



eReadiness Maryland
Assessing Our Digital Opportunities

Engines of Growth
for the 21st Century



Technology Led Economic Development

**Funded in part by the U.S. Department of Commerce –
Economic Development Administration (EDA) and the State of Maryland**

May 7, 2003



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-Project Background-

- *eReadiness Maryland* was the first comprehensive study to determine information technology readiness amongst Maryland's businesses and households. A final report was submitted to the State's General Assembly on February 1, 2003. The objective of the project was to find solutions that will enable businesses and citizens in Maryland to have robust access to digital opportunities by providing quality data to decision-makers using research tools benchmarked by the nationally recognized Computer Systems Policy Project (www.cspp.org).
- TEDCO partnered with the Technology Policy Group - TPG of the Ohio Supercomputer Center (www.ecom-ohio.org) to complete Maryland's infrastructure analysis.
- Outcomes were achieved by assessing and mapping network infrastructure/access, real-time testing of current network performance (dial up) and analysis of in-depth business and household surveys on IT usage statewide.



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Budget –

\$100,000	Department of Commerce, EDA
\$100,000	TEDCO
<u>\$110,000</u>	Non-state, non-federal funds (\$10,000 corporate sponsorship)
<u>\$ 45,000</u>	Additional funding provided by State (Expanded Objectives)
\$355,000	Total Project Budget



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Primary Network Backbone DE-MD-DC-VA-WV March 2002

Wisconsin: Milwaukee

Minnesota: Minneapolis

Oregon: Portland

Washington: Seattle

Missouri: St. Louis, Kansas City

Ohio: Akron, Athens, Cleveland, Columbus

Michigan: Detroit

Illinois: Chicago

Pennsylvania: Pittsburgh, Philadelphia

New York: Rochester

Ontario: Toronto

Massachusetts: Boston, Worcester

New York: New York City

New Jersey: Jersey City, West Orange, Trenton, Hackensack, Pennsauken, Newark

Great Britain: London

Germany: Frankfurt

Colorado: Denver

Utah: Salt Lake City

Arizona: Phoenix

California: Los Angeles, Palo Alto, San Diego, San Francisco, San Jose, Sunnyvale

Nevada: Las Vegas

Kentucky: Ashland, Lexington

Louisiana: New Orleans

Tennessee: Kingsport

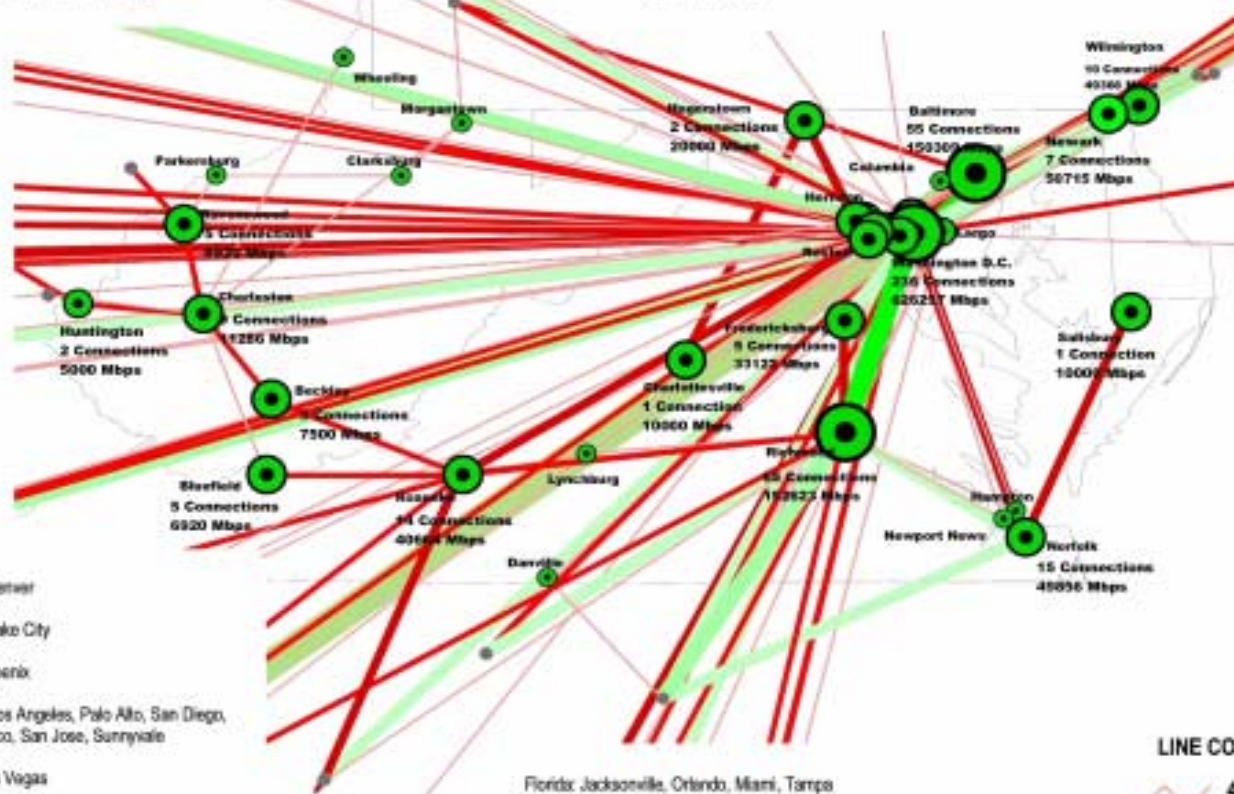
Texas: Dallas, Fort Worth, Houston

Florida: Jacksonville, Orlando, Miami, Tampa

Georgia: Atlanta

North Carolina: Charlotte, Greensboro, Raleigh

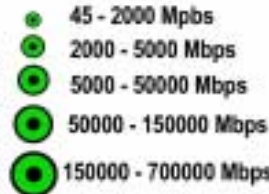
South Carolina: Charleston, Columbia, Greenville



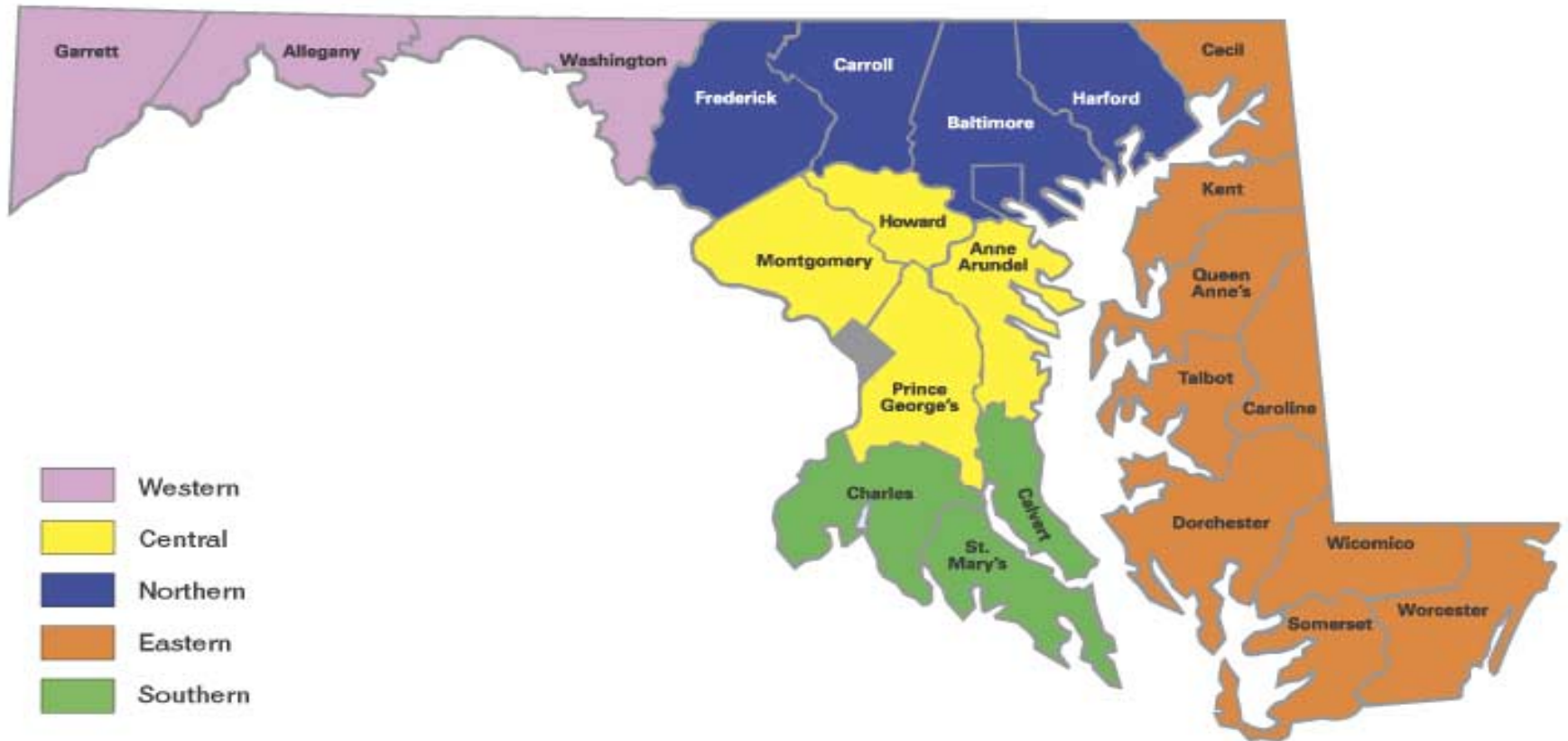
LINE CONNECTIVITY



CITY TOTAL CAPACITY



Geographic Regions Used in Study

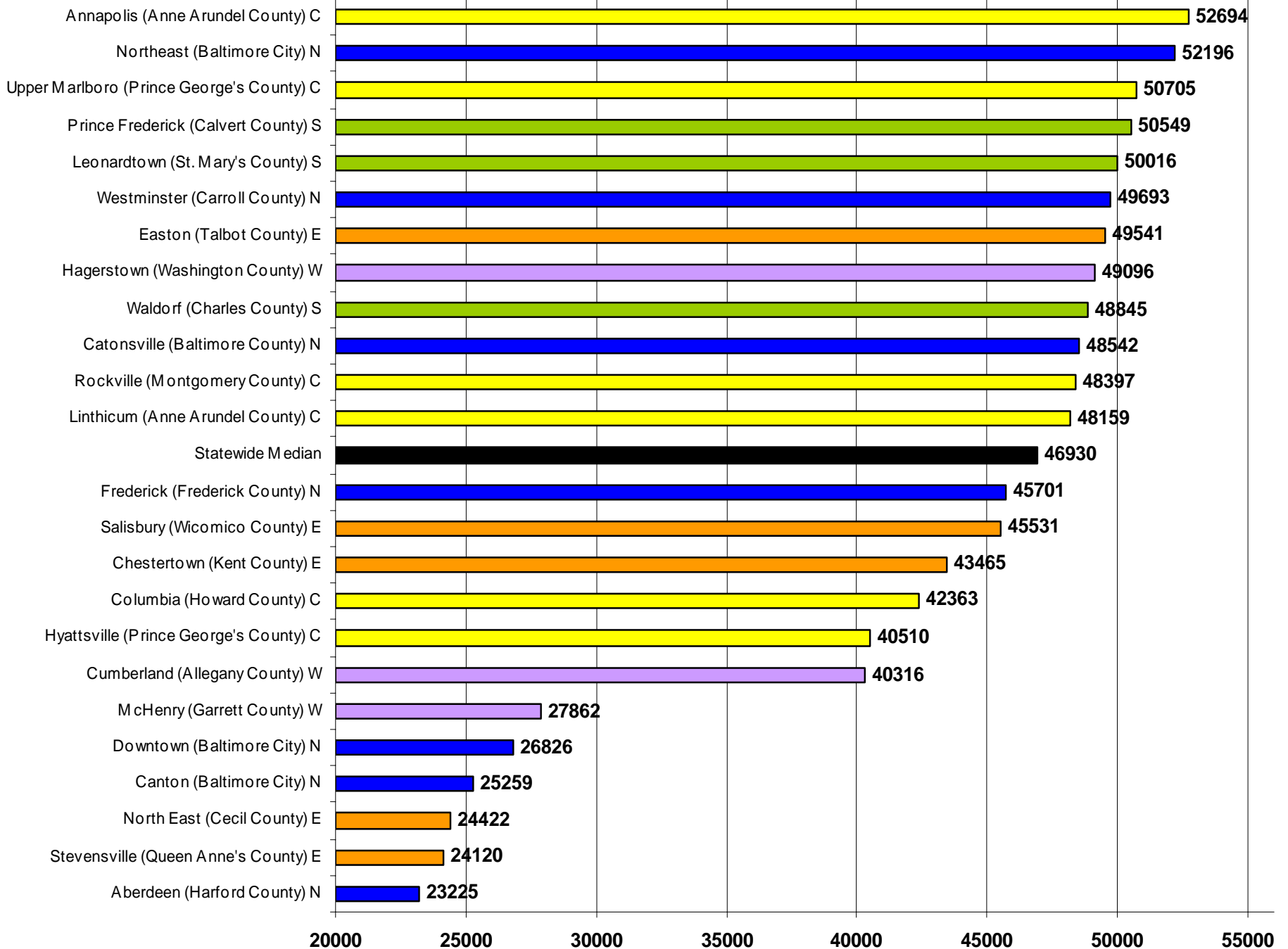




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- Laptop computers with specially designed software were deployed around the State and connected to an analog phone line in each location. Local and national ISPs were utilized over the course of a two week period, 24 hours/day, to achieve the following outcomes:
 - 1) Determine general quality of telephone network (basic dial-up service)
 - 2) ISP reliability, consistency, and performance
- Each individual test took about 45 min. to 1 hour
- Measurements:
 - Connection speed, reliability, network congestion
 - Download times for 1KB – 5MB files via HTTP, FTP, SMTP
 - Overall performance by time of day
 - Maximum achievable speed is slightly less than 56k

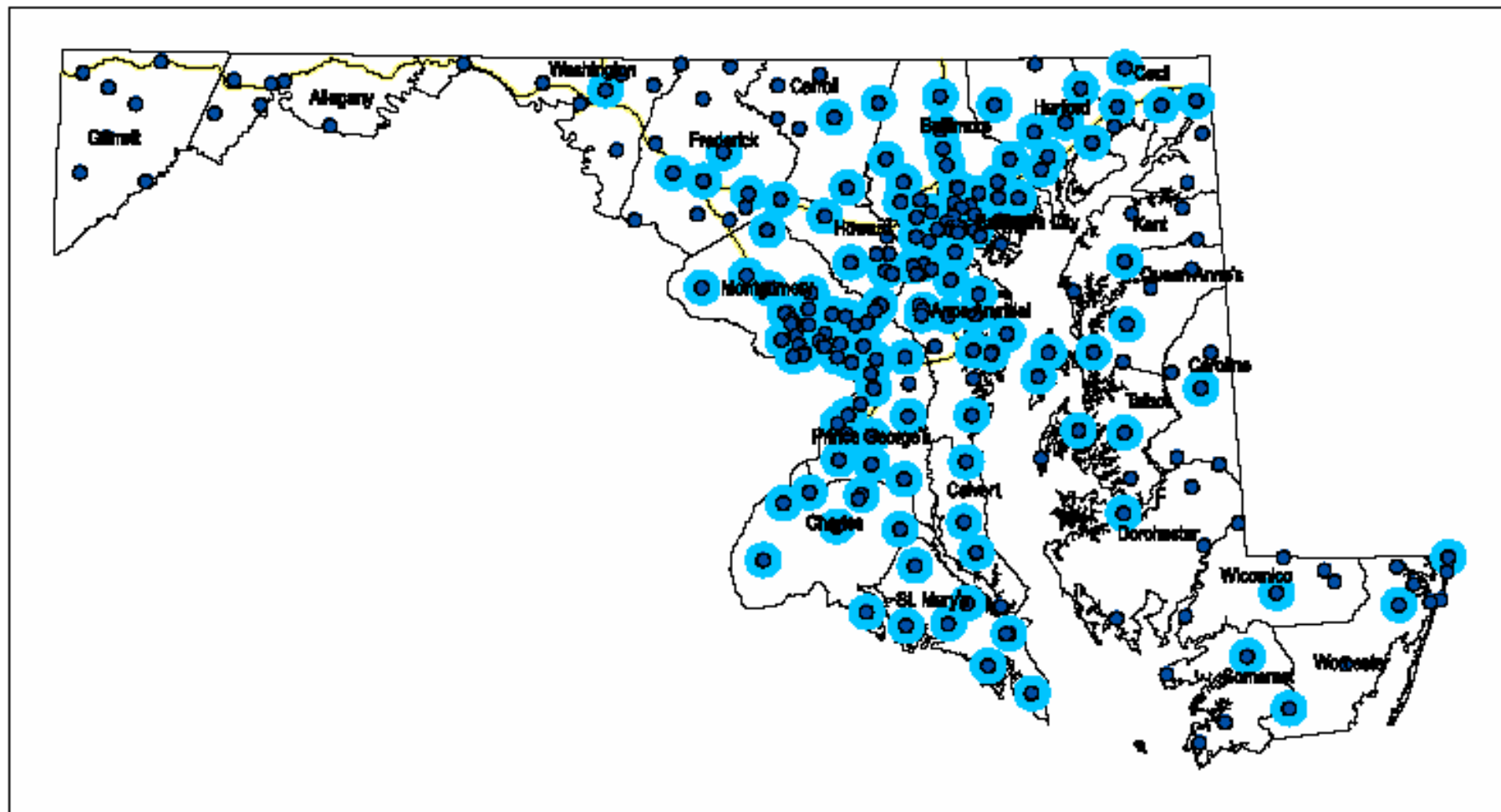
Following Graph Displays Overall Average Connection Speed



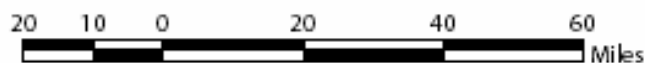
Broadband Coverage: DSL

- Data gathered from FCC databases, equipment analysis, provider central office data
- Has been validated by providers
- DSL is viewed as critical particularly for small businesses without the resources or need for a higher bandwidth, point to point connection (T-1)
- DSL provides constant Internet connection, is offered by telephone companies, and has low upload speed

Maryland Central Office Inventory, DSL Coverage February, 2003



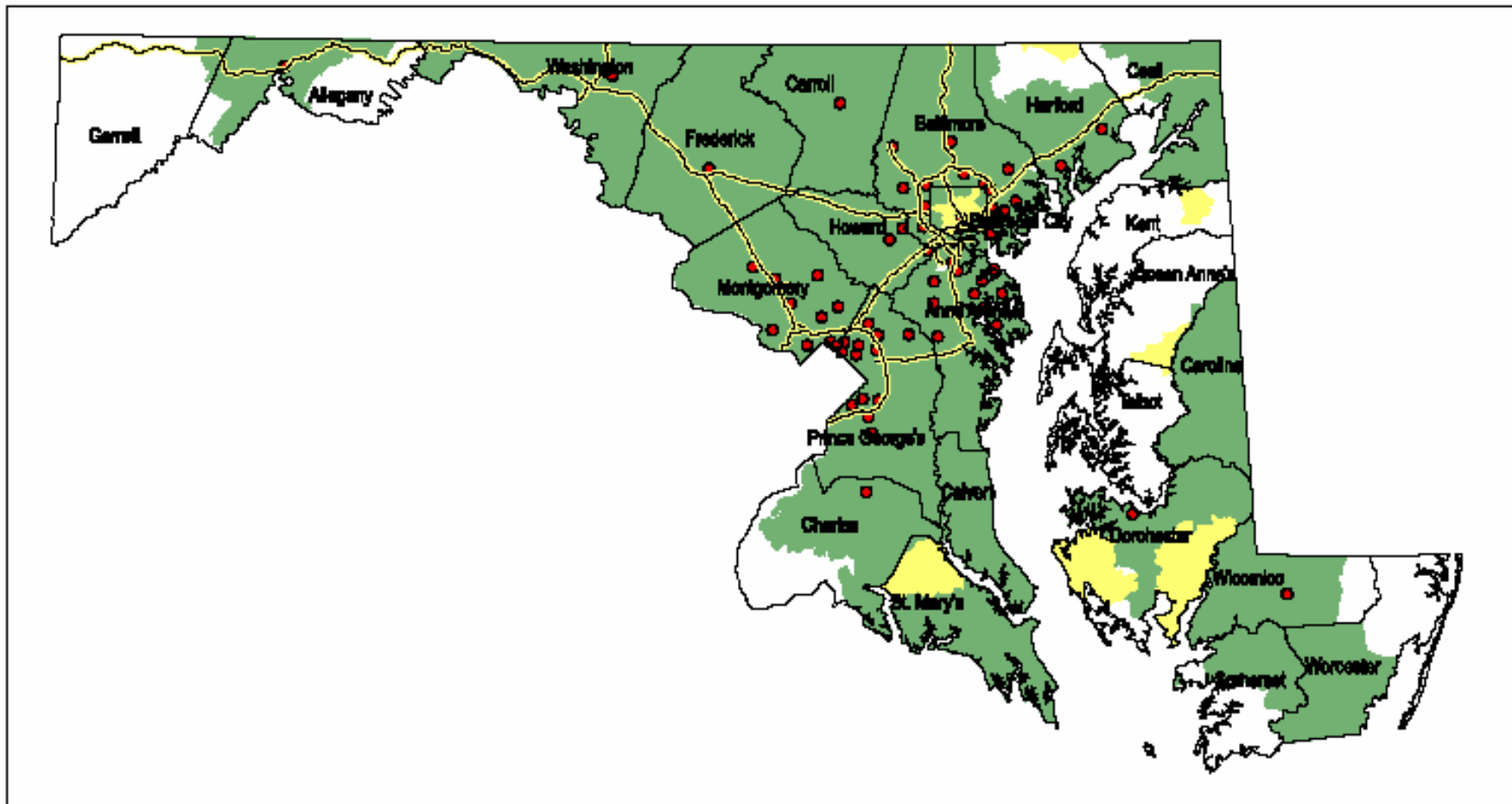
- Telephone Central Offices
- Theoretical 3 Mile DSL Coverage Area
- Counties
- Interstate Highways



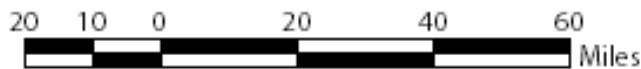
Broadband Coverage: Cable Modem

- Cable modem information gathered directly from providers through Cable Telecommunications Association of MD, DE and DC
- Cable modem technology is particularly well-suited to residential applications, although inroads are being made in the small business market with new business products
- Designated to operate over cable TV lines and is provided by cable companies

Maryland Cable Modem Coverage February, 2003



- Current
- Future, by 2004
- Cities with Population > 10,000
- Interstate Highways
- Counties





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Business Survey Methodology

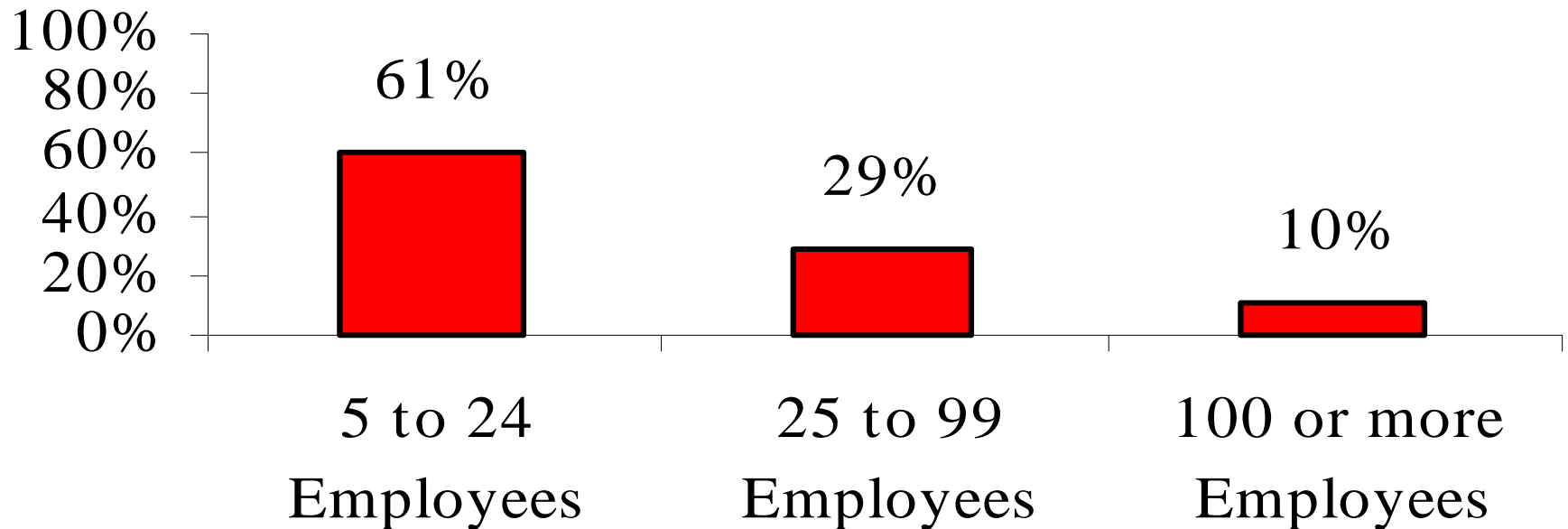
A total of 1,126 telephone interviews were completed statewide by the Survey Research Center at College Park.

A letter from the Lt. Governor was sent to each sampled business that did not cooperate with the first caller, explaining the purpose of the survey, its sponsorship and assuring confidentiality of responses. **This greatly improved the cooperation rate for this project.**

Of all respondents contacted, 70% agreed to be interviewed. This is an exceptional interview “cooperation rate.” Of all businesses identified as eligible— whether or not a respondent was contacted— interviews were completed at a rate of 51% percent. This is a very good “response rate” for a business survey.

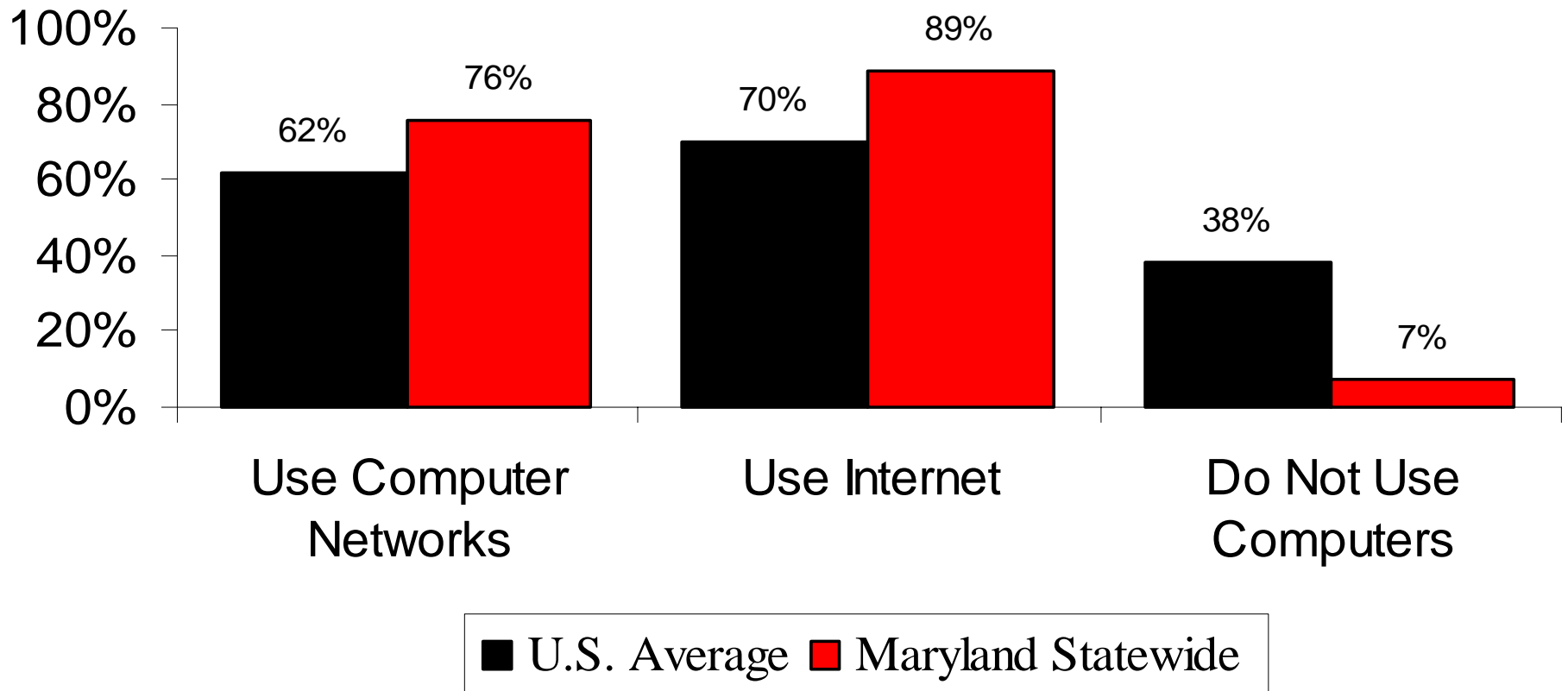
During the data collection period, the data were checked on a regular basis to ensure that there were not excessive missing items or any other data quality problems.

Who Was Interviewed?

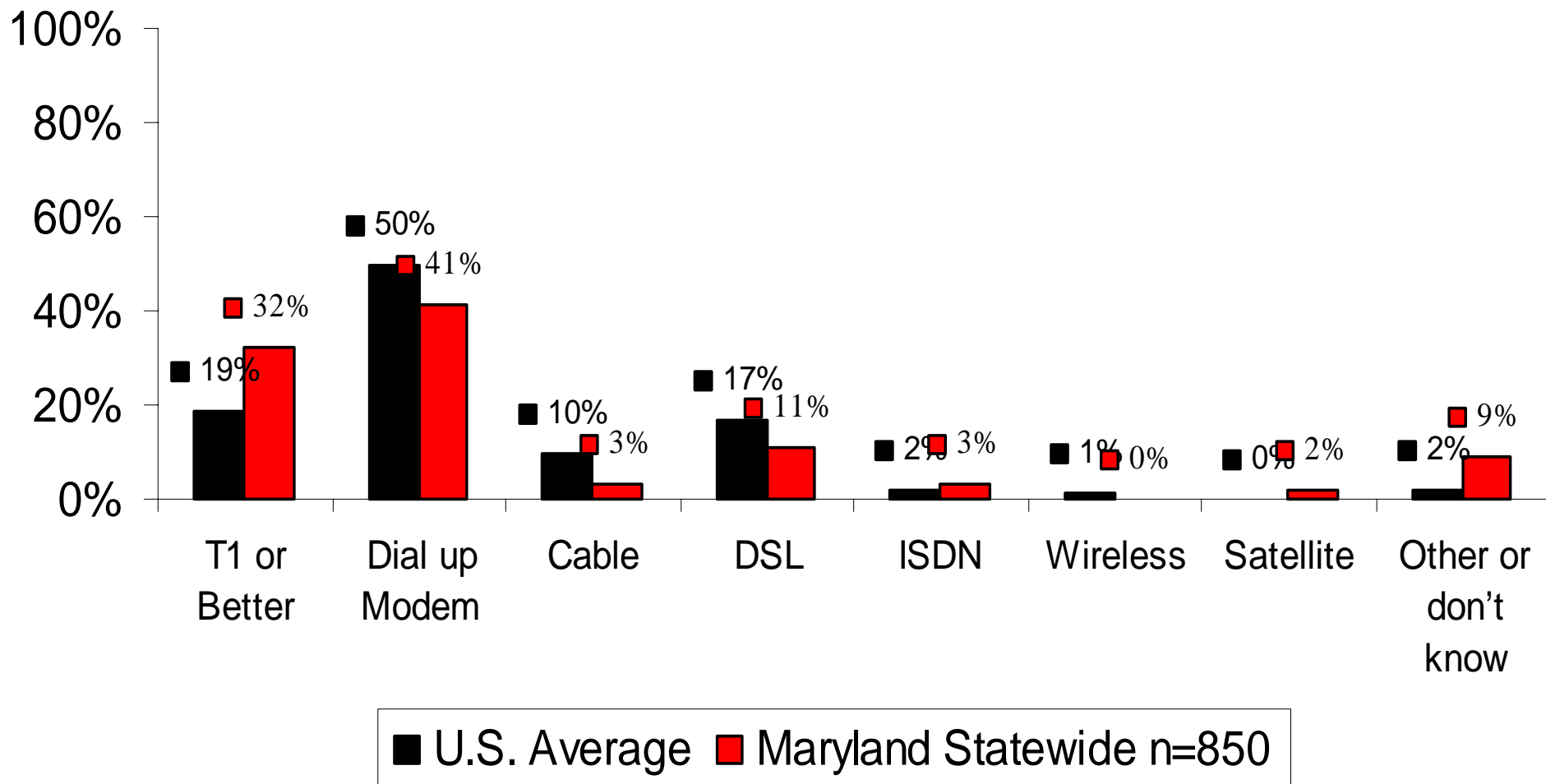


■ Maryland Statewide n=1108

Business Usage of Computers and Internet

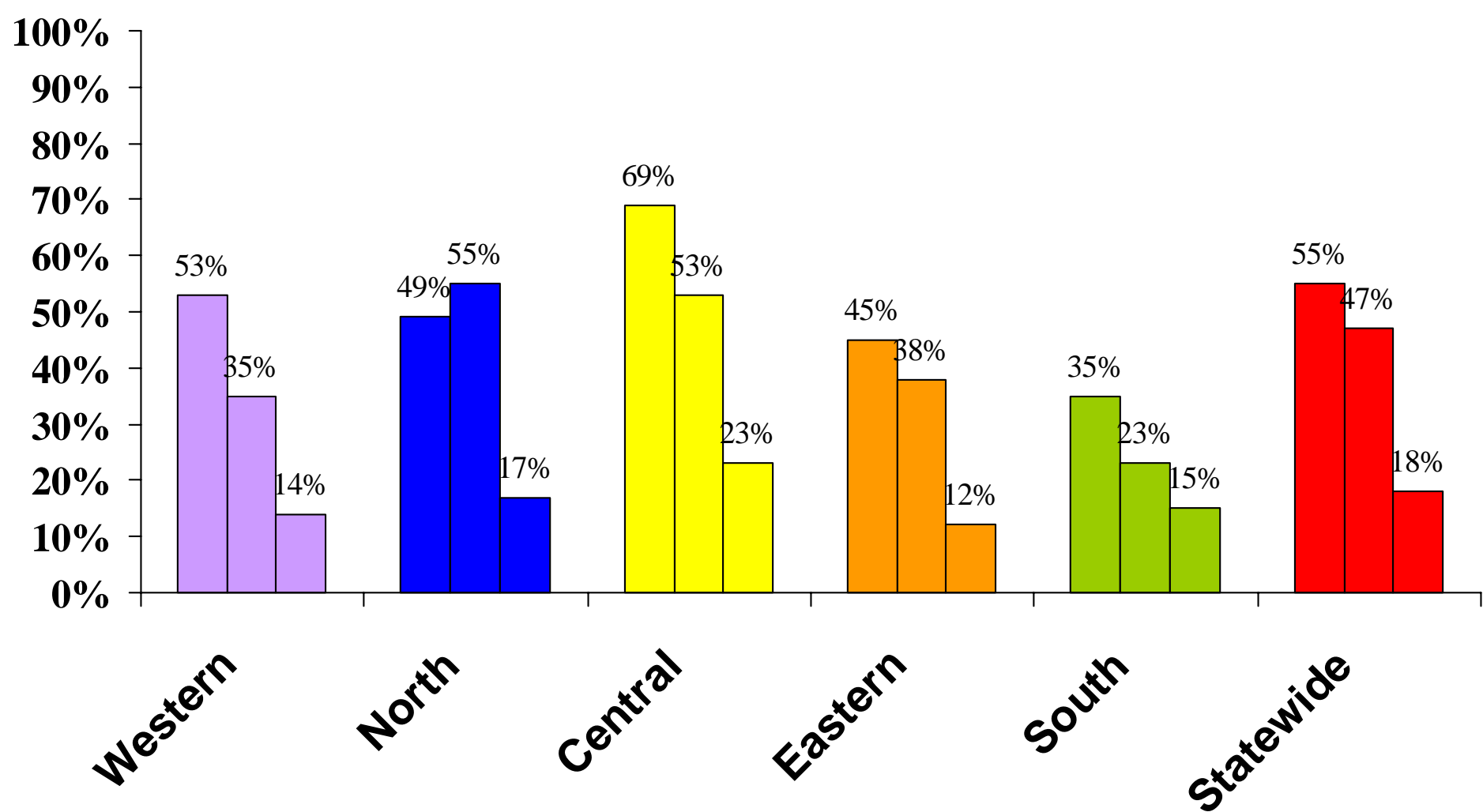


Mode of Access – All Types of Business



Regional Comparison of Business Usage (Answering Yes)

- 1) Has the Internet Increased Productivity?
- 2) Do You Have a Broadband Internet Connection?
- 3) Do You Have Employees with a Degree in Info Technology?





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Household Survey Methodology

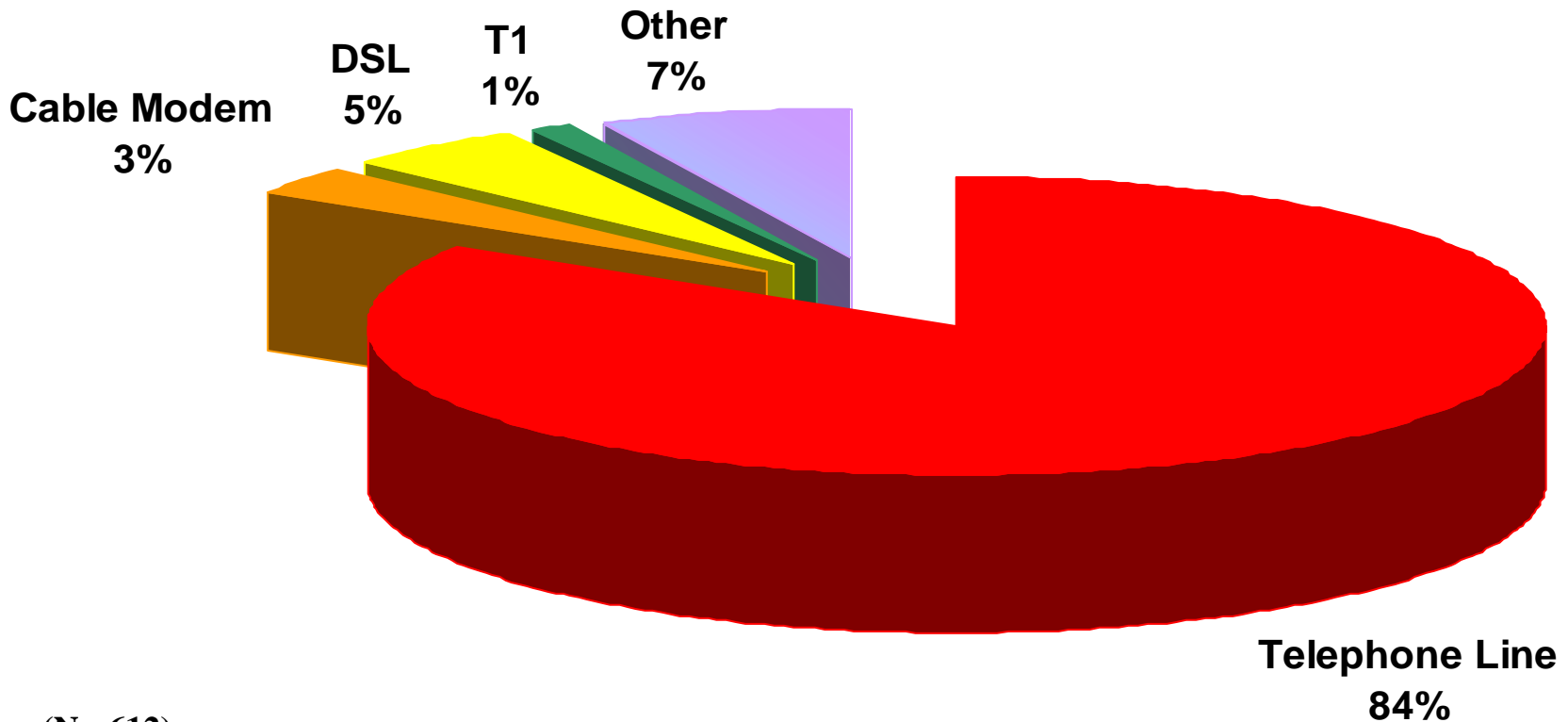
The eReadiness survey utilized in this analysis was designed by Ohio's Technology Policy Group and modified by TEDCO staff and vetted by the Steering Committees. RESI survey researchers at Towson University tested the instrument to ensure that the structure, language, and responses were free of ambiguity.

Once the final survey instrument was approved by TEDCO, RESI began to disseminate the survey via telephone. The telephone is often cited as the best means of survey dissemination, primarily because it minimizes non-response bias, as well as ensures that the survey responses represent a random, representative sample.

RESI obtained a sample of 9,000 randomly selected, listed Maryland residential phone numbers from a credible data/information acquisition group. Using this random sample, RESI was able to successfully survey 1,422 heads of household in the state of Maryland.

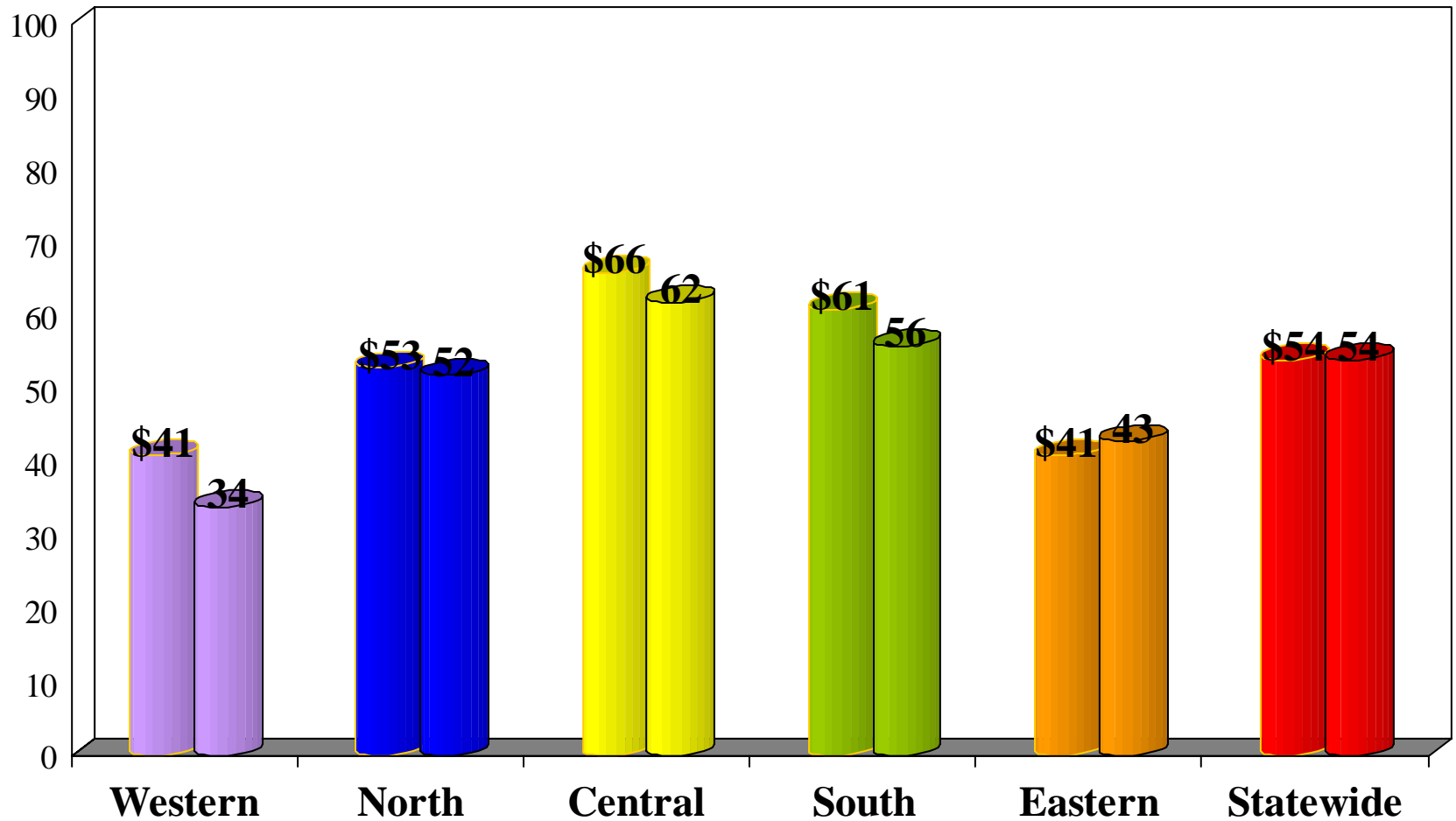
Primary Mode of Home Internet Access

Statewide Analysis (December 2001)



(N= 612)

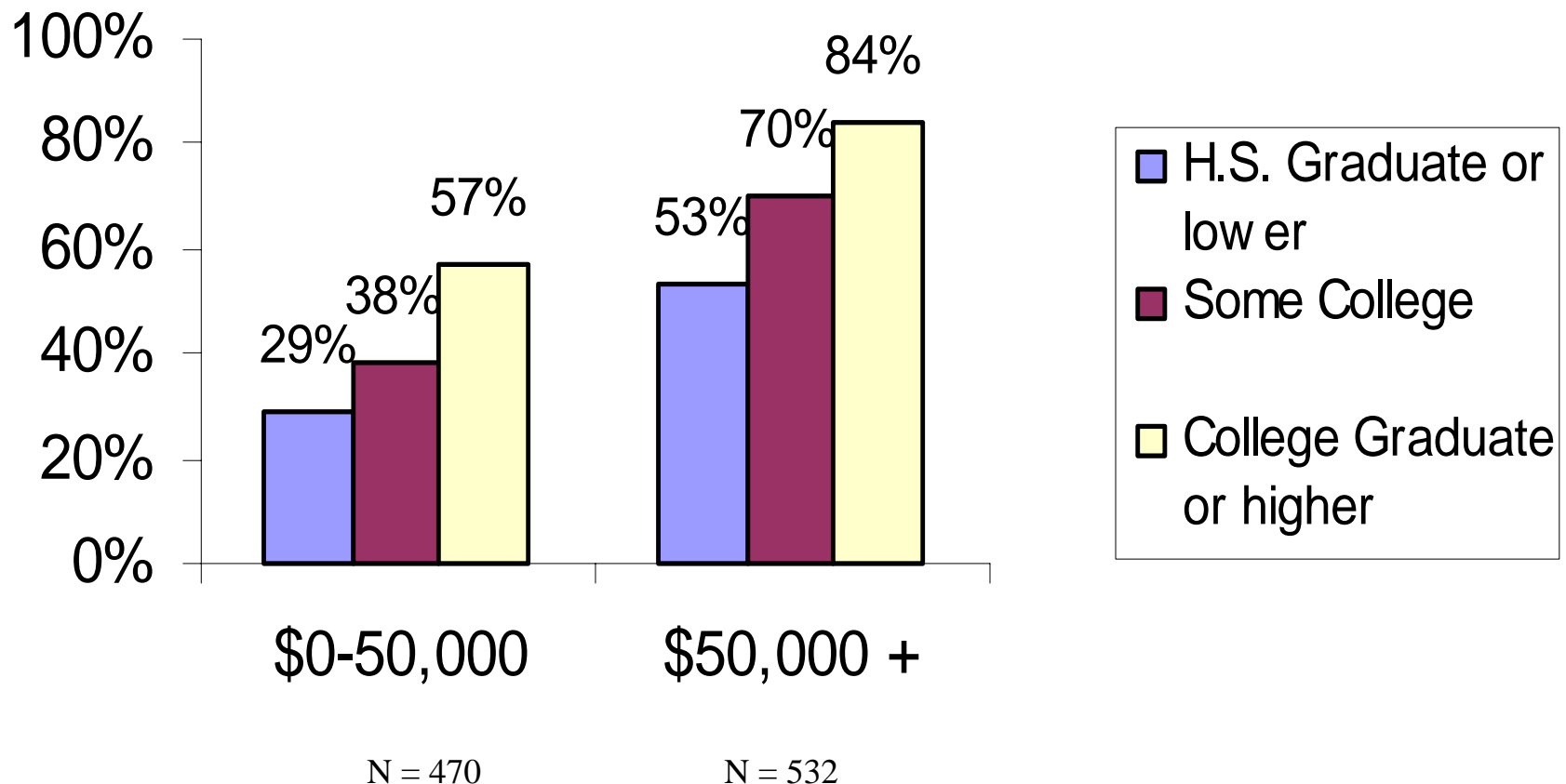
Regional Median Household Income (in thousands) & Regional Home Internet Utilization (percentage)



Source: US Census Bureau. *Money Income in the United States: 2000*.
US Department of Commerce: September 2001

The Relationship between Education and Income

Do You Access the Internet from Home?





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Questions? Comments?

www.marylandtedco.org