

Executive Summary

This report presents the findings of the second year of an evaluation of the U.S. Department of Commerce's Technology Opportunities Program (TOP).¹ Administered by the National Telecommunications and Information Administration, TOP is designed to help communities make use of new and emerging telecommunications and information technologies. The evaluation study was designed to assess the activities and achievements of grant recipients that received funding in Fiscal Year 1996, the program's third year.

The results presented here provide a comprehensive look at the impacts of the TOP investment in terms of the nature and degree of the effects on the organizations implementing the projects, other organizations that were involved with the projects, the individuals and communities that were served by the projects, and the specific value added by the TOP funds. This report follows, and builds upon, findings from two previous reports, *Evaluation of the Telecommunications and Information Infrastructure Assistance Program for the 1994 and 1995 Grant Years* (Westat, February 1999) and *Telecommunications and Information Infrastructure Assistance Program, Collected Case Study Evaluations* (Westat, October 1999).

OVERVIEW OF THE TECHNOLOGY OPPORTUNITIES PROGRAM

In 1994, the U.S. Department of Commerce's National Telecommunications and Information Administration (NTIA) initiated the Tele-

communications and Information Infrastructure Assistance Program, now known as the Technology Opportunities Program. TOP provides matching grants to a wide range of nonprofit organizations—schools, libraries, hospitals, public safety entities, and state and local governments—to make use of innovative telecommunications and information technologies. A primary purpose is to bring these technologies and their benefits to inner-city and rural underserved areas, and to others that have difficulty accessing the information infrastructure.²

Grants are used to fund projects that intend to improve the quality of (and the public's access to) education, health care, public safety, and other community-based services. In 1996, awards were made in three categories: access grants, demonstration grants, and planning grants. Grant recipients can use their awards to (1) purchase equipment for connection to networks, including computers, video-conferencing systems, and network routers; (2) buy software for organizing and processing all kinds of information, including computer graphics and databases; (3) train staff and others in the use of equipment and software; (4) purchase communications services, such as Internet access; and (5) support project management and evaluation.³

¹ On January 5, 2000, the National Telecommunications and Information Administration changed the name of the Telecommunications and Information Infrastructure Assistance Program (TIAP) to the Technology Opportunities Program (TOP).

² TOP defines "information infrastructure" as telecommunication networks, computers, other end-user devices, software, standards, and skills that collectively enable people to connect to each other and to a vast array of services and information resources.

³ TOP does *not* support projects that are designed to (1) construct or augment one-way networks; (2) enhance or expand the internal communication needs of a single organization; or (3) replace or upgrade existing facilities. Nor does TOP support projects whose primary purpose is to develop content, hardware, or software, or to provide training on the use of the information infrastructure. TOP will, however, support projects that include elements of content development, training, and hardware and software development so long as they are integral to a broader strategy for using the information infrastructure to address community problems.

STUDY OVERVIEW

In 1997, TOP initiated a study to assess the effects that the funded projects are having at the local level and, over the long term, at the national level. The study—conducted by Westat, a Rockville, Maryland research and consulting firm—was also intended to provide a basis for program improvements and to lay the groundwork for continued and improved collection of program data in future years.

During the first year of the study, Westat conducted a mail survey of all projects funded by TOP in 1994 and 1995 and prepared comprehensive case studies for a representative sample of 1994 and 1995 TOP projects. The data obtained through these two activities were used to prepare a report that assessed the implementation and impact of the TOP projects (see *Evaluation of the Telecommunications Information Infrastructure Assistance Program for the 1994 and 1995 Grant Years*).

In Year 2 of the study, Westat conducted a mail survey of the 49 projects funded by TOP in 1996 that were no longer receiving grant monies as of January 1, 1999.⁴ The rationale for excluding sites that were still operating as TOP projects in 1999 was that not enough time would have elapsed to survey active (or recently closed) projects on topics such as extent of implementation, outcomes, spinoffs, and sustainability.

⁴ During the second year of the study, Westat also prepared case studies for 12 TOP projects in urban and rural settings (see *Telecommunications and Information Infrastructure Assistance Program, Collected Case Study Evaluations*). The projects that participated in the Year 2 site visits were not randomly selected—that is, they were visited because they had implemented potentially promising practices that were targeted toward underserved populations. Because these projects were not representative of the survey sample, findings from the 12 case studies are not included in this report.

SUMMARY OF FINDINGS

Characteristics of Grant Recipients

While the 1996 TOP grants were awarded to a wide variety of organizations, we found that, as with the 1994 and 1995 projects, education organizations represented the most common category of grant recipients.⁵ Education organizations also represented the most common category of partner organizations.

A variety of organizations served as grant recipients. Overall, three-fifths of access and demonstration grant recipients were education organizations. The remaining grant recipients were evenly spread out among community organizations, health care organizations, and government organizations (with a small percentage of public safety organizations).

TOP projects involved multiple partnerships. Grant recipients in access and demonstration projects established new (or continued existing) partnerships with an average of 11 organizations. The most frequently reported organization types serving as partners were education organizations, community organizations, private sector entities, and government agencies.

The primary contributions of project partners involved human resources. A majority of partner organizations provided personnel, and almost half provided expertise or intellectual capital.

Project Implementation

As was the case with the 1994 and 1995 projects, the 1996 TOP projects in the survey sample used a wide range of strategies to address barriers to telecommunications access. In addition, the

⁵ “Education organizations” refers to a broad variety of organizations and must not be confused with K-12 schools. In fact, the most common type of education organizations to receive grants were higher education institutions or consortia. Of the 36 access and demonstration grants awarded, only 4 were awarded to K-12 schools or school districts.

majority of projects in the survey sample reported meeting or exceeding their original implementation objectives.

The barriers to access addressed by the projects in the study sample continued to be consistent with the program's emphasis on reaching the underserved. The vast majority of the 1996 access and demonstration projects were designed to address multiple barriers to using telecommunications technologies, with three-quarters or more indicating their efforts were designed to ameliorate geographic, technological, and economic barriers.

The 1996 access and demonstration projects used a wide range of strategies to increase telecommunications access. The most common strategies used by access and demonstration projects included providing onsite education and training, establishing access sites for reaching the information infrastructure, and providing computer hardware for education and training.

The access and demonstration projects in the study sample successfully achieved their implementation objectives. The vast majority of projects either met or exceeded their implementation strategies. Equally important, for any given implementation activity, very few projects reported that the extent of implementation was "less than planned."

The evaluation activities undertaken by the 1996 access and demonstration projects in the study sample tended to rely on more rigorous methods than had been used by the 1994 and 1995 projects. In addition, projects tended to rely on more than one strategy to evaluate their efforts. The Year 2 mail survey also found that the 1996 projects tended to collect the same types of data (e.g., satisfaction of end users, satisfaction of project staff) as had been collected in 1994 and 1995.

Insufficient planning continued to pose the greatest obstacle to implementation. As was the case with the 1994 and 1995 projects, the 1996

access and demonstration projects included in the survey sample indicated that their greatest barrier was having underestimated the amount of effort/time required to complete their implementation activities.

Among planning projects, respondents generally indicated that they met or exceeded their planning activities. The survey also found a number of planning projects reported that the following activities were implemented "less than planned": developing an evaluation plan, identifying sites for accessing the planned network, and conducting a needs assessment of the population to be served.

Accomplishments and Impacts

Overall, 1996 TOP projects met or exceeded their own expectations, implemented replicable projects, and made significant impacts upon underserved end users.

The 1996 access and demonstration projects ranked their technology-related contributions—i.e., demonstrating technology and its uses, providing access, and addressing community communications and telecommunications needs—as being their most significant outcomes. In the majority of cases where these outcomes were anticipated, projects indicated they exceeded their own expectations.

The 1996 access and demonstration projects continued to reach end users and other beneficiaries from underserved populations. As with the 1994 and 1995 projects, the majority reached rural and geographically isolated end users, as well as end users in poverty.

The majority of 1996 access and demonstration projects continued to work with their partners after the grant ended. Over half reported that their participation in the TOP program served to strengthen their relationship with at least one of their partners.

TOP funding was critical to the implementation of the 1996 grants. Two-thirds of the 1996 access and demonstration projects reported their project would not have occurred without TOP funding. Of the others, most indicated they would have reached fewer end users, experienced delays in implementation, and provided fewer services. Among planning projects, half of the respondents credited TOP with their success in winning further awards.

The majority of 1996 access and demonstration projects indicated that their approach represented innovative improvements that could be replicated in other communities. In fact, all but one of the respondents indicated that their approach was replicable—and the vast majority indicated that their approaches could be easily documented and shared with other interested parties.

Projects supported by TOP have continued to serve as practical models for other communities seeking to enhance their access to and use of the information infrastructure. Projects reported responding to 2,061 unsolicited requests for information and providing tours or technology demonstrations to 1,146 organizations. Further, 17 respondents indicated that a total of 139 organizations had adopted ideas from their projects.

The 1996 planning projects indicated that feasibility assessment, relationships with partners, and developing community awareness were their most significant areas of impact. As would be expected from planning grants, their greatest impact was felt in areas that previous work with TOP projects has shown to be central to ensuring later success.

Sustainability and Project Expansion

As with the 1994 and 1995 projects, nearly all of the 1996 grants were still in operation at the time of the Year 2 survey, and many had, in fact, expanded.

Over 90 percent of the 1996 access and demonstration projects included in the study sample were still in operation at the time of the Year 2 survey. Specifically, 28.1 percent of the access and demonstration projects that had closed by January 1, 1999, were still in full operation; 37.5 percent were serving a function that had changed, grown, or expanded; 18.8 percent were serving fewer end users than intended; 6.2 percent were providing a limited range of services; and 9.4 percent were no longer operational.

Increased user base, financial contributions from partners, and partner buy-in were factors that facilitated continuation or growth of access and demonstration projects. The most commonly cited impediments to full operation were personnel changes (7 projects), not enough users (6 projects), no funding available for operations (5 projects), and no funding available for maintenance (5 projects).

More than half of the access and demonstration projects in the survey sample had expanded to serve additional end users in locations or organizations beyond those targeted in their original TOP proposal. In addition, the majority had generated spinoff activities or services. The mean and median dollar amounts associated with the equipment or resources resulting from these spinoff activities were reported to be \$836,023 and \$327,293, respectively. The total value of equipment and resources associated with spinoff activities was estimated to be \$21,736,585.

Just over half of the planning grants in the survey sample had implemented the activities outlined in their telecommunications plan. Strength of leadership and strong partners were factors that contributed to projects' ability to implement their planning grant activities. Three of the four projects that had *not* taken any steps to implement their telecommunications plan identified two primary obstacles—lack of available funds for maintenance, and lack of available funding for operations.