

2,240+
miles of
highspeed
network
backbone
empowers

\$8
million
savings
to Ohio
education

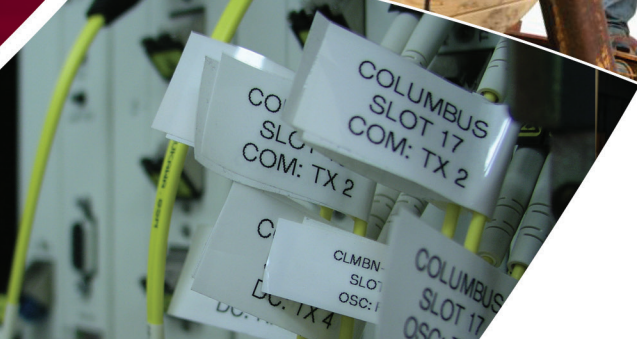
600+
public K-12
schools

250+
colleges,
universities
and branches

2
federal
networks,
peering with
NASA and
DREN

Connect. Aggregate. Collaborate.

OARnet



OARnet

An **OH·TECH** Consortium Member

www.oar.net

OARnet: Facilitating Ohio's economic future through technology

The Ohio Academic Resources Network (OARnet) identifies and deploys shared services that reduce costs, deliver advanced technology programs, increase productivity and improve customer service – and has done so for more than 25 years. Ohio's education, health care, public broadcasting, and government communities voluntarily join the OARnet consortium. These organizations voluntarily participate in OARnet's shared services programs because of the benefits and value-added services they receive.



Our Driving Principles

- Increase access to affordable broadband service. Because OARnet provides more than 2,240 miles of high-speed fiber throughout Ohio, these institutions can connect to the OARnet backbone via shorter distances from the geographic locations — which means less cost.
- Reduce technology costs via aggregate purchasing. OARnet creates economies of scale by consolidating our communities' collective needs for software, hardware and network services and then negotiating the best prices. We are continually working with our communities to identify their needs for this service.
- Maximize shared service opportunities. OARnet partners with its member-communities to develop shared services, which include advanced engineering support, service desk expertise, co-location and emergency web hosting.

“Our business focuses on modeling and simulation for the automotive industry, and we chose Ohio over other states like North Carolina, Indiana or Michigan because of the advanced technology and infrastructure available here in Ohio.”

- Ray Leto, President
TotalSim

OARnet Services

OARnet strives to provide exceptional service as part of its membership benefits and to develop shared programs that reduce the cost of technology through aggregate purchasing.

This shared-services approach reduces the cost of service delivery by centralizing the technology hardware, software and networking required to support the overall community. Examples include:

Broadband Network Access

In 1987, OARnet established a centralized network to support all of Ohio's colleges and universities so they could connect to the resources of the Ohio Supercomputer Center. OARnet connects its communities using a circuit aggregation model. With consolidation hubs throughout the state, this reduces clients' last-mile circuit cost.

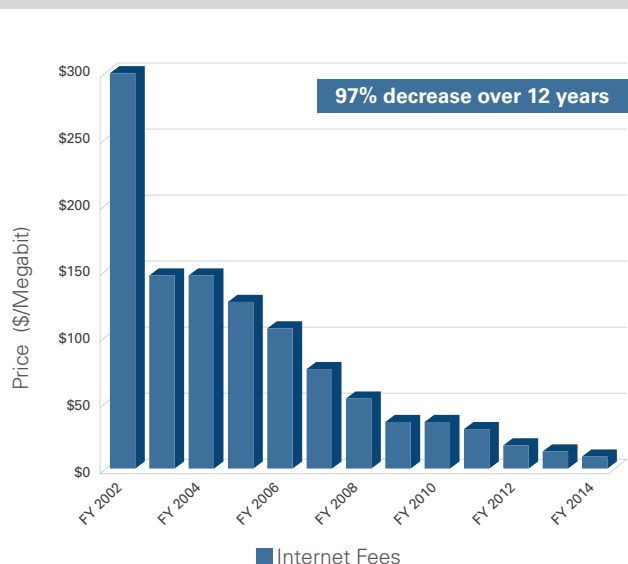
Internet, Internet2 and IntraOhio

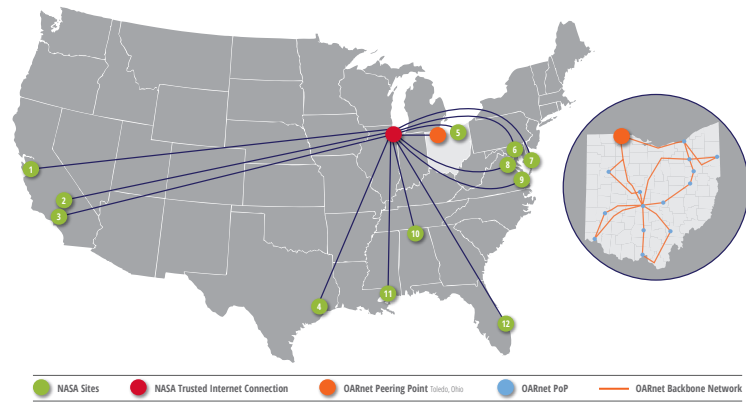
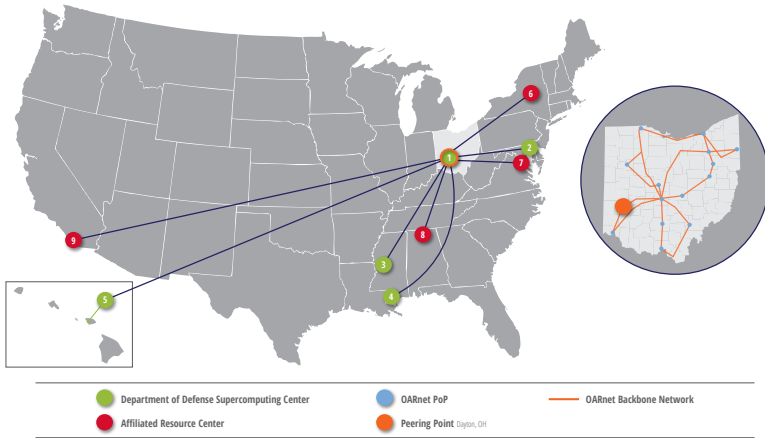
OARnet negotiates highly competitive, aggregate pricing on Internet rates for all stakeholders that would not be attainable on an individual basis.

Through a consortium of Internet2 member schools, OARnet can provide a higher-speed connection to Internet2, a non-profit, national network dedicated to research and education, at a cost below that available to any single university. OARnet serves as the regional optical Internet2 network connector for Ohio.

IntraOhio, which only connects to locations that are connected to OARnet's network, lowers the cost of dedicated bandwidth between schools by provisioning service over existing connections and the in-state backbone. This reduces the cost of Internet services for OARnet's communities.

OARnet Reduction of Expenses – Economies of Scale
Historical Internet Pricing P-20; FY2002 – FY2014





NASA Glenn Research Center and Wright-Patterson Air Force Base/Defense and Research Engineering Network (DREN) have 10 Gig connections to the OARnet backbone. These connections provide Ohio researchers direct access to NASA and DREN sites across the United States and facilitate research collaborations.

Transport Services

OARnet provides high-speed transport service throughout Ohio via its 100 Gigabit backbone. It connects eligible members to other OARnet sites via IntraOhio, to resources provided by the Ohio Supercomputer Center and OhioLINK, as well as to services such as Voice-over-IP, business continuity and high-speed data transfers.

Data Centers

OARnet offers its members access to more than 10 geographically diverse data centers around the state, from Wright State University and Ohio University, to carrier-neutral data centers.

OARnet also collaborates with Ohio universities to offer co-location services, which include rack space, power and access to the Internet, Internet2, and IntraOhio. Members are taking advantage of these connections to expand cabinet space or implement disaster recovery plans.

Virtualization

Virtualization allows IT departments to create a virtual environment at the workstation, server or data-center level. With this technology, organizations need to buy less hardware and software, use less energy and require less staffing to maintain it. OARnet, the Ohio Board of Regents and VMware provide a Virtualization Program that enables OARnet clients to purchase VMware virtualization software and maintenance at significantly reduced prices.

Federated Identity

With a single sign-on, Federated Identity permits secure data access, consolidation and remote collaborations. OARnet offers a standard participation agreement with the InCommon Federation for Ohio public and private colleges and universities, simplifying the application process. Additionally, OARnet is piloting an eduoam project with Ohio University, Internet2 and ANYROAM.

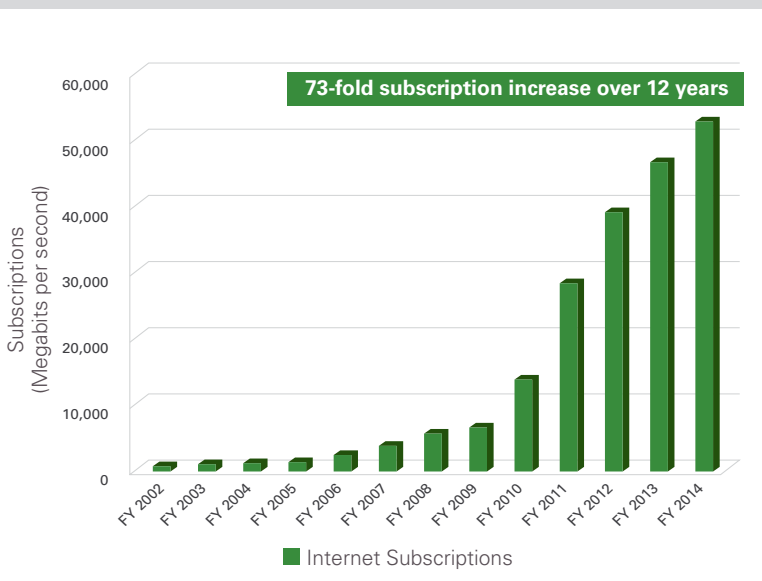
Return on Investment

Through OARnet's flagship shared service, the network, and its expansion into other shared services, OARnet promotes community and economic development by expanding access to affordable technology. Consider the following ROIs:

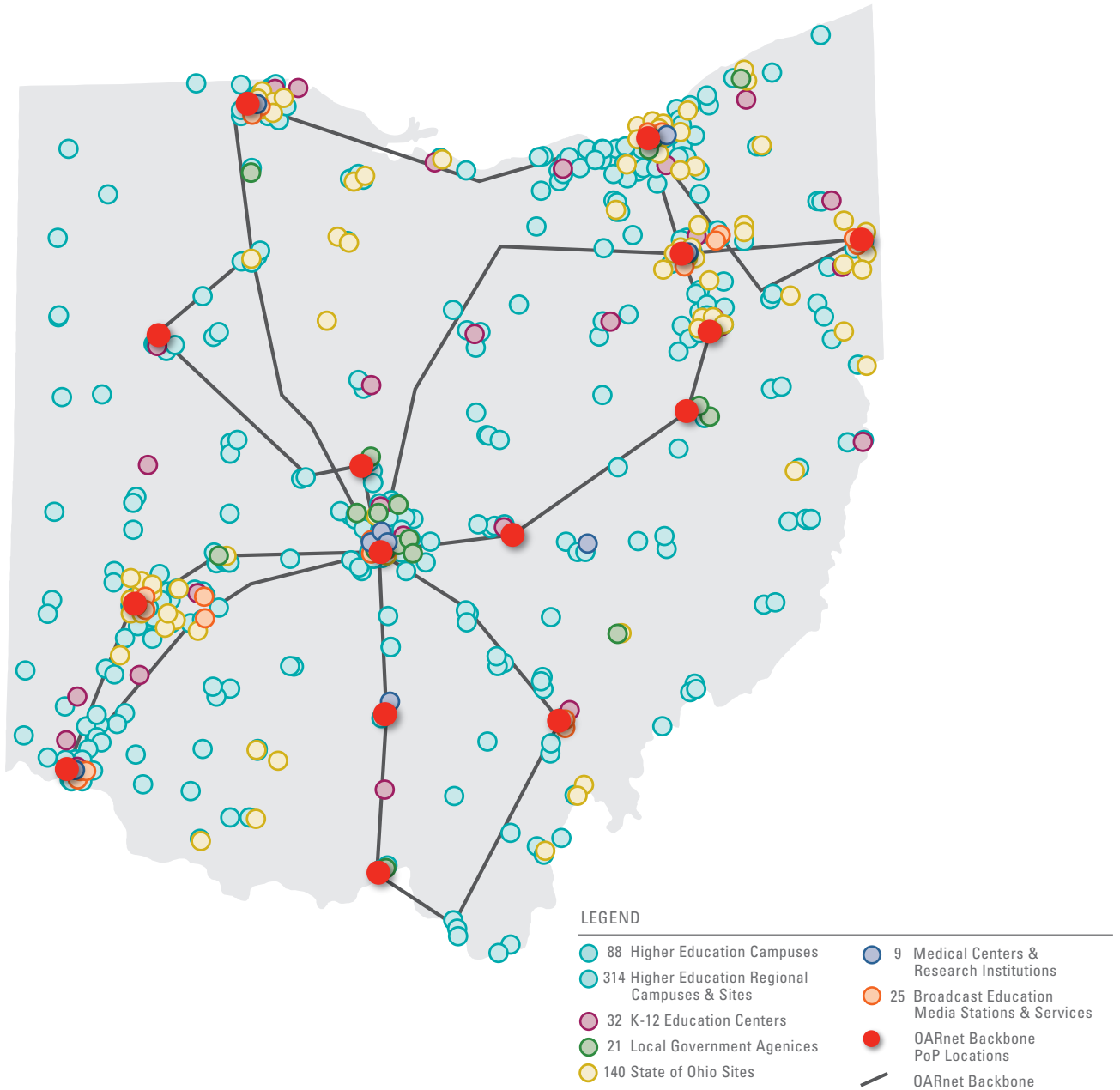
- **\$8 million** | Combined, average savings each year on Internet costs for OARnet's communities.
- **\$47 million** | Amount Ohio higher education, K-12 schools and state agencies have saved through August 2014 on VMware licenses, maintenance and professional services. A new program with Salesforce, Inc., increases the discount for the State of Ohio from 5 percent to 40 percent.
- **25% reduction in cost** | Percentage drop expected on the cost per megabit of Internet, thanks to aggregate demand from the State of Ohio, Ohio higher education and K-12 sites. This is a benefit from the State moving onto the OARnet backbone.

OARnet Power of Aggregation

Historical Internet Subscriptions P-20; FY2002 – FY2014



OARnet 100 Gigabit/Second Network Backbone with Connected Partners



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