ecom-ohio

www.ecom-ohio.org

Assessing Ohio's Readiness for Global Electronic Commerce

2002 Prepublication Digital Report

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statewide steering committee

We wish to thank the members of the ECom-Ohio Steering Committee, whose untiring efforts have brought ECom-Ohio to fruition.

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technology policy group
An OSC Initiative
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Technology Policy Group
1224 Kinnear Road
Columbus, Ohio 43212
(614) 292-9220

ECom-Ohio Vision

ECom-Ohio's vision is to establish Ohio as a recognized leader in global electronic commerce throughout business, government and society.

ECom-Ohio Mission

ECom-Ohio's mission is to promote action by business, government and citizens to achieve this vision, and to measure and communicate Ohio's progress in doing so.

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Dear Friends,

This report culminates the work of ECom-Ohio, a unique statewide leadership initiative to measure Ohio's readiness for global electronic commerce. It is clear that the transforming revolution promised by the ubiquitous presence of e-commerce tools in traditional industries is a long-term struggle. Changing company culture to adopt new technologies more quickly and effectively takes time. Here in Ohio, our progress in transforming our economy using new e-commerce tools is significant.

ECom-Ohio data reveals a very positive change in sophisticated adoption and growth levels of e-commerce applications and business use in Ohio. Last year, Ohio trailed the Midwest region in terms of computer and website usage. This year, the state has moved to first in the region, with growth rates above the national average in many areas. In the past three years, the state has moved from "below average" in using and adopting e-commerce technologies, to meeting or exceeding national averages. This is indeed impressive.

ECom-Ohio's work over the past three years also shows significant improvement in the number of Ohio citizens and businesses with access to broadband services. Today, 84% of Ohioans have access to advanced telecommunications services. Although disparities still exist between Ohio's rural and urban areas, Ohio's rural regions, when compared to many neighboring states, are much more "connected" with respect to broadband services. This is significant and exciting news! Ohio's citizens and businesses must take advantage of this high level of connectivity if we expect to capitalize on this competitive advantage for Ohio.

Ohio's progress is further validated by other measures. In 1999, the ECom-Ohio Steering Committee was galvanized into action by a study that ranked Ohio 35th among the states in its ability to transform its economy. This year, Ohio ranks 16th in the nation, with extremely high scores for technology use in manufacturing, schools and government, as well as broadband telecommunications coverage.

Using industry benchmarks developed by the Computer System Policy Project (CSPP), ECom-Ohio has demonstrated a robust model applicable to other states and the nation. In fact, this model will provide the basis for establishing NetMap USA, a national center for e-commerce assessments, where the CSPP tool will be revised and updated regularly.

We urge you to take a look at the number of E-Commerce Pioneer Award winners whose innovations and products are shown throughout this report, and to learn more about the successful implementation of e-commerce tools by visiting our website at www.ecom-ohio.org. Our award winners' dedication to quality, the highest standards and innovation are a tribute to the ongoing renaissance of Ohio's industrial dominance as our state transforms its traditional sectors of strength.

Sincerely,

Rod Chu
Chancellor, Ohio Board of Regents

Lars Nyberg
Chairman and CEO, NCR Corporation

Ohio's Fast Lane to the Internet

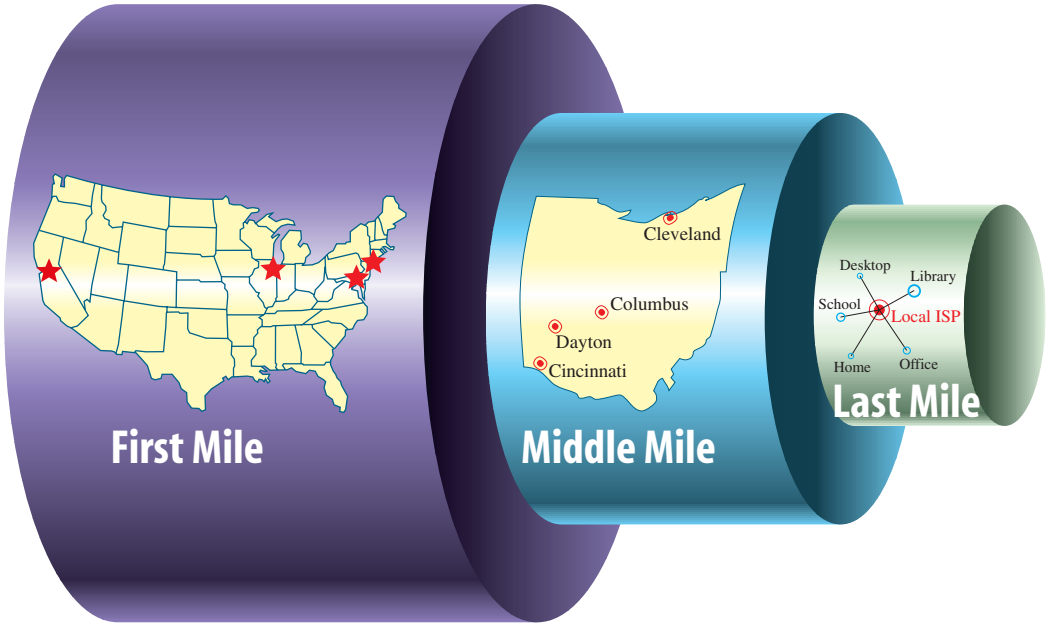
Ohio's network infrastructure is its building block for the New Economy. Network infrastructure is as critical to Ohio's competitiveness in creating and retaining jobs as sewer lines or road improvements. Through ECom-Ohio and numerous other efforts, Ohio has been a leader among states in exploiting its advanced network services to create jobs and foster entrepreneurship.

Ohio's extensive connectivity infrastructure makes it one of the best connected states in the nation. Ohio is one of only six states nationwide with four "cyber-cities" — Columbus, Cincinnati, Cleveland and Dayton. However, Ohio's non-urban areas continue to lag behind urban areas in the robustness, redundancy and reliability of their telecommunications services, although they compare favorably to rural areas in neighboring states. Since the inception of ECom-Ohio, Ohio's network connectivity increased by an average of 200% per year overall. Twelve new cities now have network connectivity capacity of 45 Mbps or more, and over 100 new connections have been made throughout Ohio.

Ohio has made great strides in implementing regulatory and programmatic responses to boost its network economy. The Public Utilities Commission of Ohio (PUCO) as taken leadership by adopting regulations to incentivize quick deployment of advanced data and communications services throughout the state, especially in distressed areas. The Governor's Office of Appalachia, with funding from the Appalachian Regional Commission, is coordinating Access Appalachia (www.accessappalachia.org), a project to develop an infrastructure advancement plan for Ohio's Appalachian region. The Ohio Department of Development (ODOD) commissioned a study to address this issue in other rural areas of Ohio.

Ohio's Information Infrastructure

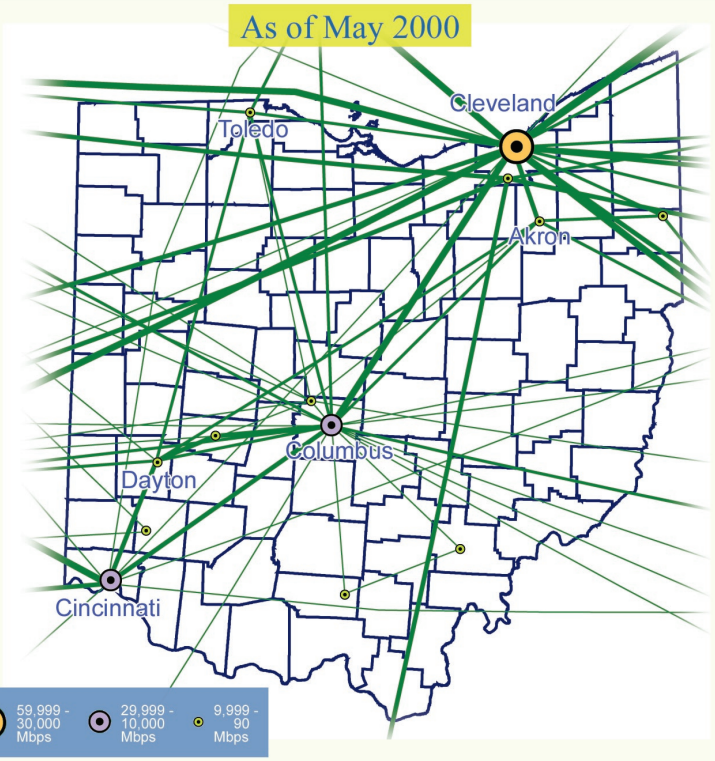
Ohio's Information Infrastructure has three components. The "first mile" consists of the global infrastructure that links major network access points in the U.S. (Chicago, New York, Washington) to global internetworking points worldwide. The "middle mile" is also called Ohio's primary Internet network. This network connects Ohio's nearly 300 Internet Service Providers (ISP) and major virtual private network links to the "first mile" global commodity Internet. The "middle mile" has grown significantly over the past year, as shown on Page 5. The "last mile" is the mile that connects every desktop, home, school and office to their local ISP for Internet connectivity. Bringing fast connections at broadband speeds to every Ohio home and business will ensure that all of Ohio's citizens and businesses have access to the Internet at the speeds, quality and quantity that they need and desire.

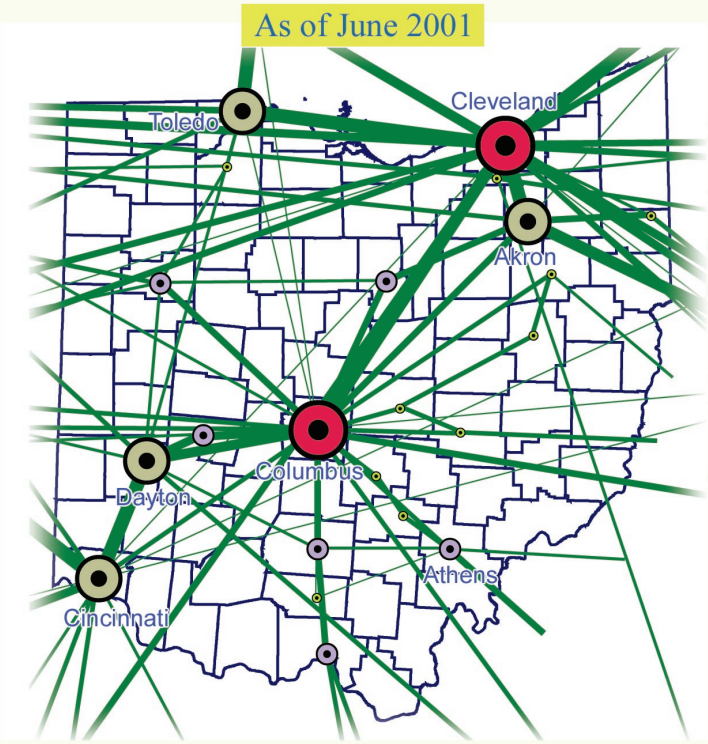


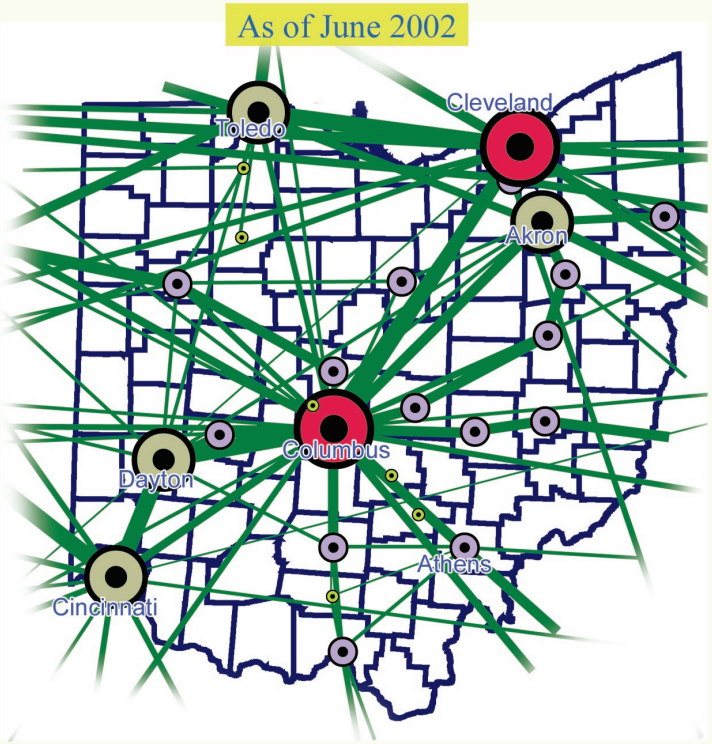
Ohio's Network Infrastructure Growth (2000-2002)

Ohio's Middle Mile

Ohio's "middle mile," or primary network backbone, has experienced tremendous growth from 2000 to 2002. Twenty-five Ohio cities, representing almost 400 connections to the global commodity Internet, have grown in capacity by over 100% from 2000 to 2002. Ohio's number of Internet points of presence has increased this year in cities like Findlay, which are lowering advanced telecommunications services fees associated with distance charges.







Cities with over 100% growth in capacity 2000 - 2002

24	Akron 77794	44	Cincinnati 81577	1	Findlay 155	2	Newark 20000
8	Athens 25620	97	Cleveland 188191	2	Lancaster 5000	10	North Royalton 25000
3	Bowling Green 465	71	Columbus 140165	10	Lima 25930	6	Portsmouth 10310
2	Cambridge 20000	26	Dayton 61305	2	Logan 5000	6	Springfield 24710
5	Canton 22810	4	Delaware 10310	2	Mansfield 19865	31	Toledo 74131
10	Chillicothe 15930	2	Dublin 1244	6	New Philadelphia 25310	12	Youngstown 12174
						3	Zanesville 20000

# of Connections and Total Bandwidth in Mbps for each city

Ohio's Last Mile

Despite a turbulent telecommunications marketplace, Ohio's strong network growth is fueling business expansion, new markets and startups. Metropolitan areas throughout the state are well served with a variety of broadband services, such as xDSL, cable and even some wireless access. Even in the state's rural areas, broadband coverage is beginning to connect the smallest communities.

Ohio businesses use a wide variety of methods to access the Internet. Figure 1 shows the method by which they chose to access the network. Today in Ohio, 54% of businesses and over 75% of citizens who access the Internet still rely on dial-up connections. However, as shown in Figure 2, Ohio businesses have become less dependent on dial-up modems over the past three years.

Ohio's use of DSL technologies is significantly lower than our survey shows nationally, although that gap is closing quickly, demonstrating the telecommunications providers' impact in Ohio. Ohio cable providers have been quite aggressive in rolling out cable modems, pushing Ohio ahead of national averages in deploying cable modem services.

Broadband Technology Usage Indicators

Use of established broadband technologies varies significantly by size of company, as shown in Figure 3. Large companies rely more heavily on T1 and other direct connections to the Internet. Small firms typically depend on dial-up modem service. However, in comparison to national averages, a greater proportion of medium and large Ohio firms use DSL and cable modem service versus the national firms surveyed.

Ohio companies aggressively use broadband technologies, especially when deploying more sophisticated uses of the Internet in their businesses, such as implementing Electonic Data Interchange (EDI) or Business to Business (B2B) applications. National statistics reflect the same phenomenon—companies using broadband rely on it to power innovative e-commerce applications.

Figure 1

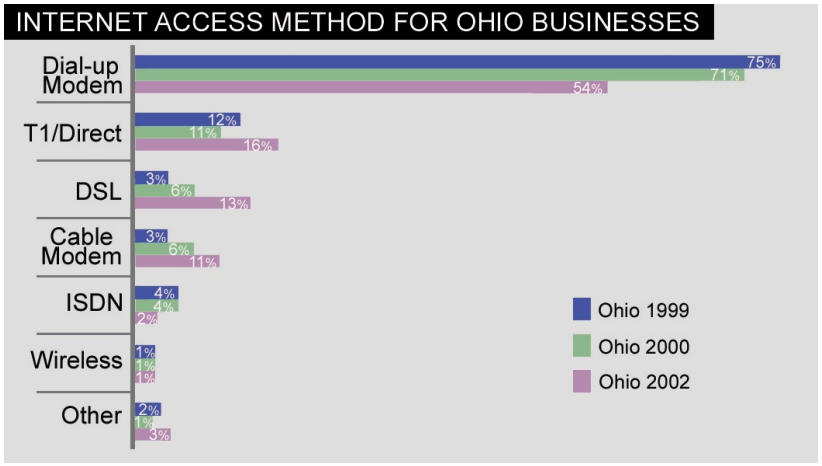


Figure 2

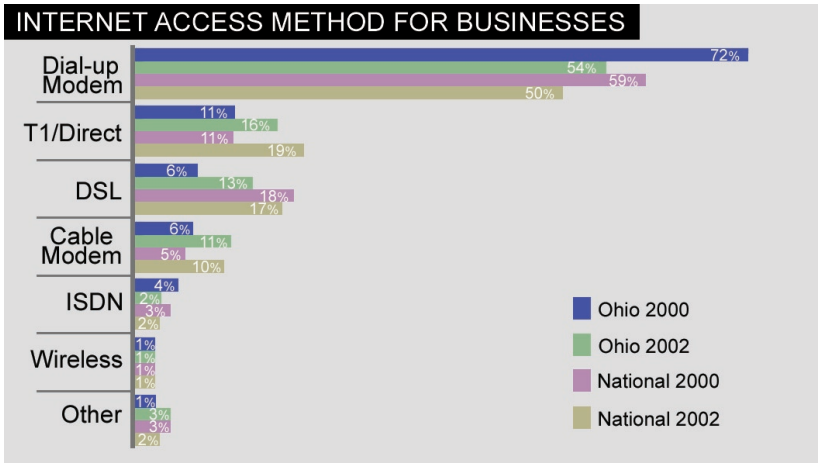
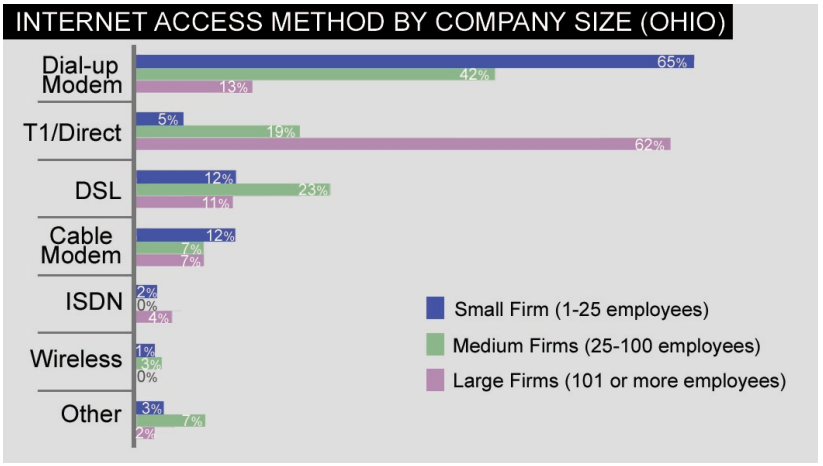


Figure 3



What is broadband and why is it important?

Broadband services refer to very high speed Internet connections. They are important because many new web-enabled tools and applications require high speed connections for the application to work. Strong levels of broadband access will draw more customers online and allow them to participate in online technologies at a more robust and satisfying pace than using dial-up services. Experts understand that the use and sophistication of Internet technologies increases exponentially when individuals have access to broadband technologies. Broadband services can be provided through a variety of technologies, such as DSL, cable or wireless satellite.

Ohio's cable industry has one of the most aggressive broadband deployment schedules in the nation. Ohio's private sector investments in DSL have raised the bandwidth bar statewide.

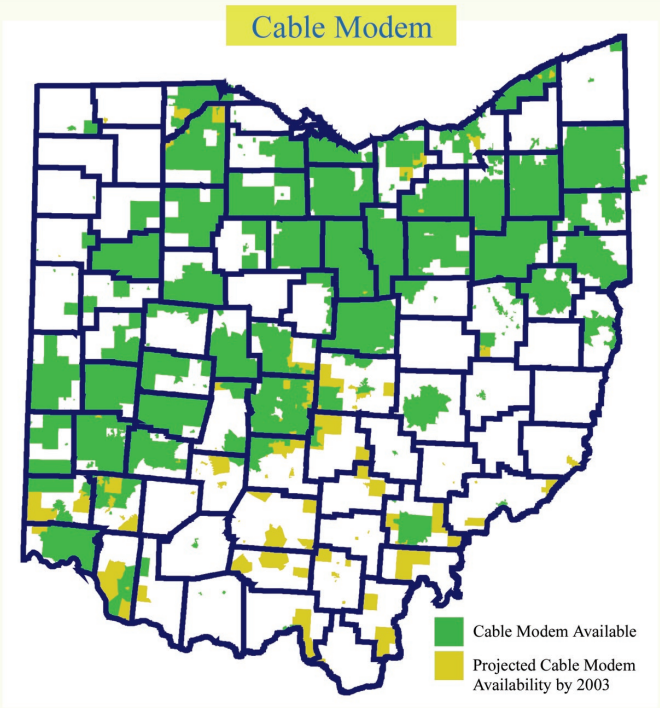
ECom-Ohio Goals for Ohio's Network Infrastructure

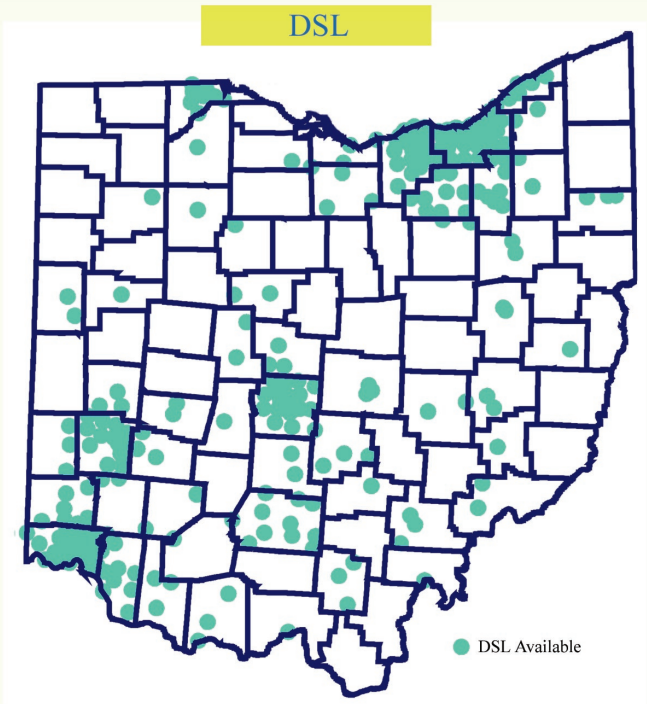
In 1999, ECom-Ohio set aggressive goals for broadband coverage statewide. In 2000, 63% of Ohioans lived in areas where some type of broadband was available, mainly in or around urban centers. Today, 84% of Ohioans have access to broadband, including many in previously unserved rural areas. New investments and promising technologies, including wireless, are likely to push this percentage even higher next year.

Wireless Technologies

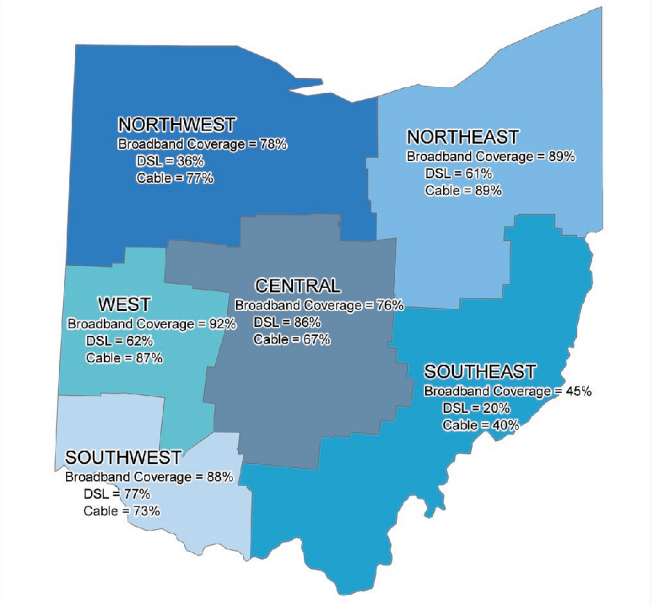
New wireless technologies are increasingly being used to bring broadband Internet access to remote areas and link neighborhoods, corporate campuses and other areas. Several Ohio companies, such as Airpath Wireless and Horizon Chillicothe Telephone, have been in the forefront of developing cost-effective ways to deploy wireless technologies for broadband Internet access.

Ohio's Broadband Availability 2002

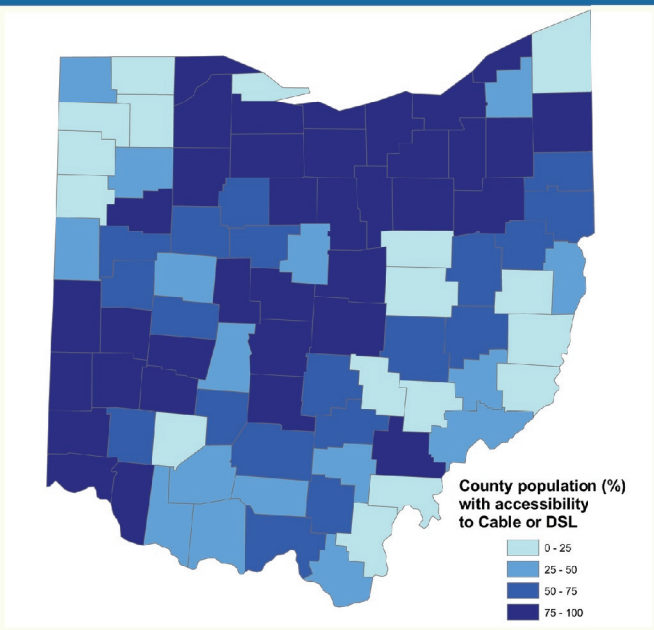




Population Accessibility to Broadband Service by ECom-Ohio Region as of May 2002



Population Accessibility to Broadband Service by County as of May 2002



Business Online

Ohio business use of the Internet and web technologies has grown significantly over the past two years. While Ohio's performance lagged behind industry forecasts last year, ECom-Ohio national survey data indicates that Ohio businesses are catching up. Comparing the average age of business websites in Ohio and the nation shows that Ohio firms are about a year behind their national counterparts in moving onto the World Wide Web. Many observers attribute this to Ohio's dominance in manufacturing, but ECom-Ohio data shows that firms in the manufacturing sector adopt these technologies as quickly as those in the service sector.

Ohio businesses are about average in terms of computer utilization and sophistication level of everyday business applications, although the state's more urban regions have access to and are using the technology more aggressively. Over the past three years, Ohio has made steady progress in using and adopting e-commerce technologies.

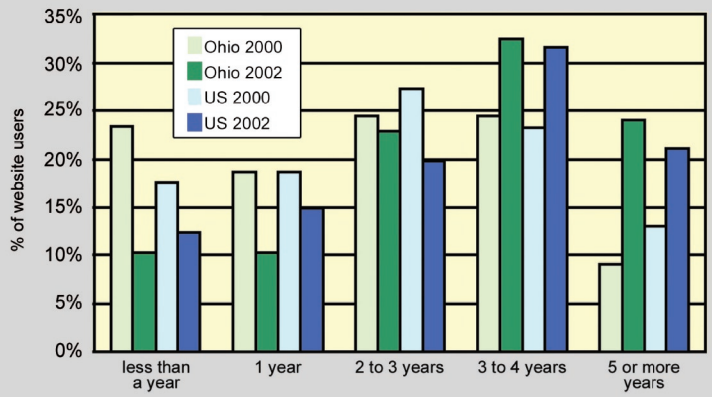
Moving to e-commerce and web-enabled technologies has improved productivity at the majority of firms using these tools. Most savings result from improved employee communications and faster response times, as well as inventory savings. Companies with more intense website use and B2B tools tend to use more broadband services. These high bandwidth users, however, are concentrated in larger firms.

Tremendous barriers still remain to boosting customer and retail Internet usage. Key issues include Internet sales taxes and privacy. Nearly 70% of businesses agree that a uniform Internet sales tax policy, consistently applied across all states, is the only way to avoid the burden Internet sales taxation would place on their firms. Privacy and security issues continue to concern Ohio's citizens and provide the single most critical barrier to increased interactive Internet use at home. Nearly 50% of Ohio businesses and citizens are concerned about the impact the Internet has on their privacy and security.

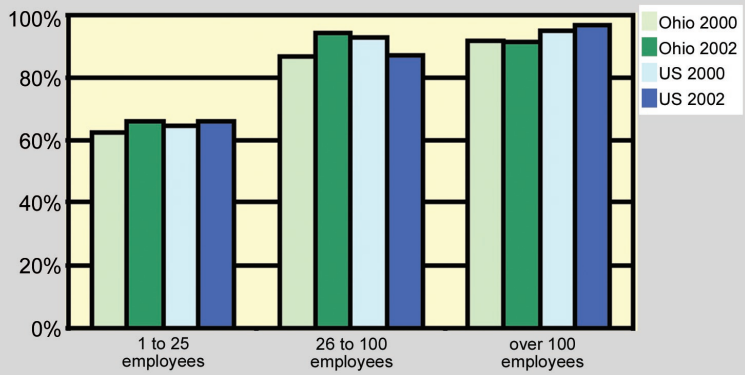
Privacy2002 - Information, Security & New Global Realities
September 24-26, 2002
Wyndham Hotel, Cleveland, OH

Technology Policy Group (TPG) annually hosts one of the top privacy and security conferences in the world. To learn more, please visit www.privacy2000.org/privacy2002

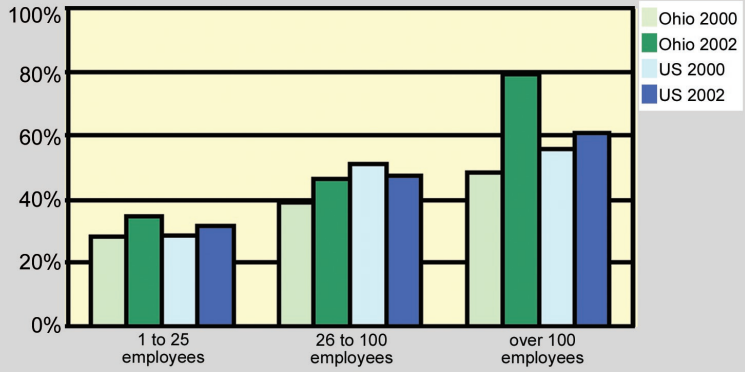
WEBSITE AGE (OHIO VS. NATIONAL)



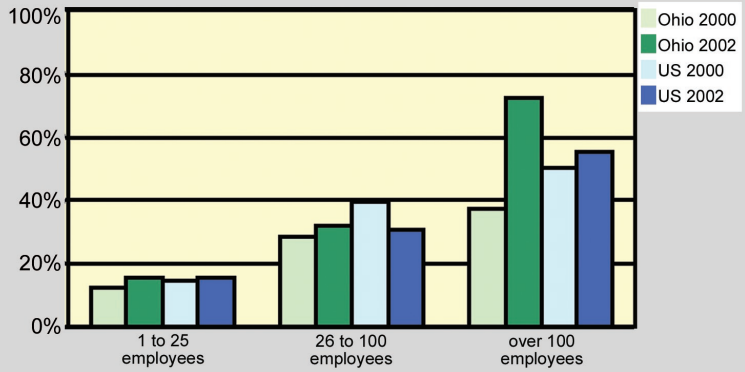
COMPUTER USE BY COMPANY SIZE (OHIO VS. NATIONAL)



INTERNET USE BY COMPANY SIZE (OHIO VS. NATIONAL)



WEBSITE USE BY COMPANY SIZE (OHIO VS. NATIONAL)



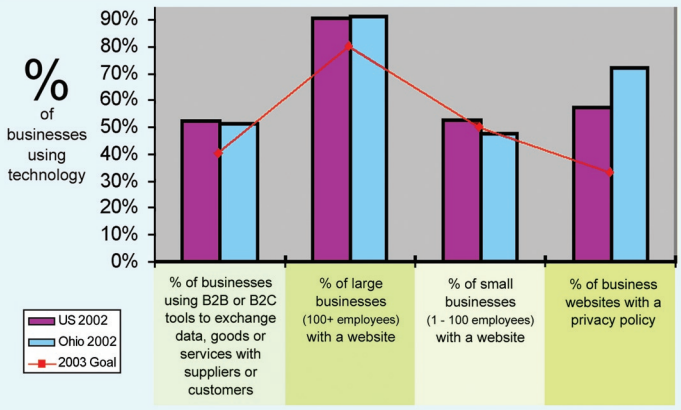
A Revolution in E-Commerce

Given the preponderance of small- and medium-sized businesses in Ohio, the true revolution in e-commerce tool usage will occur when we can achieve significant penetration in those companies. To draw attention to this need, ECom-Ohio set an agenda to help deploy e-commerce startup courses in many of Ohio's chambers, associations, small business development centers and training channels. In Ohio today, there are hundreds of courses and seminars being offered to help businesses get online, demystify the technology of business-to-business commerce, and assure that businesses have the tools they need to remain competitive.

ECom-Ohio Goals For Online Business

For Ohio to be a strong competitor in the New Economy, businesses must adopt and use e-commerce and B2B tools at a pace that is competitive with national performance. In 1999, ECom-Ohio's Steering Committee set goals for businesses to achieve in moving their operations online and accelerating their pace of adopting technology in this critical area. As shown in the accompanying graph, Ohio businesses have either met or exceeded these goals. Most gratifying is that Ohio businesses have become even or ahead of national averages in using technologies, deploying B2B or Busines to Consumer (B2C) tools, and using privacy policies on their websites. This is an outstanding achievement for Ohio businesses.

ECOM-OHIO GOALS FOR ONLINE BUSINESS



NetMap USA

Technology Policy Group is establishing NetMap USA to provide objective, accurate data on the deployment rate, buildout and usage of broadband Internet infrastructure throughout the U.S. NetMap USA will create a national clearinghouse of data and best practices for network readiness assessments, infrastructure information, and broadband deployment. It will also include advanced usage areas based upon mapping data developed by TPG in coordination with other states, and updated by the continually evolving CSPP "Guide to the Networked World." This tool will enable states, regions, counties and municipalities to perform self-assessments in a number of critical areas, and measure their progress against peers and competitors.

NetMap USA will collect and disseminate crucial broadband data to help public and private sector leadership build communities into full-fledged members of the networked world. Information infrastructure will be mapped at the level of detail required to help local political and economic leadership and policymakers understand the rank and capacity of their local network and broadband marketplace.

To see how Ohio firms are utilizing e-commerce tools to transform their businesses and be more competitive, please see the ECom-Ohio E-Commerce Success Stories section on this disk.

Ohio Citizens Online

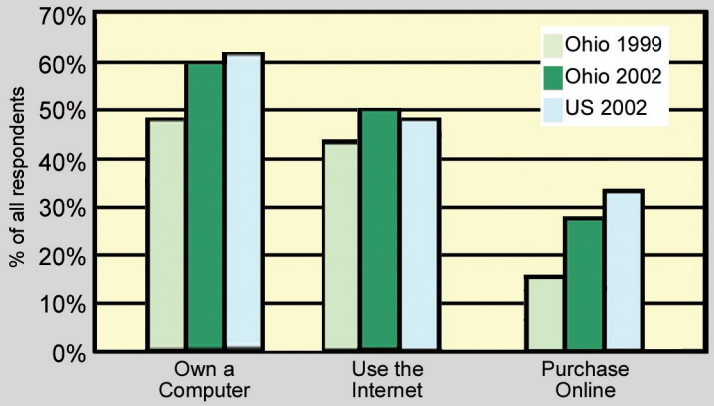
Ohio citizens' Internet usage has improved significantly since 1999, the first year of ECom-Ohio. Sixty percent of Ohioans have home computers and 50% use the Internet. Significant gains are being made across all Ohio regions in the areas of computer ownership and usage. The Southeast region, which reported the lowest levels in 1999, now reports levels similar to those found in urban and suburban Ohio. Ohioans remain around the national average in computer ownership and use, and progress is being made at reducing Ohio's regional disparities. Further, while inequities still exist, the stark differences we observed in 1999 related to race and income are steadily declining.

Ohioans' pattern of purchasing goods and services via the Internet is similar to households nationwide. Ninety percent of Ohio households purchased the same amount or more online this year, compared to last year. The majority of those who shopped online made several purchases during the year. Eighty percent of purchases online remain at or below $100. More than 50% of those surveyed indicated that the absence of sales tax on Internet purchases had no impact on their purchase decisions.

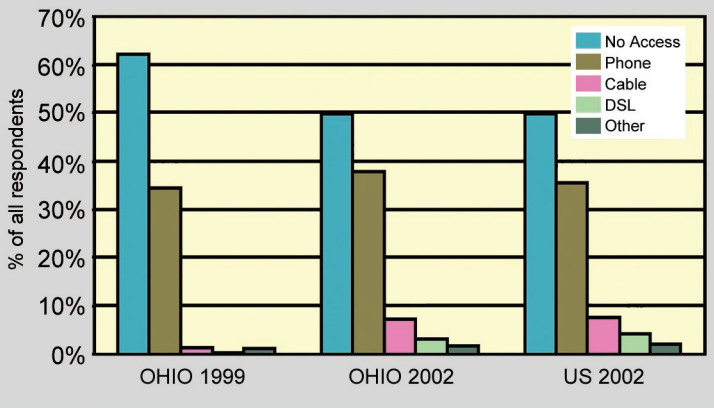
Internet privacy and security issues remain a high priority with most citizens. When asked to indicate their preference, more than 80% of citizens favored an "opt-in" privacy policy, in which they must give the vendor permission to use their personally-identifiable information. Ninety percent of those surveyed indicate that privacy policies have some or a great deal of impact on their vendor choice.

Government is proving to be a major leader in enticing people online and providing e-government services to citizens. Both nationally and in Ohio, an increasing number of citizens are turning to the Internet to access government services. A majority of Internet users have browsed government sites for information, and are willing to access government services online if they are available. About 25% of Internet users have used a government service online.

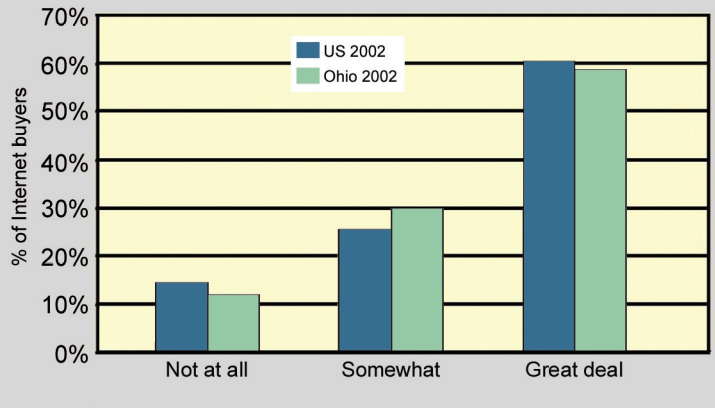
OHIO CITIZEN TECHNOLOGY USE (OHIO VS. NATIONAL)



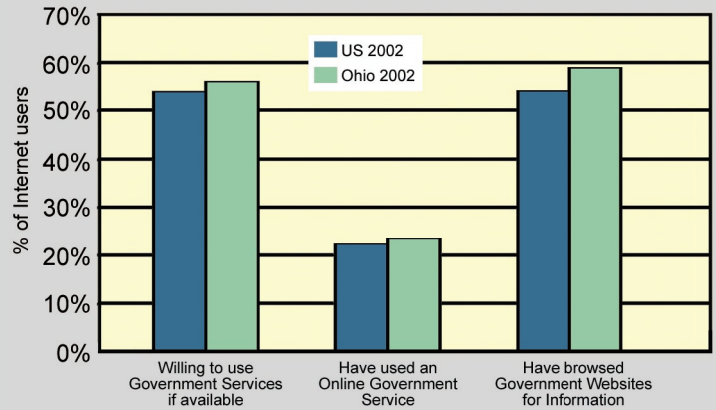
CITIZEN INTERNET ACCESS METHOD (OHIO VS. NATIONAL)



PRIVACY POLICY EFFECT ON VENDOR CHOICE (OHIO VS. NATIONAL)



USE OF GOVERNMENT ONLINE SERVICES (OHIO VS. NATIONAL)



ECom-Ohio: Concrete Progress, Concrete Outcomes

ECom-Ohio has met its goals. It has demonstrated Ohio's leadership in e-commerce assessments, reached a significant national audience and made Ohio a nationally-recognized center for e-commerce applications in key markets. As we enter the coming period of business uncertainty and disarray in the telecom and broadband markets, ECom-Ohio — by providing solid leadership, backed by objective, reliable and useful data — will remain important to the future of Ohio and the nation. ECom-Ohio will continue to keep Ohio in the forefront of e-commerce innovation and bring together leaders in the telecommunications industry, business users, regulators, economic developers, and technology and university leaders to discuss and debate the impact of e-commerce on Ohio's economic future. ECom-Ohio will continue to play a constructive role in advocating new state policy, programs and initiatives for Ohio's technology advancement.

Planning and development for ECom-Ohio was initiated in 1998, a time when the general terms, requirements and parameters of the e-commerce driven economy were unfamiliar to many businesses, legislators, and government leaders in the State. Today, because of much of ECom-Ohio's work, as well as the torrid pace of change in the economy, this is no longer true. Additionally, the state recognized the need to develop policies to promote and encourage adopting these technologies. These efforts resulted in implementing numerous programs and initiatives. ECom-Ohio is proud to have been a part of many different initiatives designed to promote Ohio's position in our changing economy.

tpg

Technology Policy Group tackles the legal and policy challenges of the emerging networked world — a world where high performance computing and networking will spur global electronic commerce in ideas, information, goods and services.

This networked world holds the promise of transforming our economy, society and government in many ways. But as we move to a digital society, barriers to new definitions of privacy, individual rights, customers, markets and borders need to be overcome.

TPG is a recognized authority on real-world solutions to critical emerging technology policy issues. A hallmark of TPG's approach is its relentless focus on action and concrete results.

Example Projects

- Training programs for small businesses developed and offered through multiple channels of distribution (ODOD, Chambers, IT Alliances, Edison Centers, Ag Extension Service)
- E-government initiatives to put state applications online (ODAS)
- Loans for information technology equipment purchase (ODOD)
- Funding for e-commerce skills upgrades (ODOD)
- E-Commerce curriculums at universities and community colleges (BOR)
- E-Commerce Legislative Day, which recognized e-commerce innovators in Ohio, and educated over 300 legislators and staff on e-commerce issues
- Centralized lobbying and presence in legislature on e-commerce and technology issues (E3 Ohio)
- Implementing alternate regulation to provide incentives for greater DSL buildout in rural areas (PUCO)
- Develope local plans to aggregate bandwidth demand to lower overall network costs for business (Findlay, OH)
- BroadbandLinkOhio, an effort modeled on VirginiaLink to provide lower cost connectivity to businesses across the state (ODOD)
- Access Appalachia, an initiative to develop a blueprint for network advancement in Appalachian Ohio, with four key recommendations (GOA)
- A Third Frontier Innovation Network, a high-speed network connecting Ohio's research universities (OBR)
- Nerely 100 expected entries to the ECom-Ohio Pioneer awards program for innovative Ohio e-commerce applications (ECom-Ohio)
- A national selection committee to judge ECom-Ohio Pioneer awards, bringing Ohio recognition as a leader in innovative e-commerce applications
- Establish and form NetMAP-USA, a national center for e-commerce assessments in recognition of ECom-Ohio's leadership

OSC

Innovations in computing, networking, and education

TPG is an initiative of OSC (Ohio Supercomputer Center). Learn more about TPG by visiting its website at www.technologypolicygroup.org.

ecom-ohio regional convenors

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This is a summary report.
For more detailed information,
please visit www.ecom-ohio.org.

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Layout and Design by Ian MacConnell