

**National Association of State Chief Information Officers (NASCIO)
2003 Recognition Award Nomination**

Title of Nomination: Indiana Telecommunications Network (ITN)

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Category for judging: Communications Infrastructure

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Executive Summary:

Faced with a large, fragmented, and inefficient communications infrastructure; communications capacity constraints; and rapidly rising communications costs, state of Indiana leaders joined together in 1985 to work toward consolidating the state's communications infrastructure. In 1986, the Indiana Telecommunications Network (ITN), a high-speed telecommunications network for the public sector of the state of Indiana, was developed to provide the state with a reliable and efficient communications system.

The ITN provides its members with direct access to a wide range of services and connectivity to other people and data on the network. The diversity of ITN's membership, including K–12 schools, public libraries, colleges and universities, state agencies, county and municipal governments, public hospitals, rural health care providers, noncommercial radio and television stations, economic development corporations, and community networks, offers ITN members unique advantages for collaboration among a community of users with one common purpose: to serve the citizens of Indiana.

ITN also offers members:

- Privacy, speed, and reliability
- Quality of service (QoS), ongoing network development, and Internet caching
- Assistance with universal service, state grants, postalized pricing and cost structure reviews
- Only access in the state to Internet2
- 24/7 help desk assistance and network performance monitoring

The ITN has resulted in tremendous cost savings for its members by creating cost efficiencies and standardization that cannot be achieved when agencies contract, design, and manage network services independently. In 2003 alone, the ITN is saving the Indiana Bureau of Motor Vehicles (BMV) approximately \$321,000 in communication costs and the Indiana Gaming Commission \$98,000.

So far, primarily K–12 schools, public libraries, higher education institutions, and state agencies have taken advantage of these economies of scale. As more and more eligible public organizations, such as county and municipal governments, public hospitals, rural health care providers, noncommercial radio and television stations, economic development corporations, and community networks take advantage of the ITN, the state will realize even greater cost-savings in disseminating educational and eGovernment services to the citizens of Indiana.

A defining characteristic that sets the ITN apart from every other state telecommunications network in the country is its enormous potential for cooperation and collaboration among its extremely diverse public-sector membership, which gives the state of Indiana the ability to integrate services among all levels of government and education. The next great project on the horizon, connecting all county government offices to the ITN community, is achievable through the infrastructure so prudently laid almost two decades ago.

Description of project, including length of time in operation:

Key Indiana government and industry officials began meeting in late 1985 to discuss the formation of a state telecommunications network and to begin a mission to change a fragmented infrastructure with many shortcomings. The weaknesses in Indiana's communications infrastructure were evident in three interrelated areas: (1) lack of statewide direction; (2) communications capacity constraints; and (3) rapidly rising communications costs.

During the mid- to late-1980s, various state entities managed Indiana's limited telecommunications services separately and collaborated little. The state had built these systems to respond to the needs of individual agencies as they had arisen. The consequence was that the systems were redundant, costly to operate and maintain, and offered little potential for future growth.

Telecommunications spending in 1985 by Indiana state government and the major state-supported higher education institutions totaled \$25 million. Spending on public voice long-distance circuits exceeded spending on private line circuits. Voice costs were rising rapidly, which resulted in reduced video transmission and programming. In addition, all the networks used analog technology, which severely limited coverage and capacity.

State leaders envisioned a single statewide, integrated, telecommunications backbone network that would serve a broad community of users by employing state-of-the-art technology such as digital switching and transmission for video, voice and data, and offer network management services to all users. Negotiations among state leaders led to the development of the Indiana Telecommunications Network (ITN), a high-speed telecommunications network created for the public sector of the state of Indiana, which provides members with direct access to a wide range of services as well as connectivity to other people and data on the network.

In 1986, the Indiana General Assembly provided support to lay the foundation for a reliable and powerful telecommunications infrastructure. Over the past 15 years, the state of Indiana has expanded that initial investment to help create a network that is fully self-supported without state appropriations. Monthly recurring service fees fund ongoing service delivery, including technical support and advanced planning.

Direct network connections help members avoid the traffic congestion of the commercial Internet and are available only to other members of the ITN, which include K–12 schools, public libraries, government offices, higher education institutions and others throughout the state. The Indiana Telecommunications Network was projected to save the state of Indiana more than \$34 million over 10 years through economies of scale created by consolidating nearly all of the state's government and education communications requirements.

Today, the ITN is provided by statute (Indiana Code 5–21) through a consortium of state agencies brought together by the Intelenet Commission of the State of Indiana. These members—including the Indiana Department of Education, the Information Technology Oversight Commission, the Indiana Higher Education Telecommunication System (IHETS), the Intelenet Commission, and the Indiana State Library—provide direction and resources to guide the continued development of the ITN. Day-to-day operations of the ITN are administered by the Intelenet Commission and managed by IHETS.

Significance to the improvement of the operation of government:

The ITN laid the groundwork for government agencies to come together to create enterprise solutions for the delivery of government services to citizens and businesses. The ITN's solid network infrastructure, combined with the state's Web portal, *accessIndiana*, provide the means for delivery of eGovernment services and information at reduced costs to citizens and the state of Indiana.

The ITN is used to transmit data, voice, and video securely and quickly among members. It is used for research, collaboration, and communication. Some examples of how the state has used the ITN to improve government operations include:

- The Automated Fingerprint Identification System (AFIS) allows more than a third of Indiana's sheriff's offices to crosscheck digital fingerprints with data at Indiana State Police headquarters, where it is compared with data at the Federal Bureau of Investigation (FBI).
- Voter registration lists compiled by county clerks in all 92 counties update a single master list at the Secretary of State's office, eliminating duplicate registrations among counties and ensuring authentication of voters at polling places.
- Indiana taxpayers receive state tax refunds from the Indiana Department of Revenue via direct deposit in as little as 10 days when they file their taxes online.
- Electronic alert systems for state emergencies, missing children, and homeland security are quickly updated by the responsible agencies and posted online for public viewing.
- Rural health clinics transmit patient records to public hospitals during emergencies over secure network paths supported by encryption and firewalls.
- Researchers at Indiana's institutions of higher education conduct advanced research and development over Internet2, bypassing the commercial Internet to collaborate with other higher education institutions in Indiana and beyond.
- College students across the state receive degrees through distance education courses offered by higher education institutions.
- K–12 students across the state participate in distance learning and special projects, including the Jason Project, Indiana Web Academy, and programs through local and national scientific and cultural institutions.
- Public librarians across the state attend workshops and training together via videoconference.

Benefits realized by service recipients, taxpayers, agency or state.

Members value ITN because this unique network offers:

Privacy, Speed, and Reliability

- ITN provides member institutions with a high-speed, fully managed intranet, separate from the commercial Internet to provide fast connectivity among member institutions.
- The ITN transfers data at over 700 Megabits per second (Mbps) for commercial Internet access. Integrity is maintained through redundant, physically diverse routes from multiple Tier 1 providers at strategic network access points across the state. This redundancy ensures that members always have a path to the Internet.

Opportunities for Collaboration

- Almost every K–12 school, public library, college, university, and state government office is connected to the ITN, providing numerous opportunities for collaboration.
- The network is continually gaining new membership from other valued member groups, such as county and municipal governments, public hospitals, rural health care providers, noncommercial radio and television stations, economic development corporations, and community networks.
- The diversity of ITN's membership offers ITN members unique advantages for collaboration among a community of users with one common purpose: to serve the citizens of Indiana.

- The ITN connects to Internet2, thereby providing I2 access to members through its Sponsored Educational Group Participant (SEGP) status. The ITN provides educational institutions with the only access in the state of Indiana to Internet2 through its Sponsored Educational Group Participant (SEGP) status.

Quality of Service (QoS), Ongoing Network Development, Internet Caching

- The ITN provides Quality of Service to ensure reliable transmission of video and other critical applications across the network. QoS guarantees bandwidth levels and ensures that data travels together across a network without getting broken up, a very important feature for videoconferencing and other high-bandwidth and synchronous applications.
- The ITN receives continued network development and implementation of customized services to meet members' specific needs.
- The ITN offers Internet caching services, which provide members faster download times.

Assistance with Universal Service, State Grants & Cost Structure Reviews

- The network provides Indiana's public libraries, K-12 schools, and related educational institutions with assistance in obtaining federal Universal Service discounts on Internet access.
- The ITN administers connection grant funds provided by the state legislature to K-12 schools and public libraries.
- The ITN reviews and adjusts connectivity costs annually.

Help Desk & Network Monitoring

- Highly skilled technical staff monitor a 24/7 Help Desk and assist members by troubleshooting and repairing problems remotely or on site.
- The ITN provides real-time, online information for network traffic, trouble tickets, and circuit orders.
- Staff monitor network performance to anticipate future bandwidth needs so that circuits can be upgraded regularly to support members' evolving requirements.

The benefits of conducting the state's business electronically are ultimately realized by every sector of public and private life in Indiana, whether through cost-savings that directly impact budgets, through citizens' and workers' abilities to perform tasks more easily and efficiently than before, or through the addition of technologically savvy graduates to Indiana's workforce.

Return on investment, short-term/long-term payback (include summary calculations). Projects must exhibit measurable operational benefit:

When the ITN was first created, the state expected to save more than \$34 million over a 10-year period due to economies of scale achieved by consolidating nearly all of the state's government and education communications requirements. A look a cost savings of two agencies suggests that the economies of scale have far exceeded original expectations.

The return on Indiana's investment in the Indiana Telecommunications Network can be demonstrated in part by looking at cost savings to the Bureau of Motor Vehicles and to the Indiana Gaming Commission.

Indiana Bureau of Motor Vehicles Cost Analysis



Figure 1: Indiana Bureau of Motor Vehicles Cost Analysis

When the Indiana Bureau of Motor Vehicles (BMV) migrated from the State of Indiana Government Network (SIGN) to the ITN in April 2002, it realized significant cost savings:

- On SIGN, 167 circuits ranging from 56 K to T-1 cost BMV \$187,877 per month, an average of \$1,125 per circuit per month.
- 2002 wrapped up the move from SIGN to ITN. All 167 circuits were migrated to the ITN, with a monthly charge of \$175,225, or an average of \$1,050 per circuit per month.
- In 2003 ITN reduced service prices, bringing BMV's cost down to \$161,350 per month, or to an average of \$965 per circuit per month.
- For BMV, the cost differential between the SIGN network and the ITN is \$160 per circuit per month, which represents cost savings to the organization of \$26,720 per month (approximately \$321,000 per year).

Indiana Gaming Commission Cost Analysis

When the Indiana Gaming Commission (IGC) migrated from the State of Indiana Government Network (SIGN) to the ITN in 2000, it also realized significant cost savings:

- SIGN cost IGC \$19,012 per month for 8 circuits, or an average of \$2,375 per circuit, per month.
- In 2000, all IGC circuits were migrated to the ITN. The 8 circuits with ITN cost IGC \$11,800, or an average of \$1,475 per circuit, per month.
- In 2003, ITN reduced the prices of IGC's circuits to \$1,350 per circuit per month, or \$10,800 monthly for all 8 circuits.
- For IGC, the cost differential between the SIGN network and the ITN is \$1025 per circuit per month, which represents cost savings to the organization of \$8,200 per month (approximately \$98,000 per year).

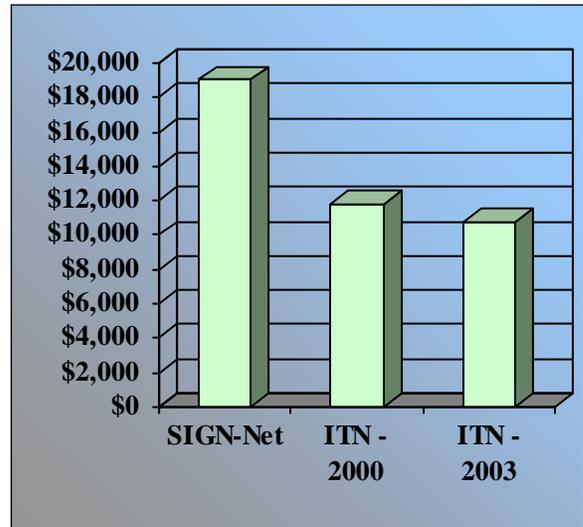


Figure 2: Indiana Gaming Commission Cost Analysis

The Indiana Telecommunications Network, through its consortium of state agencies, including the Indiana Department of Education, the Information Technology Oversight Commission, the Indiana Higher Education Telecommunication System, the Intelenet Commission and the Indiana State Library, provide Indiana with unique opportunities for education, collaboration, research, electronic government services, cost-savings and more.

By providing the public sector with a fully managed network, the ITN creates efficiency and standardization that cannot be achieved when agencies contract, design, and manage network services independently.

Primary members of the ITN are K–12 schools, public libraries, higher education institutions, and state government, who use the ITN as an integral part of carrying out their respective missions. As more and more valued members of the ITN continue to become active members—including county and municipal governments, public hospitals, rural health care providers, noncommercial radio and television stations, economic development corporations and community networks—the more the state will realize even greater cost-savings and efficiency in disseminating educational and eGovernment services to the citizens of Indiana.

The diversity of ITN's membership, including K–12 schools, public libraries, colleges and universities, state agencies, county and municipal governments, public hospitals, rural health care providers, noncommercial radio and television stations, economic development corporations, and community networks, offers ITN members unique advantages collaboration among a community of users with one common purpose: to serve the citizens of Indiana.

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