Telecommunications

BACKGROUND

Given how many Michiganians use and see others use computers, access the Internet, pick up a traditional telephone, and reach for a cellular phone in modern life, it is hard to remember how much has changed in the last 20 years. In 1982,

- IBM celebrated the first birthday of its first personal computer (PC), Compaq Computer manufactured the first IBM-compatible computer, and there were about 5.5 million PCs in use nationwide;
- the building block of what would become the Internet was approved, but invention of the World Wide Web was nine years away;
- AT&T had just been notified that as part of a settlement with the U.S. Department of Justice, it would be split in 1984 into separate components: long-distance (AT&T) and local (the seven "baby Bells"—the regional Bell operating companies). Michigan Bell, Michigan's AT&T subsidiary, would join with several other Midwestern states to form Ameritech; and
- the first commercial cellular telephone service began, in Chicago.

Fast forward 20 years. In 2002,

- just over half (53 percent) of Michigan residents report having at least one computer in their home, and worldwide, an estimated 34 million computers were sold in the last quarter of 2001;
- there are more than 32 million Web sites on the Internet, and nearly two-thirds of Michiganians have used the Internet at least once;
- Ameritech is now a subsidiary of SBC Communications, which itself is a combination of other baby Bell companies (Southwestern Bell and Pacific Bell) and a majority owner of Cingular Wireless; and
- communication by telephone never was easier—in 2000 Michigan had more than 3 million cellular subscribers and nearly 5.4 million traditional telephone lines.

Telephone Service

The Michigan telephone industry dates back to 1877, when an Ontonagon businessman installed a line between the Lake Superior port and his inland office. When other business owners requested a similar arrangement, the Ontonagon Telephone Company was created. Other local telephone companies were established around the state during the same year, and in 1913 Michigan legislators gave the Michigan Public Service Commission (MPSC) power to regulate the industry.

Currently, more than 94 percent of all Michigan households have a telephone, with service available from myriad companies offering either local or long-distance service. For the most part, neither the federal Telecommunications Act of 1996 nor the Michigan Telecommunications Act of 2000 has resulted in major telephone companies being able to offer customers both local *and* long-distance service. Although many Michigan

GLOSSARY

Broadband
A high-speed Internet connection. In Michigan law, "broadband" is defined as transmission of at least 144 Kbps in at least one direction by any means (a typical modem operates at 56 Kbps). Current broadband services include cable modems, digital subscriber lines (DSLs), T-1 and fractional T-1 lines, and high-speed satellite services. A broadband connection to the Internet allows more information to be transmitted per minute than with a standard modem connection. In most cases, the primary benefit to the user is that a set amount of information is transferred faster; also, being able to transit more information makes possible certain activities (e.g., videoconferencing) that are impossible or impractical with lower capacity connections.

Competitive local-exchange carrier (CLEC)
A telephone company that offers local telephone service (home or business dial tone) in direct competition to the local service provided by an incumbent local-exchange carrier (ILEC). TDS Metrocom is an example of a CLEC.

Incumbent local-exchange carrier (ILEC)
An exchange carrier that was in the local market before competition was permitted. Ameritech and GTE/Verizon are ILECs in their respective areas, which include most Michigan residents.

consumers and businesses receive a single bill for their local and long-distance calls, separate companies still provide the services.

The exhibit shows that for local telephone service, Ameritech is still Michigan's largest incumbent local-exchange carrier (ILEC). Competitive local-exchange carriers (CLECs) operate only about 6 percent of all local telephone lines. For residential long-distance service, AT&T remains the dominant provider with more than half of all presubscribed long-distance telephone lines. (The presubscribed carrier is the one to which the consumer has subscribed for long-distance service from that telephone number.)

In 2000, changes to the Michigan Telecommunications Act were enacted, including a three-year freeze on local telephone rates, elimination of a line charge that Ameritech and Verizon had been allowed to impose on their customers, and a provision that local calling areas must include all adjacent telephone exchanges—even if the exchange is in a different area code.[1] The removal of the user line charge ($3.28/line for Ameritech customers and $3.50/line for GTE/Verizon customers) has been challenged in federal court by both Ameritech and Verizon; a stay allows both companies to continue charging the fee pending the litigation outcome. Much of the revised act will expire in 2005, requiring the legislature once again to update the law.

Also in 2000, Ameritech was faced with a host of complaints, predominately about installation and repair delays. The Public Service Commission received nearly 21,000 complaints from Ameritech customers, a 28 percent increase over the prior year. By mid-year Ameritech admitted to taking too long to respond to the average nonemergency repair request, and by year-end had committed additional financial resources, hired additional line-repair staff, and entered into a settlement with the MPSC that includes awarding financial credits to customers for installation and repair services not provided within a specified period. By mid-2001 Ameritech reported almost 24,000 fewer outstanding installation and repair orders than in mid-2000 and had cut the average wait for repairs from 66 hours to 31 hours.

Readers interested in a fuller discussion of local telephone service are referred to *Michigan in Brief, 6th Edition,* which may be found on line at *www.michiganinbrief.org*.

[1]Since 1998 Michigan has been assigned three new area codes *(231, 586,* and *989*) and is slated for two more (*269* and *947*) in 2002. When fully operational, Michigan will have 12 area codes (10 discrete regions and two that overlay others).

Local and Long-Distance Market Shares, Michigan, Selected Years

Provider	*Year and Percentage of All Lines*	
Local Service	2000	1997
Ameritech	78.2%	82.4%
GTE/Verizon	11.7	10.9
Independent companies[a]	3.6	3.5
Competitive local-exchange carriers[b]	6.5	3.1
Long-Distance Service	1999	1996
AT&T	65.4%	62.7%
MCI/Worldcom	14.7	16.8
Sprint	5.6	6.2
All others	14.4	14.2

SOURCES: Michigan Public Service Commission (for information on local service); FCC Common Carrier Bureau (for long distance).
[a]*Some areas in Michigan are served by an incumbent local telephone company other than Ameritech or GTE/Verizon; these are independent telephone companies.*
[b]*Competitive local-exchange carriers compete against the incumbent local carrier, whether that carrier is Ameritech, GTE/Verizon, or an independent.*

Internet Access

People are accessing the Internet in increasing numbers. In a 2001 survey conducted for Cyber-state.org, a Michigan-focused information-technology advocate, almost two-thirds of respondents (63 percent) reported that they had used the Internet at some point; this was an 11 percent increase from 1998.

Statewide, however, the Internet is neither equally accessible nor equally accessed. Wide variations in computer ownership and Internet use exist by region, age, race, education level, and income—this is the so-called *digital divide*.

- Of those younger than 25 years, 91 percent report having been on line; of those aged 65 and older, just 22 percent.
- In the City of Detroit and northern lower Michigan, fewer than half of the residents have a computer in their home.
- As education increases, so does PC ownership: Among residents with less than a high school education, 19 percent own at least one computer; among those with a college education, 51 percent own at least one. And the difference in Internet access between the least and most educated Michiganians is vast: Among those not graduating from high school, only 35 percent re-

port having been on line; of those with a college degree, 88 percent have been.

In late 2001 the governor announced a plan to speed deployment of high-speed Internet access statewide. He believes that high-speed Internet access (that is, faster and with more capacity than is possible with a traditional modem) is necessary to the state's continued economic growth. In support, the Michigan Economic Development Corporation released an analysis of what a statewide, high-speed Internet infrastructure would mean for Michigan: According to the Gartner Group, implementing the governor's plan to create a system for high-speed Internet access will, by 2010, (1) generate nearly a half-million additional jobs over and above the normal job growth rate, (2) increase high-speed Internet use from the expected 20 percent to 50 percent, and (3) increase gross state product by $440 billion, reflecting the value of additional goods and services that are made possible by the advanced infrastructure.

DISCUSSION

Michigan policymakers operate under several constraints in influencing public policy surrounding both telephones and the Internet. A great deal of telephone policy is in the hands of

- the federal government (via the federal Telecommunications Act of 1996);
- the Federal Communications Commission (FCC); or
- state and federal court rulings on lawsuits that have arisen from both the 1996 act and the FCC's subsequent rules and regulations to implement it.

Much of Internet policy is in the hands of

- major corporations that provide either content (e.g., AOL Time Warner) or infrastructure (e.g., WorldCom);
- international commissions/consortiums (e.g., the Internet Engineering Task Force and the Internet Corporation for Assigned Names and Numbers); and
- Internet users themselves (in the choices they make).

In addition to government and legal constraints, policymakers at all levels are faced with the rapid pace of technological change. In the 18 years from 1982 to 2000, for example, the United States went from a handful to 101 million cellular telephones; 22 million were added from 1999 to 2000 alone.

Policymakers also face the phenomenon of *convergence*—that is, when, over time, separate devices begin integrating features of other devices. Today, for example, one can make a long-distance call from a computer, receive e-mail on a cellular phone, and browse the Web using a handheld computer or PalmPilot.™ Policymakers are faced with deciding which—or all—of these devices is a computer (or a telephone), to say nothing of whether the rules should be different if the computer is used to make a local versus a long-distance phone call.

Telephone Service: Creating Competition

One arena where Michigan policymakers do have influence is in creating a competitive environment for local telephone service in the state. Ameritech continues to dominate local service, and its competitors sometimes complain that Ameritech is not timely in responding to their requests for installation of equipment and lines or access to the Ameritech network. In early 2002 the MPSC agreed, finding that Ameritech was violating several provisions of the Michigan Telecommunications Act that require the company to give competitive local providers full access to the company's network. The case is pending before the commission. In addition, Ameritech's parent company, SBC Communications, has been fined $6 million by the FCC for not meeting conditions set forth in the regulatory approval to merge with Ameritech in 1999. To date, SBC Communications has been fined more than $59 million by the federal government and, for violations similar to that found by the MPSC, assessed more than $43 million in penalties by the five Ameritech home states.

Work continues at both the state and federal level to enforce, interpret, or rewrite the guiding telecommunications laws. In Michigan, HB 4764 has been introduced to separate the local telephone operations of any phone company having more than 250,000 lines (currently only Ameritech and Verizon) into *wholesale* and *retail* divisions. The wholesale division would provide and maintain the physical network, while the retail division would sell directly to consumers and businesses. The intent of "structurally separating" the operations of incumbent telephone providers is to remove an incumbent provider's incentive to resist competition: If a wholesale entity receives its revenue from a number of companies that deal directly with consumers, it is in the wholesaler's best interest to treat all retail companies the same. Proponents of structural separation also believe that it would be easier to monitor and analyze separate business entities.

Critics of structural separation point out that it is hard enough to monitor incumbent providers when these functions are combined, and they fear that having separate wholesale and retail functions would allow incumbent

providers to become less "transparent" by hiding transactions in both divisions. In addition, HB 4764 would require that at least 20 percent of the retail company's stock be traded separately from the wholesale company's stock, meaning that 80 percent still could be held by the incumbent provider. Despite legislative intent, incentives would remain for the wholesale company to treat its largest retail customers favorably, which means that competitive local providers still could have unequal access to the telephone network. Finally, in the long run, structural separation may not matter for Michigan consumers or businesses because of the growth of alternative local telephone service provided by cable television and cellular telephone companies.

Creating a High-Speed Internet Infrastructure

As mentioned, in late 2001 the governor introduced a plan to speed deployment of Michigan's broadband infrastructure. The governor noted that (1) in the growth rate of broadband lines, Michigan ranked 24th in the nation in 2001, and (2) in per line investment by incumbent local-exchange carriers, the state was dead last in both 2000 and 2001. The governor's plans are set out in Public Acts 48–50 of 2002.

- A new office—the Michigan Broadband Development Authority, housed in the Department of Treasury—is created to issue tax-exempt bonds to telecommunications companies. The authority is patterned after the Michigan State Housing Development Authority, which offers incentives to developers to create affordable housing in Michigan.
- The new authority may issue bonds for all facilities, telecommunications hardware and software, and intellectual property necessary to deploy broadband Internet access throughout the state.
- A statewide policy on municipal rights-of-way is to be established and oversight provided through a new, separate authority (Metropolitan Extension Telecommunications Rights-of-Way Oversight Authority), housed in the Michigan Department of Consumer and Industry Services.
- Telecommunications providers are required to obtain a right-of-way access license for a one-time $500 fee and to pay the rights-of-way authority an annual fee of 2¢ per foot until March 31, 2003, and 5¢ per foot thereafter. The fee is 1¢ per foot for cable television providers.
- Companies are permitted to claim a tax credit equal to 6 percent of eligible expenditures for placing new broadband lines into service that operate at speeds of at least 200 Kbps in both directions (sending and receiving).

Proponents of these measures believe that the slow pace of broadband rollout in Michigan was a growing liability for attracting and retaining new businesses in the state. Major state initiatives—e.g., the $1 billion life-sciences corridor and a statewide economic-development focus on advanced manufacturing—rely on businesses having widespread access to high-speed Internet services. Supporters point out that if broadband access in the state were to continue to be sporadic, with adjoining townships unable to receive high-speed service at all or at affordable rates, then businesses would face a huge hurdle in selecting sites that will enable them to expand.

The legislation's opponents believe that the governor's statistics are flawed. While granting that Michigan's broadband *growth* rate is in the middle of all states in the nation, several telecommunications companies also point out that Michigan is 11th in the United States in the total number of providers of high-speed lines. In addition, some opponents argue that given the high quality of the existing public-telephone network, the low per line investments by incumbent local-exchange carriers shows the economies of scale in Michigan—the per line cost to wire a home in Michigan, one of the more densely populated states, simply is less than it is in the more rural states. Critics also question whether broadband deployment has been as slow as the governor believes. The Telecommunications Association of Michigan, for example, notes that one-third of all rural telephone exchanges had broadband access at year-end 2001, and nearly two-thirds (58 percent) expect it by year-end 2002.

Consumer Internet Demand and Concerns

Others who are skeptical of the broadband initiative ask whether Michigan consumers and businesses need high-speed Internet access at all. A survey conducted in January 2002 by the Cyber-state.org policy group finds that 70 percent of Michigan residents understand little about broadband, even in southeast Michigan where it is widely available. Telecommunications providers have made similar observations, noting that even where they offer high-speed Internet service, few customers sign up.

While supporters agree that high-speed Internet is not well understood today, they believe this will change in the next few years as new services emerge. For example, today many consumers are able to send an e-mail to a health care provider's office, but their simple modem will not permit them to have an on-line consultation with the provider that includes sending or receiving diagnostic materials (e.g., EKGs, x-rays). Supporters believe that if broadband

access cannot be speeded to all locations in the state, Michigan will lag behind the nation in the proportion of residents and businesses that can take full advantage of future Internet-based services.

Bridging the Digital Divide

As mentioned, there is considerable variation in the extent to which Michiganians have access to and use computers and the Internet. As new and expanded services and devices are introduced into the marketplace, either through invention or convergence, Michigan policymakers will be asked to figure out how to make sure all citizens have access to these devices.

Part of the problem in addressing the digital divide is that the divide itself may be characterized in many ways—by age, employment, education, and so on. For example, it has been proposed that computers be provided to libraries to help give Internet access to low-income residents, but this does little unless there also is money to (1) train people to use the computers and (2) maintain and regularly upgrade the equipment and software. Similarly, policies to increase computer use in K–12 classrooms does not help older Michigan residents who have lost their jobs due to technological change or are timid about using new technology and devices.

In some cases, however, the rapid pace of technological change can work to the advantage of policymakers. As Internet access via cellular telephones increases, the Internet will reach a segment of the Michigan population that currently does not have a computer at home. In addition, as cable television and satellite providers deploy broadband Internet access, consumers and businesses will not be as reliant for access on the incumbent telephone carriers.

See also Consumer Protection.

FOR ADDITIONAL INFORMATION

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