

2009-2010 Strategic Plan

NYSERNet, Inc.

December 11, 2009

Introduction

Working together over more than two decades, the NYSERNet community has created five generations of advanced networks, network tools and capabilities. Our initial 56 kbps backbone, though dwarfed in capacity by the optical infrastructure now spanning the State, nevertheless marked the Internet protocol's first use outside the federal government. We produced two commercial companies, PSI, the world's first ISP, and AppliedTheory, whose national backbones became part of Cogent and Level(3).

The mutual trust that we enjoy and rely on today was reinforced in no small measure by the Board's great stability during our first decade, as we collectively explored and advanced this new technology called the Internet. Though during the last ten years the NYSERNet Boards have changed almost completely, with only one founding member remaining, that trust, our daring to take calculated strategic risks, and commitment to achieving something greater together than any of us could alone, persist.

Our performance over this decade of transition bears out this claim. We moved from dependence on carrier circuits to transport control. Despite both the dotcom collapse and September 11, 2001, we collectively risked everything to deploy fiber in New York City. Today that fiber project is robust and sustainable, its major unexpected benefit a preeminent global peering point for research and education in our space at 32 Avenue of the Americas. Our business continuity center in Syracuse provides a resource that other regions admire and envy.

Every two years NYSERNet gathers for a strategic retreat, to assess, consolidate, and look forward. In September, 2008 at Mohonk Mountain House, we assessed progress on our most recent initiative, the data center, and all earlier projects, and captured a host of ideas building on current initiatives or moving in altogether new directions. The global financial crisis, begun then, has deepened significantly since. But the last few years have also seen the emergence of powerful optical research networks, very high performance computers and instrumentation within New York, nationally, and globally, and new activism on global challenges such as energy, environment, and health care. That Mohonk retreat began a discussion, continued through subsequent Board Meetings, to incorporate the current environment's new opportunities and threats, and set forth our objectives, now enunciated in this strategic plan.

Our Mission

NYSERNet advances network technology and related applications to satisfy needs common to the institutions comprising New York State's research and education community, providing a forum for exploration of the opportunities and challenges these innovations present.

Guiding Principles

The ends NYSERNet pursues to accomplish its mission evolve, but the manner in which these ends are first determined and then arrived at is immutable, reflecting our heritage as the most enduring partnership in the global networking community. In keeping with this heritage, NYSERNet commits to fulfilling its mission through service to member institutions guided by these principles:

- Collaboration among members to develop and deploy cost-effective solutions to technology-related problems of mutual interest and concern.
- Use of both innovative tools and proven technology to address cutting edge challenges.
- Taking measured strategic risks, promoting advances that enhance the value of membership and creating sustainable resources perhaps impossible without the NYSERNet community's collaborative commitment.
- Forging relationships with industry and government leaders willing and able to help advance our member-driven agenda, while making our experience and energy available to these communities, to help the State and nation chart its technology future.
- Promotion of trust through communication, member involvement and transparency.

Opportunities

Special opportunities are emerging. We have a powerful statewide optical infrastructure, but remain far from fully using its capacity. Increasing demand on the R&E network offers an opportunity to model new ways to provide more bandwidth to all users. Through the BOCES, New York's K-12 community is connecting to the R&E network in greater numbers, learning to leverage the network's capabilities to enhance education.

NYSERNet's unprecedented visibility and standing with leaders in the state and federal governments have given us a voice in the national discourse on technology goals and hold the potential to secure valuable political and financial support for our efforts. Examples of this high profile include participation on the State's Broadband Council, interaction with policymakers in Albany and in Washington, and joint efforts with IBM to bring researchers together around "grand challenge" problems. The hard problems that the nation must confront include questions that are computing and data intensive in nature, spanning the scientific disciplines, and needing coordinated, reinforcing input from academe, industry, and government. Its extraordinary academic institutions,

research headquarters for IBM, GE, Corning, and many other agile, innovative companies make New York State a natural leader in these efforts, its prospects enhanced by the NYSERNet community's cooperative history.

NYSERNet has a culture and proud history of being agile in times of change, assessing new circumstances, identifying threats and areas of opportunity, and collectively making strategic commitments, sometimes high risk, to create new capabilities for NYSERNet members, and to cost effectively improve core capabilities. These are times of extraordinary change. The American Recovery and Reinvestment Act of 2009 (ARRA) enacts \$787 billion in appropriations and tax cuts over 2009 and 2010. Many ARRA provisions affect our community directly and indirectly, including billions in one-time additional funding to NSF, NIH, Education, Energy, NASA, and other agencies to whose missions our member organizations routinely contribute. An additional \$7.2 billion to Commerce/NTIA and to Agriculture/RUS will extend broadband, and separate funding will promote development and use of interoperable health information technology. NYSERNet and its members have already been engaged in applying for directly or working collaboratively to create competitive applications for funds in the networking and scientific areas, with more such effort anticipated for the next, larger national investment in broadband.

The climate of change in policy surrounding telecommunications and networking is perhaps most significant of all. NYSERNet has been engaged helping to inform policymakers at the federal and State levels, working with carriers and, as noted above, helping bring New York's extraordinary academic and corporate research communities together to help frame the questions surrounding the major challenges which, ideally, will then inform telecommunications policy.

Goals

Though network and network-related technologies, services, and member institutions' needs are changing at an accelerating rate, their details fluid and reflective of immediate influences, overarching goals remain remarkably constant. Those goals are as follows.

- Evolve NYSERNet's network assets – the R&E Network, NYC fiber, and peering facility in Manhattan – to ensure member institutions have affordable access to capabilities essential to advancing their education and research agendas on a State, national, and global level.
- Develop the business continuity center in Syracuse, continually reassessing how this sophisticated flexible space and the staff who run it can adapt to members' needs.
- Use our membership's vast knowledge, existing investments in network technology, and our reputation as a trusted partner to promote knowledge and technology transfer within our community and, working with our members collaboratively anticipate, design, and deliver new services and capabilities of value to member institutions.
- Sustain our visibility in forums where the future of research and education networking both nationally and globally is being deliberated and advanced,

promoting positions consistent with our members' interests, and helping shape the future of advanced networks and network services.

- Continue to build our relationship with the corporate community in New York and with government, particularly NYSTAR, to help foster an environment of collaboration to position New York for leadership on "grand challenge" research problems.
- Leverage our standing with government leaders and prominence in advanced networking to secure support and funding for high-value efforts advantageous to our members, and work with member institutions on their own technology funding initiatives.

Strategies

The goals identified above intertwine. So too do the strategies we have identified to secure their accomplishment. Thus achievement of any one of these strategies generally has the effect of advancing multiple of our goals, so the bilateral dependencies are many to many. However, strategies naturally fall into broad groupings: overarching efforts building NYSERNet's role and leveraging the value of its core competencies, concrete developmental work, enhancement of existing services, and efforts related to assessment and a feedback loop between the Board and the company. All of this is dynamic, as some exploratory efforts will not bear fruit while others will become core products, existing core services may either be improved or retired depending on the outcome of exploratory work and/or changes in the industry. Grouped in this way, the strategies are as follows.

Overarching Strategies

- Leverage our community cohesiveness and trust, also our ties with Internet2, EDUCAUSE, NLR, and other national communities, to build usage of the NYSERNet Research and Education Network and its supporting optical infrastructure, furthering members' efforts to advance their research and education agendas.
- Engage corporations with research interests in New York State to promote their awareness of the network capabilities NYSERNet offers and the potential of these capabilities to enhance their research efforts and support collaboration with researchers at member institutions.
- Expand our role as advisor regarding science and technology matters at the state and federal levels, serving as an expert resource on advanced networks and services.
- Remain part of the state and national discourse on addressing "grand challenge" problems such as energy, environment, and health care whose solutions are data intensive and network dependent.

Developmental/Exploratory Strategies

- Explore the feasibility of offering members a Remote Online Backup Service, based in the Syracuse data center and managed by NYSERNet, as an alternative to offsite tape-based storage of mission critical data.

- Enhance our ability to serve our members in the event of a natural or man-made disaster by enhancing survivability of NYSERNet's own business continuity environment.
- Explore the feasibility of offering other services our members have expressed interest in such as managed DR/BC communications (DR-in-a-Box) and emergency network management support (eNMS).
- Collaborate with the New York's BOCES Regional Information Centers (RICs) to develop training and services designed to advance use of the R&E network by K-12.
- Engage the RICs in a demonstration project designed to establish the unique value the NYSERNet Research and Education Network offers as a tool for promoting student learning.
- With the New York State Office of Cyber Security and Critical Infrastructure Coordination (CSCIC), coordinate communication about events potentially impacting the security and integrity of members' wide area network environments.
- Explore other opportunities for contributing to the work of securing our nation's cyberinfrastructure.
- Become a resource to member institutions as they incorporate federated identity capabilities into their campus IT resources.

Enhancement Strategies

- Explore commercial Internet service alternatives for member institutions seeking a solution that optimally combines choice, performance, price, reliability, effort and risk.
- Continually explore options for extending the reach of our most advanced networks and network services to members whose geographic location present cost and/or technical barriers
- Promote knowledge transfer to and among member institutions by expanding on the educational services we have historically offered, e.g., NYSERTech, including offering Internet2 days on member campuses and hands-on technical training events in New York City and Syracuse.
- Expand our role in planning for and delivering the annual NYSCIO Conference, with a goal of participation in the annual event reflecting the diversity of New York's higher education community.
- Redesign NYSERNet's website to enhance communication with our members and other stakeholders and provide information relevant to our community.
- Produce an annual report documenting our accomplishments and sharing our plans as a vehicle for informing our stakeholders, optimizing transparency, promoting accountability, and raising awareness among prospective members and other interested parties.

Assessment and Board Feedback Strategies

- Reevaluate the number, nature and scope of NYSERNet's working groups to evolve new forums where member representatives can discuss critical issues and concerns informing an actionable agenda for NYSERNet.

- Regularly review at the internal executive level the scope of and progress on activities, making adjustments on levels of effort and time commitments to best meet company priorities.
- Engage the Net Steering Committee, Org Program Committee, and/or Org Technical Committee for input on activities, particularly for products under development, for guidance and as a mechanism for Board input between meetings.