

Saranac Central School District Technology Plan 2007-2010

Introduction

In the late 1990s Saranac implemented a technology project that addressed its infrastructure. Classrooms got 6 data drops, and district buildings were connected via fiber. Fiber also formed the backbone of our system. This was the beginning of rebuilding our system from the ground up. Several new servers were added. Email, which had been outsourced, was brought in-house and available to all faculty and staff. File servers provided storage for faculty, staff, and students as well. To adhere to CIPA regulations we implemented internet filtering. A firewall was added for security. Our technology committee mainly addressed issues in the classroom. There, integration was the key concept. Computers, along with other technologies, were to be placed in the classrooms. Technology was to be integrated into existing curricula. Saranac has two computer labs for general student use; one in the middle school and one in the high school. Our high school business department has two computer labs. The high school has a mini-lab for class use. There are no computer labs in our elementary buildings. Libraries server as media-centers in our elementary buildings.

Mission and Vision Statement

The Mission of the District technology plan is to provide an environment in which all students are empowered to become lifelong learners and effective users of information, ideas, and technology.

In the competitive, information-rich world of the 21st Century, we must adopt better ways to facilitate learning, to prepare students to become both productive members of the work force and valuable members of our communities. Today, this challenge is greater than ever, not just because of the diversity of backgrounds, languages, preparedness, motivation, and support of the student population, but also because of the dynamics of the workplace they will enter.

One of the biggest advantages of integrating information technology in schools is the opportunity for innovation. With schools and universities increasingly connected through the Internet and other networks, teachers will be able to use technology in new and creative ways. Technology in classroom is naturally suited for learning the ideas of teamwork and problem solving - old concepts, but more relevant than ever. By incorporating information technology into education, educators will be able to create new opportunities for learning, and in doing so, create new opportunities for students. When properly integrated into the classroom, students become active learners instead of passive sitters, test takers, and clock-watchers. They are inspired to excel and become passionate about learning, not only for today, but for life - which is indispensable for success in the workplace and in the community.

Technology should be used across the curriculum to facilitate a student-centered learning environment. This will require that computers, communications networking, and multimedia equipment be fully integrated into our schools so that they are available when and where they are needed to improve learning. This will provide tools for effective presentation of course materials, as well as resources for helping students learn how to access, analyze, and interpret information, and how to communicate their findings.

Additionally, classrooms must be equipped with teachers in mind. Today's pedagogy requires technological tools. Ceiling mounted projectors and Smartboards are examples of technology used by teachers for instruction.

Technology Goals

Goal 1 – Implement technology to improve achievement for students with disabilities

Strategies

- 1.1 Identify teachers who work with students with disabilities
- 1.2 Implement technologies to properly identify and support students with disabilities

- 1.3 Research and identify software and hardware to improve achievement in content areas
- 1.4 Implement professional development to train teachers and related service providers to use software
- 1.5 Acquire assistive technologies to improve functional capabilities of students with disabilities

Goal 2 – Improve student technology skills to compete in the international labor market

Strategies

- 2.1 Improve communication skills using writing, audio, video, and presentation tools
- 2.2 Improve data analyzing and interpreting skills
- 2.3 Improve problem solving strategies

Goal 3 – Develop a new structure for professional development and support

Strategies

- 3.1 Designate a technology leader for each school building
- 3.2 Investigate recent research regarding the most effective methods to integrate technology in classrooms
- 3.3 Look at our past practices
- 3.4 Recommend and implement a new professional development procedure
- 3.5 Provide training for non-teaching staff to increase efficiencies

Goal 4 – Improve school/community communications

Strategies

- 4.1 Study student information systems that support a web portal for parents to view their children’s grades, attendance, and discipline records
- 4.2 Upgrade or supplement our SIS to provide school to community link
- 4.3 Provide all teachers, staff, administrators, and departments with electronic bulletin boards (eBoards) and strategies on how to use them for better school/community communications
- 4.4 Upgrade our district’s website to provide more school information for our community

Goal 5 – Improve technology infrastructure

Strategies

- 5.1 Upgrade switches to PoE
- 5.2 Increase bandwidth between buildings and closets
- 5.3 Replace managed muxes with managed switching equipment
- 5.4 Upgrade primary switches to gb switches
- 5.5 Virtualize servers and add SAN drives
- 5.6 Develop a plan to implement wireless technology in our district
- 5.7 Install ceiling projector mounts in classrooms
- 5.8 Upgrade to VoIP
- 5.9 Install UPS devices in all closets

Projected implementation timetable

	Goals and strategies	2007-2008	2008-2009	2009-2010
Goal 1	Implement technology to improve achievement for students with disabilities			
1.1	Identify teachers who work with students with disabilities	X	X	X
1.2	Implement technologies to properly identify and support students with disabilities	X	X	X

1.3	Research and identify software and hardware to improve achievement in content areas	X	X	X
1.4	Implement professional development to train teachers and related service providers to use software	X	X	X
1.5	Acquire assistive technologies to improve functional capabilities of students with disabilities	X	X	X
Goal 2	Improve student technology skills to compete in the international labor market			
2.1	Improve communication skills using writing, audio, video, and presentation tools	X	X	X
2.2	Improve data analyzing and interpreting skills	X	X	X
2.3	Improve problem solving strategies	X	X	X
Goal 3	Develop a new structure for professional development			
3.1	Designate a technology leader for each school building	X	X	X
3.2	Investigate recent research regarding the most effective methods to integrate technology in classrooms	X	X	X
3.3	Look at our past practices	X	X	X
3.4	Recommend and implement a new professional development procedure		X	
3.5	Provide training for non-teaching staff to increase efficiencies	X	X	X
Goal 4	Improve school/community communications			
4.1	Study student information systems that support a web portal for parents to view their children's grades, attendance, and discipline records	X		
4.2	Upgrade or supplement our SIS to provide school to community link		X	
4.3	Provide all teachers, staff, administrators, and departments with electronic bulletin boards (eBoards) and strategies on how to use them for better school/community communications	X	X	X
4.4	Upgrade our district's website to provide more school information for our community		X	X
Goal 5	Improve network infrastructure			
5.1	Upgrade switches to PoE			X
5.2	Increase bandwidth between buildings and closets			X
5.3	Replace managed muxes with managed switching equipment			X
5.4	Upgrade primary switches to gb switches			X
5.5	Virtualize servers and add SAN drives		X	X
5.6	Develop a plan to implement wireless technology in our district		X	X
5.7	Install ceiling projector mounts in classrooms		X	X
5.8	Upgrade to VoIP			X
5.9	Install UPS devices in all closets		X	X

Performance Standards

Performance Standard 1: Operate

All Saranac Central School District students will operate technology-based tools.

1. Use input devices to enter information.

2. Use output devices to retrieve information.
3. Use applications for learning and productivity.
4. Use system applications to manage and maintain technology tools.
5. Diagnose and solve common technology problems.

Performance Standard 2: Inquire

All Saranac Central School District students will use technology to locate, manage, and evaluate information.

1. Identify and locate information sources using technology.
2. Choose sources of information from a variety of media.
3. Use technology to examine and select relevant information by applying research strategies.

Performance Standard 3: Synthesize

All Saranac Central School District students will use technology to explore ideas, solve problems, and construct meaning.

1. Apply appropriate technologies for exploring, interpreting, and expressing ideas.
2. Use technology to observe, analyze, and draw conclusions.
3. Collaborate using technology to solve problems.
4. Construct meaning or create new knowledge by evaluating, combining, or extending information using multiple technologies.

Performance Standard 4: Communicate

All Saranac Central School District students will use technology to express ideas and exchange information.

1. Convey ideas to a variety of audiences using various publishing and communication media.
2. Utilize communication technology to exchange ideas and information.
3. Explore new and innovative methods for interaction and the exchange of ideas.

Performance Standard 5: Appreciate

All Saranac Central School District students will use technology responsibly and understand its impact on individuals and society.

Students meeting this standard will:

1. Evaluate the potentials and limitations of technology.
2. Discriminate between responsible and irresponsible uses of technology.
3. Respect others' rights to privacy in electronic environments.
4. Demonstrate ethical and legal behavior in regard to intellectual property.
5. Examine the role of technology in the work place.
6. Evaluate ways that technology impacts culture and the environment.
7. Recognize responsible ways to integrate emerging technologies into their daily lives.

Professional Development

Research indicates many important elements necessary for effective professional development. The National Staff Development Council lists standards for effective staff development. Our experiences agree with the research and standards listed by the NSDC. While we believe most schools use a variety of staff development approaches, we feel one part is often missing. The missing part is in-the-classroom follow-up training. Our technology department will meet with curriculum department leaders to identify change in curricula. We will then match technology, professional development, and teaching strategies to produce effective technologically integrated activities. It is at the stage of implementation that in-the-classroom follow-up training needs to occur. Too often have we seen teachers develop good activities during staff development training that never are implemented. We believe it is the time gap between development of the activity and implementation where teachers lose their newly learned skills and confidence. Technological support does not only mean the

hardware is in working order. Proper support includes any assistance necessary for the successful completion of the activity.

Budget

We use a variety of funding sources to support technology at Saranac. At the local level, the District’s budget includes funds for supplies, software, hardware, and personnel.

Current year budget (2007-08)

- Technology coordinator - \$32,393
- NERIC full-time technician – 59,058
- NERIC part-time technician – 14,765
- NERIC hardware/infrastructure maintenance – 86,758
- NERIC StarWeb (SIS) – 39,149
- BOCES hardware maintenance – approx. 9,140
- Hardware (computers, printers, etc.) – 71,500
- Software – 30,000
- Supplies – 19,000

The budget figures for the 2007-08 school year (above) represent typical on-going costs. The District also receives funds from federal and state programs specifically designated to support technology. The budget provides for maintenance of all equipment and professional development. The following table represents the requested budget through the 2009/10 school-year.

Year	Supplies	Software	Hardware	Servers	Network supplies	Network equipment
2008/09	25,000	30,000	75,000	10,000	2,000	5,000
2009/10	26,250	36,750	78,750	10,500	2,100	5,500

Technology Assessment Computer and Peripheral Inventory (Current)

<u>Equipment</u>	<u>Classrooms</u>	<u>Computer Labs</u>	<u>Libraries</u>
Computers	659	116	42
Printers	147	10	7
Digital Cameras	35		
Digital Video Cameras	25		
Projection Devices	36		4
Scanners	15	3	

3-Year Plan

Each school year we need to replace approximately 125 computers and 30 printers that have become outdated. Upgrades to our data distribution system are necessary to provide an adequate infrastructure that will move information effectively and efficiently. Network storage needs are increasing. Servers must be replaced on a schedule to meet district demands.

The table below shows needs related to equipment acquisition and replacement over a 3-year period.

<u>Equipment</u>	<u>2007/08</u>	<u>2008/09</u>	<u>2009/10</u>
Computers	125	125	125
Printers	30	30	30

Servers	3	3	3
Switches	3	3	3

Additionally, new technologies must be purchased over this time frame.

Evaluation Process

We must constantly evaluate the effectiveness of using technology. No one tool can measure this effectiveness. We employ a variety of tools including surveys, self-assessments, inventories, mapping the curriculum, and interviews. These tools will measure, among other things, proficiency levels, curriculum projects, goals, types of integration, comfort levels, number, types, and location of resources, learning objectives, examples of projects, classroom setup, instructional practices, and management strategies.

Assessment of Telecommunication Services

Demand for greater bandwidth is everywhere. Bandwidth is only one part of a complex system necessary to provide school wide telecommunication services. At Saranac we have a fiber backbone, switched data closets, and a shared DS3 connection to the internet. Our phone system is integrated into our data network. We have several means of monitoring system performance. NERIC (Northeast Regional Information Center - BOCES) provides monitoring of our gateway to the outside world. Local, internal monitoring is performed by various software. Internal network performance affects telecommunication services to classrooms and libraries. In addition to monitoring our network we comply with CIPA (Children's Internet Protection Act).