

Strategic motivations range from adding local access to long-distance services, to sewing up millions of new customers, to claiming a piece of a potentially hot new technology.

# *Partnerships*

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## IN THE

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# U.S. TELECOMMUNICATIONS INDUSTRY

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**The enormous capital requirements and inherently**

global nature of the telecommunications industry means the telecommunications market increasingly supports, embraces, and influences

every industry, company, organization, and consumer on the planet. Technological advances have enhanced our ability to move ever larger quantities of data and information at ever faster speeds—at the desktop and beyond—via wireless communications, cable modems, and digital servers. The

digitization and integration with computers of telecommunication services have also meant significant business opportunities. The emergence of the Internet as a standard business tool and the growing numbers of telecommuters has meant increasing demand for bandwidth and development of new ways to make the Internet accessible to potentially billions of consumers around the world. At the same time, telecom deregulation in the U.S. and around the world and declining prices have spurred increased penetration of these technologies by making them affordable to vast number of smaller businesses.

The decades before the 1960s were characterized by the birth of a U.S. telecommunications monopoly—AT&T—and its chief adversary—the U.S. Federal Communications Commission (FCC)—each trying to shape the industry to reflect its own point of view. AT&T sought to control most market segments and dictate market practices, while the FCC sought to issue market rules and regulations. A transitional era from 1961 to 1984 proved FCC the victor. By regulating the divestiture of AT&T and promoting smaller start-ups, including MCI, to provide competitive services, it broke AT&T's stranglehold on the

U.S. telecommunications market. The era of competition since 1984 can be characterized by both technological and regulatory upheaval. The recent deregulation of the U.S. industry has motivated companies to develop technical competencies and rethink their competitive strategies. Companies that would have been viewed as distinct in their product and service offerings have established partnerships that are now transforming the industry's fundamental basis of competition.

This environment can be characterized as chaotic. Traditional rivals now seek cooperation in specialized segments of the information market. These companies are betting on a technological future, investing huge amounts of capital to make it happen. Start-ups proliferate, some dying, in their attempt to leverage new technologies or ideas through their innovation and flexibility. Stock prices have gyrated wildly in light of the related uncertainty. Here, we analyze the business and technology consequences of the 1996 Telecommunication Act, as well as the industry players and a number of recent partnerships. Our goal is to identify the structure in this chaotic industry, which is vital to both the U.S. and practically all global economies.

Signed into law February 8, 1996 by President Clinton, the Act marked the first time since enactment of the Communications Act of 1934 that the legislation regulating the U.S. telecommunications industry had been altered significantly. The 1996 legislation (see the sidebar) went well beyond the 1984 Justice Department consent decree breaking up the old AT&T, rewriting the rules governing competition for telephone service, telecommunication equipment manufacturing, cable TV, radio, and TV broadcasting, as well as the Internet and online computer services—industries that combined could be worth \$1 trillion in 2000.

However, rather than facilitate competition, much of the 1996 Act's provisions remain mired in courtrooms across the U.S. Long-distance telephone companies have been legally prevented from entering the local exchange markets by leasing local lines, because the arbitration process begun April 1996 has been resolved in only a few states. Instead, local and long-distance companies have taken different approaches to gaining market access. For example, in 1998, AT&T acquired Teleport Communications Group (TCG), which owns local exchange infrastructure in New York. In 1996, Pacific Bell was acquired by SBC, and in 1996, NYNEX merged with Bell Atlantic in an attempt by the regional Bell operating companies (RBOCs) to maximize their foothold in the long-distance market. In fact, the RBOCs appear to be bet-

ting that sheer frustration may get them into long-distance markets without having to meet FCC requirements to open the local markets [4].

In contrast, the 1996 Act has served media companies well. Free of competition and heavy regulation, cable rates have shot up at four times the inflation rate. The freedom from regulation has helped create such new media giants as Tele-Communications (TCI) and Time Warner that can set prices at will, but has been disappointing for television viewers, who seem to be paying more to watch the same old service. Cable TV companies own 80% of the U.S. subscription-television market, while satellite systems have been hampered by costs and their technical (and legal) inability to broadcast local programs.<sup>1</sup>

Senator John McCain (R., Arizona), who heads the Senate Commerce Committee, has long been an advocate of open and free competition in the cable TV industry with minimal regulatory interference by the FCC. He has sponsored bills that would impose severe penalties on RBOCs that fail to implement full and open competition with regard to network access for all forms of telecommunication—voice, video, and data—for at least half of the states in their regions by February 2001. He has also advocated direct competition among satellite and cable companies. In 1999, he co-sponsored the Telecommunications Merger Review Act, now pending, which would repeal the authority of the FCC to approve telecommunications industry mergers.

### **What Deregulation Means for Major Telecom Players**

In 1997, the U.S. telecommunications industry generated revenues of \$406.7 billion, an 11% increase over 1996; 75% (or \$300 billion) of the total was for services, the remainder (\$100 billion) for equipment. The industry is now poised to grow an additional \$200 billion by 2001. The equipment component posted 13%–17% increases from 1994–1997, a trend that has continued. We expect telecommunications spending to increase by at least an 11% compound annual rate from 1998 to 2001. The emerging competitive environment following deregulation has affected all players, prompting them to bet on futures they hope will give them significant shares of this expanding pie.

*Local phone.* The local phone market has grown about 7% annually since 1997, now totaling about \$100 billion of revenue. The RBOCs, including

<sup>1</sup>As this issue went to press, legislation that had been approved by the U.S. House of Representatives was pending in the U.S. Senate that would loosen restrictions on satellite TV companies from broadcasting local channels.

Ameritech, Bell Atlantic, BellSouth, SBC, and US West, controlled about 85% of U.S. telephone access lines in 1998. Most of the rest belonged to GTE and various independent franchise holders. Competitive access providers (who install their own networks to connect customers directly to long-distance carriers) owned about 2% of the access lines but are now moving aggressively to full-service providers by offering access to the Internet and to long-distance markets [4].

The success of competition in the long-distance market following AT&T's 1984 divestiture allowed the U.S. Congress to appear balanced in drafting the Telecommunications Act of 1996, establishing competition in local telephony while allowing the RBOCs into the long-distance markets after they met certain conditions. The participation of inter-exchange carriers (IXCs) in the local markets should eventually exert downward pressure on consumer pricing. In the short run, however, reduced access fees (paid by IXCs to local exchange carriers, or LECs, to access their lines) subsidizing residential services, might actually lead to a rate increase. In the long run, lower long-distance rates should lead to increased long-distance volume, which, for the IXCs, should help offset the drop in

fees. However, Internet service providers (ISPs) are still exempt from paying access fees (due to a February 1999 ruling by the FCC), a key factor in allowing them to offer flat-rate pricing, which has helped drive Internet use. Although the RBOCs have been petitioning the FCC to require the ISPs to pay access fees, the original FCC ruling of May 1997 remains in effect.

It should also be noted that even on the home front, the increasing use of computers, faxes, and the Internet has led to an increase in both the number of access lines and phone use. We expect network access revenues, which totaled \$31.9 billion in 1997, to reach \$63.5 billion in 2000. Further, digital subscriber line (DSL) technology for high-speed Internet access through existing phone lines, is beginning to make inroads in a number of markets, possibly benefiting local phone companies, barring FCC rulings that would force line sharing.

**Long-distance.** Competition in the long-distance market can be characterized as a great success. AT&T's market share fell from almost 90% in 1984 to 50% at the end of 1997. Since the 1984 Modified Final Judgement, the number of competitors in the

## The Telecommunications Act of 1996

**T**he 1996 Act altered the competitive climate in practically every type of U.S. telecommunication market and business category.

**Local telephone service.** Long-distance companies, as well as cable TV and utilities, even those in the power industry, can now enter the various lucrative local U.S. telephone markets. The RBOCs are also permitted to manufacture phone equipment. A key issue in the legislation was access to the local network for the long-distance service providers and the fees to compensate for that access. Because these access fees represent the most burdensome cost category for the IXCs and a significant revenue stream for the LECs, they are critically important to both. The Act called for a universal service fund to replace access fees with money generated from the

LECs and administered by the Federal government.

**Long-distance service.** The RBOCs were allowed to enter the long-distance market after fulfilling certain conditions, including opening their local service markets to competition. There were also joint marketing restrictions on IXCs; AT&T, MCI, and Sprint were prohibited from marketing a package of long-distance and local-phone services for three years after enactment or until an RBOC is able to provide in-region inter-local access and transport area service.

**Cable TV.** Cable TV rates for tiers above local channels were deregulated in 1999 for major cable system operators and in 1996 for smaller cable system operators. Phone companies and others will be permitted to offer video services and can buy 100% of small cable TV system operators, but only up to 10% of large cable sys-

tem operators in their own areas.

**Broadcasting.** Media companies can now own TV stations that reach up to 35% of the U.S.'s TV households. They can also now own a TV station and cable system in the same market, but no network can acquire another network. Companies can also own more radio stations than before enactment.

**Internet and online services.** The related Communications Decency Act of 1996 set criminal penalties for knowingly transmitting sexually explicit and other indecent materials to minors on computer networks, as well as for any computer network transmission intended to "annoy" or "harass" its recipient. A criminal ban was also imposed on discussion of abortion devices and procedures on public computer networks. Much of the CDA was overturned in various decisions by the U.S. courts.

long-distance market has increased to more than 800. At the same time, five large facilities-based long-distance competitors (IXCs) emerged—AT&T, Frontier, MCI/WorldCom, Qwest Communications, and Sprint—along with a large number of “resellers” that buy wholesale service from the facilities-based carriers. In California alone, the typical consumer can choose from more than 150 long-distance providers.

Of the big five big IXCs, MCI-WorldCom has been the most aggressive in pursuing local markets. MCI’s historic strategy has been to build local networks in cities to serve its business customers, relying on local bypass companies to carry much of its traffic. MCI, through its MCI Metro local-access subsidiary,

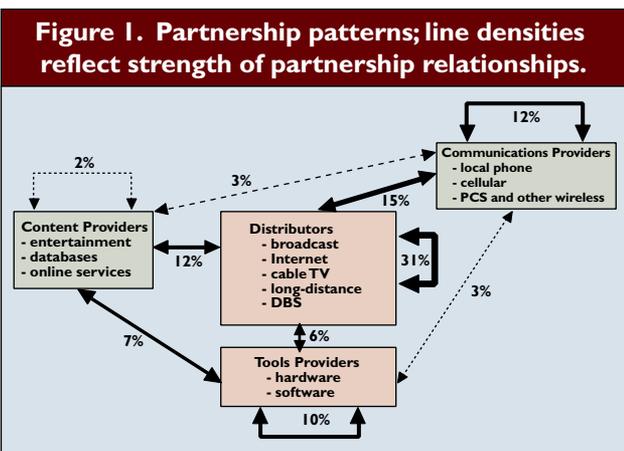
ogy, and other in-building telephone equipment (\$144 million in 1997) to rise to \$935 million in 2000.

Until recently, most U.S. cellular carriers faced only a single competitor in their regions. The combination of the Telecommunications Act of 1996 and a new generation of PCS has undermined this arrangement. Cellular carriers, finding themselves with lots of new competitors, now face a fierce price war. However, until 1999, the overall market for cellular services was sluggish, plagued by confusion over services, high prices, and incompatible platforms [5].

**Cable TV.** The Telecommunications Act of 1996 assumed a one-wire world, requiring LECs, but not cable companies, to resell access and capacity in their infrastructures to their competitors. This assumption is why major cable players today, especially such giants as TCI and Time Warner, focus on using upgraded cable wiring for high-capacity Internet service, rather than for increasingly competitive telephone services. Microsoft is also betting on the integration of TV and the Internet, investing \$1 billion in 1997 for an 11.5% share of Comcast and is still considering investments in US West, TCI, and other cable players. In 1997, it paid \$425 million for WebTV Networks, a maker of set-top Internet access devices.

With wires snaking past and into and out of more than 90% of U.S. homes today, cable TV operators are eyeing the residential local phone market, which we estimate to be four times the size of the cable market. They are betting they can upgrade their networks faster than the RBOCs can upgrade theirs. Cable companies have a head start in laying fiber-optic cable among their transmission centers and the neighborhoods they serve, adding two-way amplifiers. Phone systems still have a long way to go before they can deliver video adequately [9]. This limitation has caused some phone companies, including Chicago-based Ameritech to petition the FCC to allow it to provide access to high-speed cable lines from the cable giants, including TCI. Moreover, with Internet technology that turns phone calls into digital signals, cable companies may have a cheaper pathway for telephone calls. The next generation of set-top boxes will sit on television sets and decipher voice, video, and data sent in digital form.

**Broadcast.** The TV networks completely owned this business 20 years ago; but by 1999, the combined average prime-time share of the three big networks had dropped below 50%, a market share that should continue to decline for the next few years. The broadcast networks have been losing viewers for as long as satellite and cable programming has been invading their patch, squeezing network profits.



now offers service in 19 cities. AT&T has filed for authorization to offer local service in all 50 U.S. states, negotiating to resell local service, building its own local network, and aligning itself with bypass companies. At the same time, AT&T, having acquired McCaw Cellular in 1994 for \$11.5 billion, is still looking to enter the local market through the wireless route but hasn’t found a great deal of success. AT&T’s 1997 \$11-billion merger with TCG indicates its eagerness to use acquisitions as a business strategy for entering the local markets. Meanwhile, Sprint, recently acquired by MCI-WorldCom in a \$100-billion deal, is both an incumbent local carrier, with operations in 19 states serving about seven million subscribers mostly in rural areas, as well as an IXC. It has devoted most of its resources to wireless technologies and has not sought to expand its local presence.

**Wireless.** The U.S. wireless industry—with 48 million customers—is expanding over 25% a year with 1998 revenues of \$37 billion. We expect spending on rapidly growing unlicensed personal communication services (PCS), a relatively new digital wireless technol-

Content providers, such as MS-NBC, use multiple modes of transmission, including the Internet, to interact with their customers. However, the networks can protect themselves against the power of the content providers by either owning the content themselves or by building a brand independent of any particular program. The networks are still generally viewed as the lifeblood of the global, vertically integrated entertainment giants that own them—not as loss leaders exactly, but as ways to deliver programming to their highly profitable TV stations. They introduce shows they own that can be syndicated, or resold over and over again, earning substantial profits while promoting their own lucrative operations. Creating, introducing, and syndicating new shows seems to define the new economics of network television and is probably the reason the business of mass-market broadcast network TV won't go bust anytime soon [7].

increasing demand for network speed, including integrated services digital network (ISDN), frame relay, asynchronous transfer mode (ATM), and DSL technologies. We expect spending on equipment related to these services to reach about \$16 billion in 2000, double the total in 1996.

### Partnerships

The past few years have produced record-breaking U.S. telecommunications mergers and acquisitions, while deregulation has meant the rules of competition have turned upside down; see [theweb.badm.sc.edu/grover/cacm2000](http://theweb.badm.sc.edu/grover/cacm2000) for an extensive outline of the 127 partnerships we used in our analysis. The biggest recent combinations have involved telephone companies, totaling more than \$100 billion. They include Bell Atlantic's 1996 merger with NYNEX (\$21.3 billion); WorldCom's

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## *Deregulation has meant the rules of competition were turned upside down.*

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**Computing equipment.** This industry is characterized by tremendous investment in the technologies that support collaboration. As videoconferencing migrates to the desktop, standards (such as Intel's multimedia extensions, known as MMX) have emerged, and as prices have declined, its use has increased. Spending on videoconferencing equipment is expected to increase to \$12 billion in 2000 from \$3.7 billion in 1996 [10].

We expect that spending on computer-telephone integration (CTI), combining the functions and logic of the computer with the telephone system, will reach \$2.4 billion in 2000, double the total in 1996, a trend we expect to continue for at least the next five years. Companies looking to make better use of their Web sites have been happy to find that CTI automates inbound requests and generates outbound responses. Some major vendors, including Hewlett-Packard, IBM, and Sun Microsystems, will need communication partners to add reliability, manageability, and scalability to their open, extendible, richly featured data environments. Enhanced Internet technologies and software will help improve interfaces and integration with broadcast TV.

The fastest-growing communication equipment segments involve technologies for satisfying the ever-

1997 takeover of MCI (\$37 billion); SBC Communications' 1996 merger with Pacific Telesis (\$16.5 billion); WorldCom's 1996 acquisition of MFS Communications (\$13.6 billion); Qwest's 1998 acquisition of LCI (\$4.43 billion), creating the fourth largest U.S. long-distance company; and MCI-WorldCom's 1999 \$100 billion acquisition of Sprint. These activities were not limited to just the really big companies. Even their small and midsize counterparts were involved as they expanded by acquiring cellular phone companies, cable TV companies, and ISPs.

We expect this mergers and acquisition activity to continue for at least the next five years. Historically, industries being deregulated experience a surge of new entrants immediately before and after deregulation, along with a fair amount of consolidation among companies.

In order to further understand current trends in the telecommunications industry, we recently updated an earlier study examining 127 recent mergers, acquisitions, joint ventures, and other partnerships (referred to collectively as "partnerships") [6]. We looked at partnerships according to several criteria: involved two or more players; occurred since 1993; had a clearly discernible objective; and were described in

such public forums as the popular press, business and trade publications, and Web sites [6–8, 11]. Most of these 127 partnerships occurred in 1995 (25), 1996 (33), 1997 (27), 1998 (21), and the first half of 1999 (16) and could at least be partly attributable to the 1996 deregulation law.

We classified all of them in terms of the telecommunications industry categories described earlier.<sup>2</sup> In order to provide a conceptual framework for analyzing partnership patterns, we devised a set of broad functional categories for the companies (see Figure 1). The rationale for this categorization is based on the relationship of types of companies to their end customers. Content providers, such as the producers of video entertainment, databases, and online services,

Service promised	Delivery via cable TV	Current delivery
Video telephony	way out there	Via PC
Telephone service	2001	Local phone company
Web browsing	1999	Via PC or Web TV
Email	1999	Via PC
Online banking	2000	Via PC
100 channels of pay per view	1999	Via satellite
Shopping	2000	Via telephone

can be viewed as the upstream end of a telecommunications “value chain” and generally do not connect directly with consumers. Companies providing the telecommunications link between these groups and customers may be viewed as distributors and consist of broadcasters, cable TV companies, long-distance phone companies, and ISPs. Long-distance companies are included here, because they do not generally connect directly with end customers.

Cable TV companies are also included in this category, because they provide service that is generally unswitched, distributing the same signal to everyone connected. Communications companies are those with direct links (wired or wireless) to end customers. They include those delivering voice and data services (such as local telephone, cellular, paging, and other wireless transmission). The individual consumers and businesses using these services are the customers at the “downstream” end.

Finally, tool providers deliver the hardware and

<sup>2</sup>Please note that we evaluated each partnership in terms of its publicly proclaimed business objectives. Therefore, the same company could seek to adopt two different roles, say, as content provider and as distributor, in different partnerships.

software technologies for the industry [6].

*Communications with distribution.* We found a large number of partnerships (15% of the 127 we studied) between companies in the communication and distribution categories. The communication companies, with the most ready access to end customers, have long been a natural match with the distribution channels, but have been kept apart by the government, as in the case of AT&T’s divestiture. Most of these partnerships have consisted of long-distance phone companies trying to connect with customers by offering local-exchange service where permitted, the largest being the 1998 AT&T acquisition of TCG for \$11.3 billion in stock. This acquisition gave AT&T a foothold in the local telephone market, while reducing its costs and enabling it to provide businesses the any-distance services they want. The 1998 SBC acquisition of SNET (a Connecticut-based long-distance telephone company) for \$4.26 billion in stock expanded SBC’s territory into the geographical region dominated by Bell Atlantic, another RBOC, and gave SBC access to the long-distance market. SNET’s expertise in long-distance sales and marketing has been helpful to SBC’s expansion into long-distance telephony.

*Tools providers with tools providers.* Of the partnerships we studied, 10%, were between tool providers. All of them were partnerships or joint ventures designed to create or market such new products as interactive TV, enhanced cellular services, and intranets and other new Internet-related technologies, including virtual reality applications and Internet voice communication.

Since these technologies are so specialized and have relatively long development cycles, forming partnerships is often the only practical alternative to obtaining them. The related deals are basically the result of companies seeing how various technology products can be fit together to create a new product. An example is Cisco Systems’ recent acquisition of Cerent Corp., giving Cisco instant access to optical networking equipment.

*Communications with communications.* The most notable of the 12% of the partnerships we studied between communications companies was the 1998 Alltel acquisition of cellular provider 360 Communication for more than \$4 billion in stock. While Alltel offers a complete range of local, long-distance, wireless and Internet services, 360 is a cellular phone service covering 15 states. For Alltel, the deal helps it keep pace with the consolidation sweeping the industry, while furthering its aggressive push to offer customers a complete suite of telephone services on one

bill. On the other hand, 360 is now able to route its wireless traffic over parts of Alltel's extensive new fiber-optic network. Similarly, Bell Atlantic and Vodafone-Airtouch are in talks to combine their networks in order to provide nationwide wireless coverage to consumers.

*Distribution with distribution.* The largest percentage (31%) of the partnerships we studied fell into this category. For example, Qwest, which acquired LCI in 1998, is today building a 16,000-mile fiber-optic network it is eager to fill with long-distance telecommunications traffic. Qwest gained access to LCI's residential and small business customers, along with its sophisticated software and consumer billing systems. Another major acquisition involved WorldCom paying \$37 billion for MCI, creating a huge

### **Strategic Motivation**

It should come as no surprise that every category of partnership involving distribution companies, except for those involving tools and distribution, had high levels of activity. The distribution companies need to lock-in products for their pipelines by teaming up with content firms and to connect with customer bases, often by forming partnerships with communication companies. Other high levels of activity are probably driven by economies of scale and scope. The relatively low activity level in the content-content category may be explained by the fact that this segment of the industry has not been constrained by the regulatory environment the way the rest of it has; therefore, there is no torrent of consolidation activity waiting to be unleashed. Further-

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*Companies*  
*have found there's only one*  
*surefire way to enter new markets—*  
*buy their way in.*

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communications company with diverse product range. The deal meant that MCI-WorldCom now controls over 50% of the U.S. Internet backbone and became the first communications company to offer local, long-distance, international, Internet, and data services, all under one brand label. MCI-WorldCom will have an Internet backbone by 2002 that will be 500 times the size of the whole Internet network today and expand MCI's presence from 31 markets to more than 100.

The acquisition of Sprint by MCI-WorldCom will add a vast network of wired and wireless services, making it a true one-stop shop.

Economies of scale and scope are clearly the driving factors in this category.

*Distribution with content.* Distribution companies need product to channel through their communication pipes. Content companies need "shelf space" for their products; distribution companies need product to carry and attract customers at the other end. GTE's 1998 acquisition of Genuity (a Web hosting service) and BigBook (an online directory service provider) strengthened its Internet presence with immediate access to content.

more, many new content-content partnerships are occurring among companies whose business involves e-commerce, as a new type of company—called "infomediaries"—tries to build up customer and supplier bases by adding more and more value. We did not consider these partnerships part of the telecommunications industry and did not include them in our study. However, we suspect that as infrastructures stabilize and are more closely aligned with content, the idea of building value will get more attention.

To better understand the objectives behind the 127 partnerships, we studied the press releases of the events to identify key objectives. But please note that these objectives were not mutually exclusive; a single partnership could involve a primary objective, as well as a number of secondary objectives, that might vary depending on the partners involved and the context of their agreements.

### **Creating New Value**

So-called pure-play alliances involve partners offering unlike but closely related products, technologies, or markets [12]. Over 50% of the 127 partnerships

involved companies in the same industrial category, although only about 33% of them involved similar products. An example of a major pure-play telecommunication alliance is Global One, which includes Sprint, Deutsche Telecom, and France Telecom, and which aims to capture international traffic. WorldCom's 1996 acquisition of MCI (at the time, the second largest U.S. long-distance operator) and MFS Communications (a provider of local service) now makes MCI a provider of a local telephone service, Internet access, and international communications through its own fiber-optic network.

So-called converging alliances involve partners that offer different products, technologies, and markets, including cellular telephones (such as radio and telephony) and the Internet (packet switching and fiber-optic cable). Such alliances appear to create more value for partners and reduce potential conflicts [12]. For example, in 1997, Microsoft invested \$1 billion for an 11.5 % stake in an alliance with Comcast, the fourth largest U.S. cable TV operator. Microsoft was looking to use cable modems to support its entry into telephony and data access into homes. Microsoft is also allied with GTE, a very large local and long-distance U.S. phone service provider, as well as Teledesic, a low-earth-orbit satellite communications network. Pending alliances involve Intel, Compaq, and five RBOCs to provide high-speed access to the Internet through DSL technology.

*Controlling technology.* About 23% of the alliances we studied are trying to create a new technology or application and control the market for it. Almost all such companies are tool companies. One especially important battleground involves control of the set-top box. These advanced boxes (see Table 1) will not only unscramble digital signals, but potentially provide video-on-demand, interactive banking, video telephony, and access to the existing content on the Internet. Cable TV companies, spurred by competition from satellite-based services and LECs are investing in technology to satisfy the growing demand for bandwidth. Despite its legal troubles (with the U.S. Justice Department) over integration of its Web browser technology and its Windows operating system, Microsoft has continued to gear up to be a big player in the future of the set-top box.

*Gaining market access.* Although the 1996 Telecommunication Act was designed to open up the local telephone market, so far it has been a regulatory disaster. Companies have found that there's only one surefire way to enter new markets—buy their way in. AT&T's 1998 acquisition of TCG gave it immediate

access to local markets as did WorldCom's acquisition of MFS Communications. Meanwhile, long-distance companies are acquiring wireless operators hoping they will enable them to enter local markets.

The RBOCs have not been idle. SBC's 1998 acquisition of SNET gave it instant access to the long-distance telephone market. About 38% of the partnerships we studied seem to focus on creating access to new markets. Many of these arrangements involve distribution and communication companies.

*Creating shelf space.* As the falling costs of telecommunication technology in turn force down the costs of information distribution, content providers have begun to view distributors, including broadcasters, cable TV companies, and others, not only as bargains, but as the shelf space they need for displaying their products. Distribution companies, seeing their services transformed into commodities, view partnerships with content providers as an important means of adding value. About 15% of the partnerships we studied fell into this category in terms of their overarching objectives.

Though we view it as a "tool" company, Microsoft has behaved like a distribution company. Its 1998 acquisition of Hotmail Corp., a Web-based email service, for \$300 million, signaled its attempt to provide a one-stop shop for tens of millions of consumers on the Internet. Starting with its existing Expedia travel service and Carpoint car-buying service, Microsoft wants to bundle services and distribute them via cable. Early steps toward this goal have involved Microsoft's effort to lure the cable industry into accepting its software technology for set-top boxes combined with its content on the Internet. Meanwhile, GTE's 1998 acquisition of BigBook gave it access to the Bigbook domain name and other trademarks, boosting its online directory services.

*Gaining economies of scale or scope.* As part of the trend toward industry consolidation, Qwest and LCI were seeking to reduce costs, increase market access, and gain synergies of scale and scope. The ISP and wireless services industries are also facing consolidation. Since 1995, Mindspring Enterprises has acquired several start-up ISPs in order to gain immediate market access and develop economies of scale. And during the same period, BellSouth, an RBOC, acquired several wireless companies in its regional market. About 24% of the partnerships we studied focused on this objective; the partners are almost always in the same industrial category.

*Preempt competition.* In light of the telcom mergers and acquisitions business trend, companies have increasingly begun to employ strategies to outrun

their competitors. For example, BellSouth's 1996 acquisition of CS Wireless and CAI Wireless made it difficult for long-distance companies to get access to local markets via wireless service providers. Similarly, partnerships focusing on controlling new technologies often pursue the corresponding objective of achieving a first-mover advantage.

**Hedging.** Because Microsoft wants to play a big role in the delivery of multiple services via cable, it acquired (in 1997) WebTV Networks, a manufacturer of set-top boxes, and plans to use its Windows CE operating system to drive the product. AT&T has also partnered with Microsoft, agreeing to use the CE operating system in its own digital set-top boxes. Moreover, in 1997, Microsoft invested another \$1 billion in ComCast in order to influence decision making in the cable industry. In light of the uncertain technology, business, and regulatory future and difficulty predicting which telecommunications technologies, products, and services will succeed in the commercial market, many companies hedge by investing in relationships with other companies just to ensure their presence in particular markets in case a technology takes off.

## Conclusion

The U.S. telecommunications market is experiencing structural changes brought about by sharply falling telecommunication costs, privatization, the Internet and its related technologies, and a web of dynamic new relationships. We've tried to give a systematic perspective on this critical industry, which might appear chaotic to the casual observer.

Within the context of the 1996 Telecommunications Act, we mapped 127 partnerships onto a framework consisting of the industry's major players. Interestingly, about 33% of the partnerships we studied involved distribution companies trying to build large infrastructures in the hopes of gaining economies of scale and scope. Communication and distribution company partnerships were also significant, given the need for distributors (especially long-distance carriers) to gain direct access to individual consumers. Similarly, content providers have been seeking distributors to obtain "closed" distribution channels for their products. The greatest amount of technological innovation follows partnerships between diverse tool providers trying to create new technological innovations; most lateral partnerships between communication companies seem aimed at providing one stop shopping for their end customers.

Overall, these partnerships seem intended to create new value, gaining primary control over particular technologies, increasing market access, creating shelf

space, achieving economies of scale and scope, preempting competitors, or simply hedging bets in a business world characterized by technological and regulatory uncertainty. All these companies appear to be scrambling to obtain and retain large bases of customers as quickly as possible, anticipating the attacks and counterattacks bound to follow the falling of regulatory barriers.

Whatever the ultimate outcome of the legal battles, arbitrage and the intensification of competition will necessitate cost-based pricing and generate enormous pressure on traditional regulated pricing. With such emerging technologies as Internet telephony, the U.S. telecommunication industry is being transformed from its historical, relatively quiet landscape of regulated utilities to the mad-dash world of software and computer manufacturing and marketing. ■

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