digital media to combine voice, video, data, text and money in new applications, devices and networks. The age of digital convergence in which the computer, the telephone and the television are no longer distinct products with separate functions is upon us. Whether at home, at the office, or in the classroom, we increasingly communicate, learn, and enjoy entertainment using video-on-demand, interactive television, the Internet, personal digital assistants, and more (Yoffie, 1997).

Convergence of information industries has led to the emergence of services that cross industry boundaries. Changes in these industries have caused the organization of regulatory institutions to become inadequate (Garcia-Murillo and MacInnes, 2001). The process of convergence between telecommunications, IT and broadcasting through its technological, organizational, and market/service aspects has a far-reaching influence on the sectors involved and on future socio-economic settings (Tadayoni and Skouby, 1999). The rapid convergence taking place between broadcasting, content and communication technologies, services and markets requires an urgent review of existing regulatory

frameworks. The central question is not how to regulate convergence, but how regulation should (and must) change in the face of convergence (Tadayoni et al., 1999; Ypsilanti and Xavier, 1998). The issue of convergence in the pattern of efficiency with which the telecommunications sector have been developed among OECD countries has been raised (Koski and Majumdar, 2000).

Digital convergence has lead to several changes in the communications industry. The first is substitution between telecommunications services. Technological and economic substitution may explain the patterns of development worldwide in fixed and mobile telephony (Banerjee and Ros, 2004; Rodini, Ward and Woroch, 2003). The substitution between telecom services is followed by the convergence between telecom services and broadcasting services.

The second impact of digital convergence is that the value chain of the communications industry has been changed. This means that several distinct value chains in this industry are linked with each other. The established value chain is increasingly being deconstructed, with the entry of powerful new players and radical restructuring of the industry. Rapid technological developments and increasing market turbulences have added new dimensions to an already complex scenario. Some of the current changes in the telecommunications industry are so radical that all players need to re-evaluate their

strategies and market positions to make hard decisions about their future plans. The value chains are rapidly evolving into value networks, with multiple entry and exit points, creating enormous complexity for all the players involved (Li et al., 2002).

Figure 1 shows a general value chain in communications industry and depicts the relationships among services in that industry.

Figure 1. Value Chain in the Communications Industry

Telecommunications services and broadcasting services have evolved by their own technological progress. xDSL (digital subscribers loop) and cable modem are two different streams of the communications industry confronting each other on the battlefield of the broadband service market. In some countries xDSL services have dominant power in this market, others cable modem. It depends on their market structure, penetration ratio of cable services, and regulatory policy.

The next battlefield will be on the converged market that is the triple services or bundling services among telephony, broadcasting and internet services. Most communications services will evolve into the triple service market regardless of their technology development as Figure 2.

Figure 2. Converged Market with Triple Services

This study starts with the notion that most communications services should evolve into the triple service market and that companies in this industry are willing to try to get this market first. Companies have several options to get to this triple service market such as investing in their network, adopting new technology, and merging with companies on the other side which can provide the necessary services. The goal of this study is to discover this trend in the data on mergers and acquisitions.

3. PREVIOUS LITERATURE

To reach the goal of study two kinds of literature should be referred. Those are M&A and telecom policy issues.

3.1 Mergers and acquisitions

Mergers and acquisitions are the most direct methods firms are to enter a market. It is known, however, that the average effect on acquirers' shareholder value is not significantly different from zero, which means bidding firms' shareholders do not benefit

from takeovers (Trillas, 2002). From the perspective of regulation the ability to leverage merger assets into future market power is the debatable issue (Faulhaber, 2002). The market power after merging is usually measured by traffic measurement. The European Commission (EC) and the United States Department of Justice (DOJ) used the methodologies when they assessed the competitive effects of mergers of Internet backbone providers. The traffic ratio was used by the EC to estimate market shares when it reviewed the merger application of MCI and WorldCom, and by the EC and the DOJ when they reviewed the proposed merger of Sprint and MCI WorldCom (Besen, Spigel and Srinagesh, 2002).

Assuming that the market has converged, communications companies are trying to find their next path to move ahead. The direction of mergers or alliances of companies are representative of the markets movement. The strategy of firms should be matched to the converged market as well as to technological development (Monlouis, 1998).

Under the digital convergence environment, vertical integration has been more spotlighted. The different degrees of vertical specialization and vertical integration in the communications industry result in the different payoff of integrations as opposed to the general economic theories. The market dynamics requires more concerns on the evolution of the communications industry (Krafft, 2003).

Digital convergence leads to structural changes in the information industries including publishing, broadcasting, film, cable, telephony, software and data processing and the Internet in the era of convergence. After 1996 the consolidating structure of information industries after 1996 was affected by both deregulation and digitization, and telephone corporations played the most central role in the transformation of the information industries. Cable and Internet industries also noticeably transformed their industrial relations over this time period (Chon, Choi, Barnett, Danowski and Joo, 2003).

3.2 Telecom policy issues

Regarding digital convergence, research has done much on telecom reform and policy issues. Regulators have concerns whether their structure and policy direction fit the changing market.

The functioning of separate and sector-oriented traditional regulators is jeopardized by the drive of technology convergence, therefore institutional convergence has been called upon to reform its regulatory regime (Tan, 1999). In case of the United States, the Federal Communications Commission (FCC) will continue to retain a formal role in the merger review process. However, the important substantive role has mostly shifted to the general antitrust authorities at the Justice Department and at the Federal Trade Commission.

Although the development of competition since the 1996 Act may appear slow, changes in the legal and economic environment of U.S. telecommunications are creating conditions necessary for significantly reducing regulation of telecommunications carriers and the transition to regulation via general competition policy is likely to continue in the foreseeable future (Shelanski, 2002). This trend appears in several developed countries, such as the U.K. (Simpson, 2004) as well as developing countries, for example China (Tan, 1999).

Most competition laws including the European competition policy framework, is challenged by convergence (Just and Latzer, 2000). Competition law must still evolve to deal with convergence, but in doing so it is likely to pre-empt regulatory options (Larouche, 1998).

New national regulators must rapidly establish transparent participatory processes and decision criteria to minimize uncertainty and enhance credibility. Telecom reform is leading to increasing integration of telecom with other sectors of the economy, and of telecom policy with broader economic and social policy. Telecom policy and regulation must facilitate knowledge network development in new knowledge-based economies and societies (Melody, 1999). Regulatory reform is required in the transition to the 'next-generation' regulatory frameworks that are needed as convergence progresses and

competitive markets become increasingly necessary (Ypsilanti et al., 1998). Rather than organizing into traditional industries such as common carrier, cable, and mass media, bureaus could be re-organized into functions such as oversight of rates, spectrum allocation, and universal service provision (Garcia-Murillo et al., 2001).

We already have competition among different broadband platforms, whether these are wire-line telecom network, cable network, wireless, or local area networks (Wu, 2004). As an archetype of convergence, Internet telephony has been questioning the continuing appropriateness of the current telecommunications policy and regulation. The common approach is to apply the existing regulatory framework to this new service. Those responses will not be aligned with dynamically changing communications industry that should be taken into account to form more appropriate regulatory frameworks (Ono and Aoki, 1998).

Emerging economies of the region depend significantly on convergence of information and communication technology (ICT) and how these technologies create new networks. China, the Asian Dragons and the near Newly-Industrialized Economies (NIEs) like Malaysia and Indonesia, show how they have created one of the largest markets in the world for telecom equipment and services. The Southeast Asian countries, with their open economies and export oriented investment technologies, have proved that such policies have generated trade surpluses and long-term growth. They still plan to continue ascribing

priority in their investment patterns to converging ICT (Jussawalla, 1999).

4. RESEARCH METHOD

4.1 Data

Data on mergers and acquisitions are collected from the journal of “Mergers and Acquisitions.” The data were collected on a monthly basis from 2001 to 2004. The journal lists M&A cases by the Standard Industrial Classification (SIC) codes. The concern of study is on the telecommunications industry and communications industry. Thus, we selected only the major group 48 which is “Communications industry” such as telephone, radio, TV, and CATV. The list is sorted by the acquirers’ four-digit SIC codes. Deal must be valued at \$25 million. Table 1 shows the sub-groups of SIC major group 48.

Table 1. SIC Major Group 48

In this study we focus on the mergers and acquisitions of telecommunications industry and broadcasting industry including cable and pay television services. For this study 6 sub-groups are considered: radiotelephone communications (4812), telephone communications (except radiotelephone) (4813), radio broadcasting stations (4832),

television broadcasting stations (4833), cable and other pay television services (4841), and communications services, not elsewhere classified (4899). The sub-group 4899 is the satellite industry which is highly related with telecommunications industry.

The SIC code 4812, Radiotelephone Communications, is primarily engaged in providing two-way radiotelephone communications services, such as cellular services. This industry also includes establishments primarily engaged in providing telephone paging and beeper services and those engaged in leasing telephone lines or other methods of telephone transmission, such as optical fiber lines and microwave or satellite facilities, and reselling the use of such methods to others. The SIC code 4813, Telephone Communications, except Radiotelephone, is primarily engaged in furnishing telephone voice and data communications, except radiotelephone and telephone answering services. This industry also includes establishments primarily engaged in leasing telephone lines or other methods of telephone transmission, such as optical fiber lines and microwave or satellite facilities, and reselling the use of such methods to others.

The SIC code 4832, Radio Broadcasting Stations, is primarily engaged in broadcasting aural programs by radio to the public. Included in this industry are commercial, religious, educational, and other radio stations. Also included here are establishments primarily engaged in radio broadcasting and which produce radio program

material. The SIC code 4833, Television Broadcasting Stations, is primarily engaged in broadcasting visual programs by television to the public, except cable and other pay television services. Included in this industry are commercial, religious, educational, and other television stations. Also included here are establishments primarily engaged in television broadcasting and which produce taped television program material.

The SIC code 4841, Cable and Other Pay Television Services, is primarily engaged in the dissemination of visual and textual television programs, on a subscription or fee basis. Included in this industry are establishments which are primarily engaged in cable-casting and which also produce taped program materials. The SIC code 4899, Communications Services, Not Elsewhere Classified, is primarily engaged in furnishing communications services, not elsewhere classified.

The journal of “Mergers and Acquisitions” list M&A cases into three kinds of types: U.S. mergers and acquisitions, foreign acquisitions in the U.S. and U.S. acquisitions abroad by the nationality of companies in the M&A deal. Table 2 shows the number of deals and amounts of M&A cases in the major group 48 from 2001 to 2004.

Table 2. Number of Deals and Amounts of M&A Cases in 48 Group (2001~2004)

The number of deals in 2001 has shown the highest in that period. In terms of the portion of types, 74% are deals of U.S. mergers and acquisitions, 10% foreign acquisitions in the U.S., and 16% U.S. acquisitions abroad. For the deal size in 2002 the amount of deals is about \$107 billion which is four times of that in 2003. It is because some big deals completed in 2002.

Only 42.91% of transaction in major group 48 reported the transaction value, whereas about 57% of transactions disclosed the value in other areas. It is hard to identify the reason for nondisclosure. Large deals, however, tended to publicize the transaction value. Rather than ignoring the mission values, the minimum value was substituted for them.

4.2 Methodology

In this paper cluster analysis is used to classify and group sub-industries of the communications industry. Cluster analysis was used to identify homogenous subgroups of cases in a population. Cluster analysis was used to identify a set of groups that both minimize within-group variation and maximize between-group variation. Cluster analysis classifies objects so that each object is very similar to others in the cluster with respect to some predetermined selection criterion. The resulting clusters of objects should then exhibit

high internal homogeneity and high external heterogeneity (Hair, Anderson, Tatham and Black, 1998).

The most proper approach to classifying is by using the Euclidian distance. There are several ways to work out the distance between two points in multi-dimensional space. Usually one would choose the method which gives the best results in terms of some error function or ability to classify certain data points. The most commonly used one is the Euclidian distance measure. The Euclidian distance can be considered to be the shortest distance between two points, and is basically the same as Pythagorus' equation when considered in two dimensions (Webb, 2002).

In this case, the difference of sub-groups of communications industry can be measured by the distances in five dimensions: wireless, fixed, broadcasting, cable and satellite.

Each merger case is coded by 0, 1, and 2 for five different sub-industries. For the case of M&A within industries, the case value for the industry is 2 and in case of M&A between industries the value has 1 in each industry. Others have the value of 0. Five sub-industries are considered such as wireless, fixed, broadcasting, cable, and satellite.

The deal amounts are not considered. Although bid deal has large impact on the entire communications industry, the deal size is not proportionate with the impact on the

market. The goal of this study is to trace the mergers trend. In this study the number of M&A deals is considered without concerning the deal size.

5. RESULTS

5.1 Trends

In the major group 48, “Communications” 515 cases are completed from 2001 to 2004. From among 515 cases, only 221 cases disclosed its deal size. The highest deal was worth \$72 billions when Comcast merged AT&T Broadband & Internet Services. The second highest deal size was \$41 billions for the merger between Cingular Wireless and AT&T Wireless Services. Table 3 shows the 10 highest M&A deals in communications industry during 2001-2004.

Table 3. Major M&A Deals (2001~2004)

Table 4 shows merger statistics within and between industries. Among 515 cases in this period 318 cases are done the communications industry. This means that 197 cases are between 48 major group and other industries. In this paper only the M&A cases between

major group 48 are considered.

Table 4. M&A Trends in SIC 48 Group

The data on M&A in communications industry for 4 years shows that mergers within sub-industries were about 70% and mergers between sub-industries were about 30% in terms of the number of deals and deal size. The ratio seems to be biased due to the data of 2001. In 2001 the ratio of deal size between sub-industries was 64% while that within sub-industries was 36%.

5.2 Cluster analysis

In order to examine the mergers trend, cluster analysis is used in this study. The relationship between sub-industries is examined through the cluster analysis.

Table 5. Results of Cluster Analysis

By changing the number of clusters, each cluster type has been changed. For the 5 clusters, we get five distinct clusters which represent the majority of mergers and

acquisitions are the merger within the industry. For the 4 clusters wireless and broadcasting are grouped in a cluster, fixed telephone and satellite has another cluster, and fixed and cable have each distinct cluster. That means that wireless area and broadcasting area made a distinct area and that fixed telephony has a group with satellite as well as its own distinct cluster. When we select the number of clusters as three, the result shows wireless including broadcasting, fixed, and satellite have their own groups. Finally, in case of two clusters, fixed have two groups. One is with wireless and the other is with satellite. Thus, we discover that fixed telephone service is at the center of mergers trends.

6. CONCLUSIONS

From data on mergers and acquisitions during 2001 to 2004 we reached several conclusions. First, merger within industries is bigger than that between industries. Horizontal integration is still popular than vertical integration in this area, although merger between industries is on the increase. We can postulate that this market has still more room for mergers.

The second conclusion is that telecommunications companies have central position in the M&A market than broadcasting and cable companies do. This trend can be explained

by the different level of entry barriers between those markets. Most communications companies are trying to get into the triple service markets. In order to capture this market, cable companies do not have to change their networks or to invest lots of funds. Although the technology that cable companies have is not the ultimate type of network, the higher spectrum and the broader bandwidth grant these companies a good chance to move in first. In comparison, telecommunications companies do not have many options. The technology which can carry the broadcasting signal on the existing telecommunication network has not developed. Therefore telecommunications carriers can not wait for the technological progress. Merging cable or broadcasting companies is the only option that they can choose.

7. IMPLICATIONS AND FUTURE STUDIES

The implications of this study are as followings: First, mergers between industries only after exhausting mergers within industry, we can see mergers between industries. Second, telecommunications companies play a leading role in merging companies and changing this market.

This study, however, has some limitations. Limited data from 2001 to 2004 are used in this study. Thus results are prone to the short-term trends. Long-term data should be

implemented for getting more relevant opinions. Secondly, for cluster analysis the difference between large and small deal sizes is not considered. It is debatable whether the deal size should be considered because the deal size also leads to a bias. This means that the impact of a big deal is not equal to that of summation of several small deals, though the sum of the deal size is the same. The industry factor can also influence the impact of mergers on market. Thus, how to deal with the deal size in the M&A research is another agenda.

Drawbacks can also accrue from the methodology used in this paper. Cluster analysis is known to be affected by the arbitrary clusters made by the analyst. Hence, other methods, which can support the results from cluster analysis, should also be used to make the analysis more robust and complement research effects.

REFERENCES

- Baker, S., and Green, H. (2004). Big Bang! *BusinessWeek*.
- Banerjee, A., and Ros, A.J. (2004). Patterns in global fixed and mobile telecommunications development: a cluster analysis. *Telecommunications Policy*, 28(2), 107-132.
- Besen, S.M., Spigel, J.S., and Srinagesh, P. (2002). Evaluating the Competitive Effects of Mergers of Internet Backbone Providers. *ACM Transactions on Internet Technology*, 2(3), 187-204.

- Chon, B.S., Choi, J.H., Barnett, G.A., Danowski, J.A., and Joo, S.-H. (2003). A Structural Analysis of Media Convergence: Cross-Industry Mergers and Acquisitions in the Information Industries. *Journal of Media Economics*, 16(3), 141-157.
- Faulhaber, G. (2002). Network effects and merger analysis: instant messaging and the AOL-Time Warner case. *Telecommunications Policy*, 26(5/6), 311-333.
- Garcia-Murillo, M.A., and MacInnes, I. (2001). FCC organizational structure and regulatory convergence. *Telecommunications Policy*, 25(6), 431-452.
- Hair, J.F., Anderson, R.E., Tatham, R.L., and Black, W.C. (1998). *Multivariate Data Analysis* Prentice-Hall, Inc., Upper Saddle River, New Jersey.
- Jussawalla, M. (1999). The impact of ICT convergence on development in the Asian region. *Telecommunications Policy*, 23(3/4), 217-234.
- Just, N., and Latzer, M. (2000). EU competition policy and market power control in the mediamatics era. *Telecommunications Policy*, 24(5), 395-411.
- Koski, H.A., and Majumdar, S.K. (2000). Convergence in telecommunications infrastructure development in OECD countries. *Information Economics and Policy*, 12(2), 111-131.
- Krafft, J. (2003). Vertical structure of the industry and competition: an analysis of the evolution of the info-communications industry. *Telecommunications Policy*, 27(8/9), 625-649.
- Larouche, P. (1998). EC competition law and the convergence of the telecommunications and broadcasting sectors. *Telecommunications Policy*, 22(3), 219-242.
- Li, F., and Whalley, J. (2002). Deconstruction of the telecommunications industry: from value chains to value networks. *Telecommunications Policy*, 26(9/10), 451-472.

- Melody, W.H. (1999). Telecom reform: progress and prospects. *Telecommunications Policy*, 23(1), 7-34.
- Monlouis, J. (1998). The future of telecommunications operator alliances. *Telecommunications Policy*, 22(8), 635-641.
- Ono, R., and Aoki, K. (1998). Convergence and new regulatory framework: A comparative study of regulatory approaches to Internet telephony. *Telecommunications Policy*, 22(10), 817-838.
- Rodini, M., Ward, M.R., and Woroch, G.A. (2003). Going mobile: substitutability between fixed and mobile access. *Telecommunications Policy*, 27(5/6), 457-476.
- Shelanski, H.A. (2002). From sector-specific regulation to antitrust law for US telecommunications: the prospects for transition. *Telecommunications Policy*, 26(5/6), 335-355.
- Simpson, S. (2004). Universal service issues in converging communications environments: the case of the UK. *Telecommunications Policy*, 28(3/4), 233-248.
- Tadayoni, R., and Skouby, K.E. (1999). Terrestrial digital broadcasting: convergence and its regulatory implications. *Telecommunications Policy*, 23(2), 175-199.
- Tan, Z.A. (1999). Regulating China's Internet: convergence toward a coherent regulatory regime. *Telecommunications Policy*, 23(3/4), 261-276.
- Trillas, F. (2002). Mergers, acquisitions and control of telecommunications firms in Europe. *Telecommunications Policy*, 26(5/6), 269-286.
- Webb, A.R. (2002). *Statistical Pattern Recognition*, (2nd ed.) John Wiley & Sons.
- Wu, I. (2004). Canada, South Korea, Netherlands and Sweden: regulatory implications of the convergence of telecommunications, broadcasting and Internet services. *Telecommunications Policy*, 28(1), 79-96.

Yoffie, D.B. (1997). *Competing in the Age of Digital Convergence* Harvard Business School Press.

Ypsilanti, D., and Xavier, P. (1998). Towards next generation regulation. *Telecommunications Policy*, 22(8), 643-659.

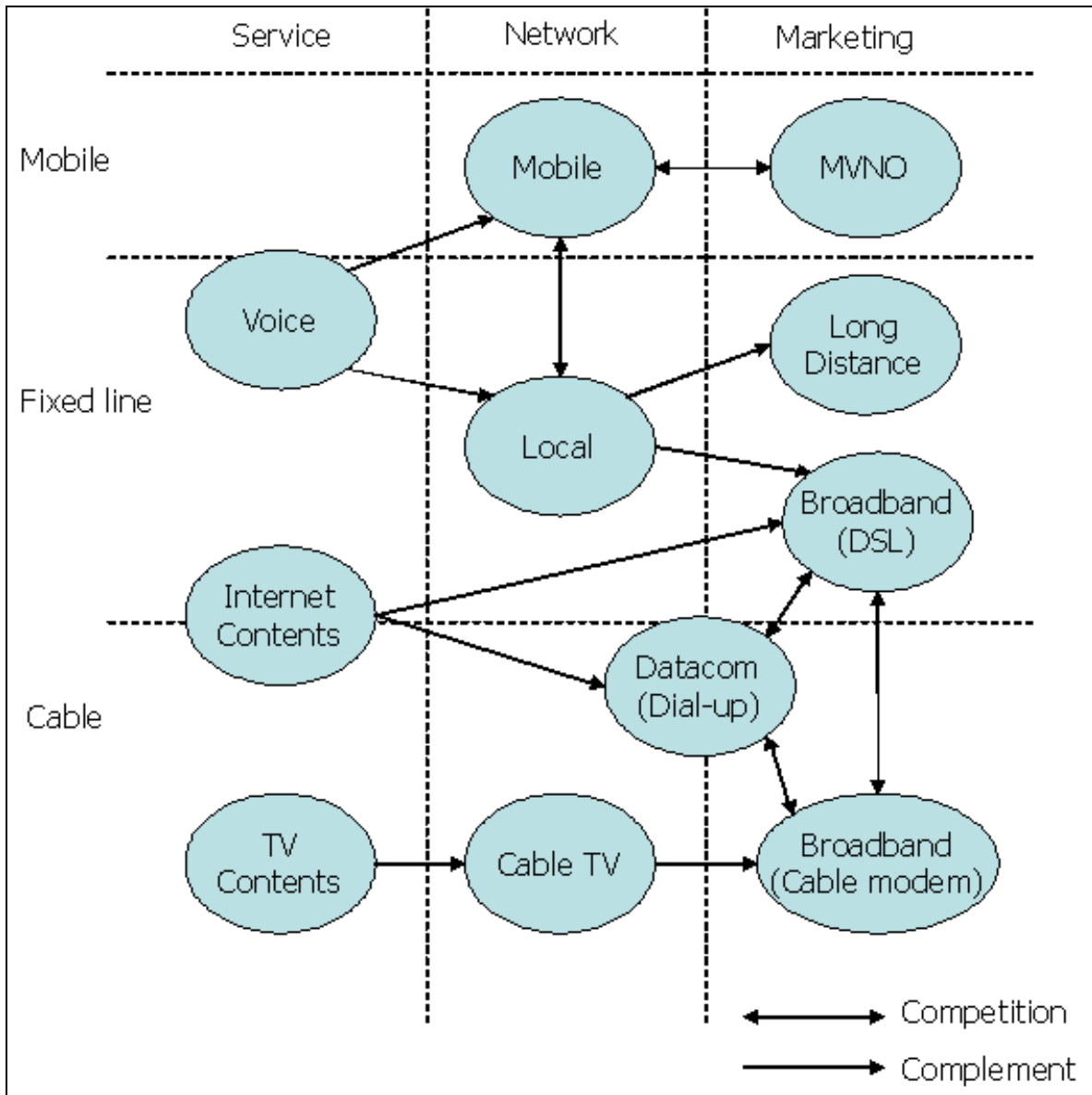


Figure 1. Value Chain in the Communications Industry

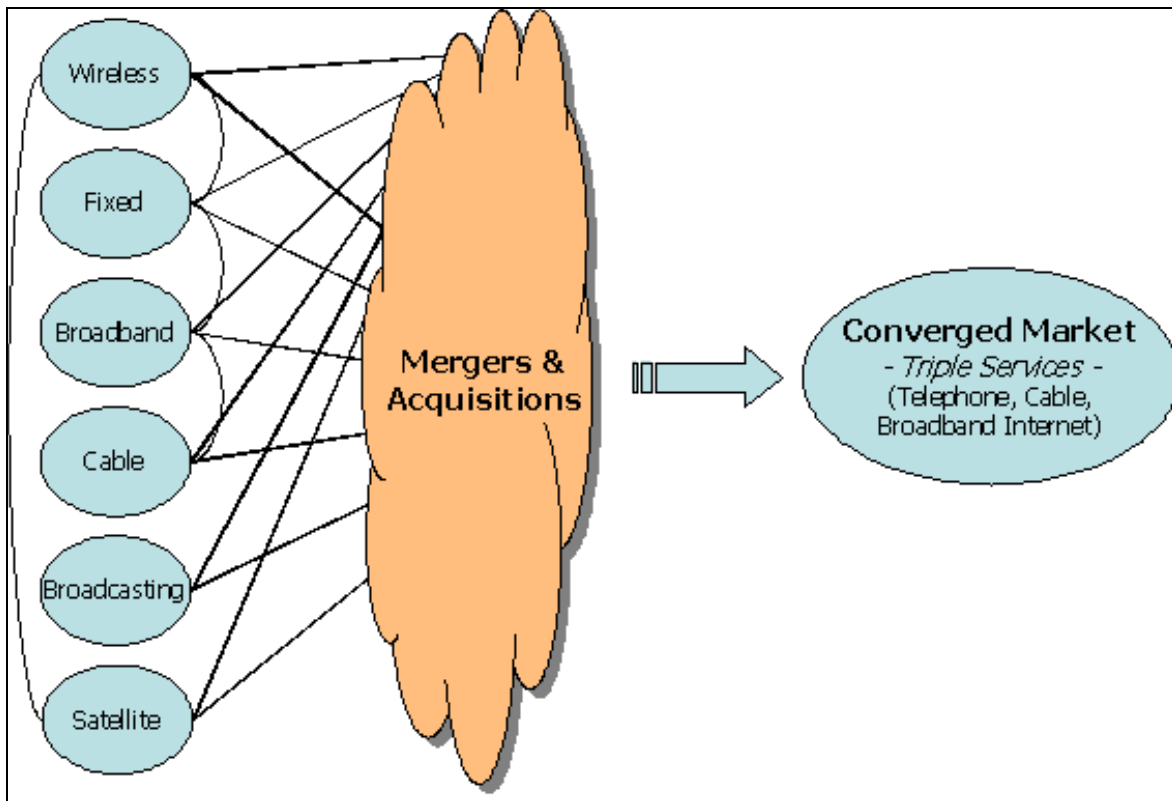


Figure 2. Converged Market with Triple Services

Industry Group 481: Telephone Communications	
·	4812 Radiotelephone Communications
·	4813 Telephone Communications, Except Radiotelephone
Industry Group 482: Telegraph And Other Message Communications	
·	4822 Telegraph and Other Message Communications
Industry Group 483: Radio And Television Broadcasting Stations	
·	4832 Radio Broadcasting Stations
·	4833 Television Broadcasting Stations
Industry Group 484: Cable And Other Pay Television Services	
·	4841 Cable and Other Pay Television Services
Industry Group 489: Communications Services, Not Elsewhere	
·	4899 Communications Services, Not Elsewhere Classified

Source: Occupational Safety & Health Administration, U.S. Department of Labor

Table 1. SIC Major Group 48

Telecommunications Merger Trends in the Context of Convergence (TPRC-33)

		2001	2002	2003	2004	Sum
Deals	U.S. Mergers and Acquisitions	106	83	84	109	382
		67.95%	76.85%	77.78%	76.22%	74.17%
	Foreign Acquisitions in the U.S.	17	10	9	11	47
		10.90%	9.26%	8.33%	7.69%	9.13%
	U.S. Acquisitions Abroad	33	15	15	23	86
		21.15%	13.89%	13.89%	16.08%	16.70%
	Sum	156	108	108	143	515
Amount (\$million)	U.S. Mergers and Acquisitions	\$47,482.70	\$92,751.40	\$17,379.50	\$63,033.35	\$220,646.95
		48.83%	86.43%	67.01%	89.81%	73.38%
	Foreign Acquisitions in the U.S.	\$44,378.20	\$12,621.50	\$6,944.20	\$1,523.90	\$65,467.80
		45.64%	11.76%	26.77%	2.17%	21.77%
	U.S. Acquisitions Abroad	\$5,377.90	\$1,946.90	\$1,612.70	\$5,625.10	\$14,562.60
		5.53%	1.81%	6.22%	8.01%	4.84%
	Sum	\$97,238.80	\$107,319.80	\$25,936.40	\$70,182.35	\$300,677.35

Table 2. Number of Deals and Amounts of M&A Cases in 48 Group (2001~2004)

	Acquirer	Target	Deal (\$ billion)	Completed Date
1	Comcast Corp. Philadelphia, PA	AT&T Corp. (AT&T Broadband & Internet Services) Englewood, CO	\$72.00	Nov-02
2	Cingular Wireless Atlanta, GA	AT&T Wireless Services Inc. Redmond, WA	\$41.00	Oct-04
3	Deutsche Telekom AG, Bonn, Germany	VoiceStream Wireless Corp. Bellevue, WA	\$30.00	May-01
4	Viacom Inc. New York, NY	Infinity Broadcasting Corp. (35.7%) New York, NY	\$13.65	Feb-01
5	Vivendi Universal SA Paris, France	USA Networks Inc. (TV entertainment assets) New York, NY	\$10.75	May-02
6	NTT DoCoMo Inc. Tokyo, Japan	AT&T Wireless Group (16%) Redmond, WA	\$9.81	Jan-01
7	Cox Enterprises Inc, Atlanta, GA	Cox Communications Inc. (Remaining 37.8%) Atlanta, GA	\$8.40	Dec-04
8	Liberty Media Corp. Englewood, CO	QVC Inc. (Remaining 57%) West Chester, PA	\$7.90	Sep-03
9	News Corp. Ltd. Surrey Hills, Australia	Hughes Electronics Corp. (34%) El Segundo, CA	\$6.88	Dec-03
10	VoiceStream Wireless Corp. Bellevue, WA	Powertel Inc. West Point, GA	\$6.15	May-01

Table 3. Major M&A Deals (2001~2004)

Telecommunications Merger Trends in the Context of Convergence (TPRC-33)

	2001		2002		2003		2004		Total	
	Deals	Amount	Deals	Amount	Deals	Amount	Deals	Amount	Deals	Amount
Radiotelephone (4812)	14	\$17,430	14	\$7,692	5	\$821	19	\$43,224	52	\$69,166
Telephone (4813)	28	\$9,254	21	\$4,038	17	\$321	20	\$2,169	86	\$15,781
Broadcasting (4832, 4833)	8	\$362	14	\$2,165	16	\$4,462	12	\$164	50	\$7,152
Cable (4841)	6	\$2,380	2	\$72,000	6	\$10,471	8	\$1,652	22	\$86,503
Satellite (4899)	1	\$0	2	\$0	3	\$0	6	\$1,021	12	\$1,021
Within	57	\$29,425	53	\$85,894	47	\$16,074	65	\$48,230	222	\$179,623
	61.96%	35.67%	72.60%	85.53%	72.31%	96.22%	73.86%	94.22%	69.81%	71.61%
Radiotelephone– Telephone	11	\$31,070	9	\$2,129	5	\$46	10	\$1,306	35	\$34,550
Radiotelephone– Broadcasting	2	\$155							2	\$155
Radiotelephone– Satellite			3	\$1,500	2	\$25	1	\$0	6	\$1,525
Telephone– Broadcasting	1	\$0	1	\$10,750	2	\$0	1	\$0	5	\$10,750
Telephone– Cable	4	\$3,498	1	\$0	1	\$525	3	\$0	9	\$4,023
Telephone– Satellite	10	\$1,666	3	\$28	7	\$36	3	\$1,190	23	\$2,919
Broadcasting– Cable	4	\$16,650	2	\$124			4	\$465	10	\$17,239
Broadcasting– Satellite	1	\$0			1	\$0			2	\$0
Cable–Satellite							1	\$0	1	\$0
Between	35	\$53,072	20	\$14,531	18	\$632	23	\$2,961	96	\$71,195
	38.04%	64.33%	27.40%	14.47%	27.69%	3.78%	26.14%	5.78%	30.19%	28.39%
Sum	92	\$82,497	73	\$100,425	65	\$16,706	88	\$51,190	318	\$250,818

Table 4. M&A Trends in SIC 48 Group

Number of clusters	Clusters (number of cases)
5	Wireless (59); Fixed (61); Broadcasting (160); CATV (12); Satellite (33)
4	Wireless + Broadcasting (150); Fixed + Satellite (48); Fixed (86); CATV (41)
3	Wireless + Broadcasting (184); Fixed (125); Satellite (16)
2	Wireless + Fixed (277); Fixed + Satellite (48)

Table 5. Results of Cluster Analysis