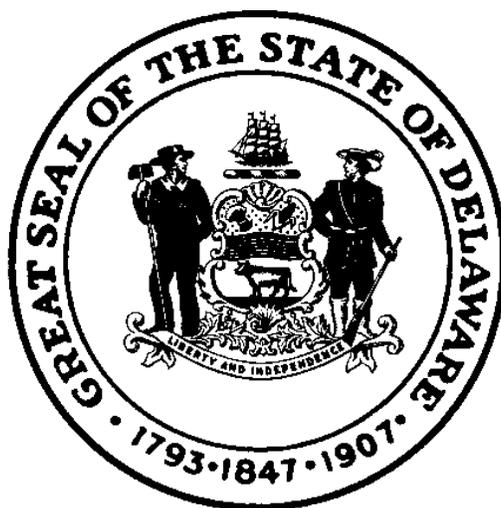


DELAWARE CENTER FOR EDUCATIONAL TECHNOLOGY

ACTION PLAN FY2003

NOVEMBER 2001



STATE OF DELAWARE

Delaware Center for Educational Technology Action Plan

Introduction

The Delaware Center for Educational Technology (DCET) has completed a large-scale, state government project, on-time and under-budget, that made Delaware the first state in the nation to have Internet and wide-area network connectivity in every public school classroom. In a very short time, Delaware has leaped from being technology-poor to having the most solid foundation for growth in deploying education technology. These efforts resulted in the DCET receiving a Computerworld Smithsonian Award for classroom networking.

Acquiring and putting in place the operational resources to achieve and nurture the full potential of the Delaware Education Network and the information superhighway in our classrooms are the most challenging and important “next steps” for ensuring successful deployment of these new resources. There is consensus in Delaware that, beyond infrastructure, DCET should focus on three major areas to make these next steps: procurement, support/maintenance, and professional development. The Action Plan of DCET reflects this consensus.

To achieve these goals, we must build on the work of others. The DCET Action Plan does just that. The Plan builds upon the previous and current efforts of the school districts, the Department of Education, the Department of Technology and Information, and DCET. The Action Plan is also consistent with the national goals for education technology established by the United States Department of Education.

- All teachers in the nation will have the training and support they need to help students learn using computers and the information superhighway.
- All teachers and students will have modern multimedia computers in their classrooms.
- Every classroom will be connected to the information superhighway.
- Effective software and on-line learning resources will be an integral part of every school's curriculum.

Delaware is far along in achieving these goals and is ready to take the next steps.

This Plan aims to synthesize the information generated by the many committees that have worked toward the ultimate goal of bringing technology to the classroom and to give direction for further initiatives and funding. This Plan also addresses issues of policy and management in attempt to better coordinate and plan information policy with the state's education system. This Action Plan will present, prioritize, and determine an implementation schedule for the strategic initiatives in the DCET Strategic Plan that:

- follows the intent of the General Assembly,
- is consistent with technology plans at the federal and state level, and
- reflects the aspirations and goals of educators throughout the state.

Action Plan Priorities

The Delaware Center for Educational Technology FY2003 Action Plan identifies the top priorities for FY2003 and the ongoing activities DCET will be involved with during the year.

The top priorities for FY2003, in order of priority, are:

1. Switches and Electronics for the Districts
2. Technology Block Grant
3. Instructional Technology Research and Evaluation

The ongoing activities are:

- Maintenance and Support of Wire, Cable, and Electronics
- Windows 2000 Implementation, Migration, and Administration
- Professional Development with respect to Technology
 - Delaware Instructional Technology Conference
 - Delaware Technology Academy
 - Traveling Integration Lab
 - Marco Polo Professional Development
- Annual School Technology Survey
- Collaboration with Department of Technology and Information
 - Dial-in Access for Educators
 - Web-Hosting
 - E-mail for Faculty and Staff
 - Internet, Copyright, and Filtering Policies
- Procurement Agreements
- Communication
- Integrated Pupil Accounting and Curriculum Management

The FY2003 DCET Action Plan addresses 17 of the 25 strategic initiatives from the Strategic Plan. The top priorities directly relate to 5 strategic initiatives and the ongoing activities directly relate to 15 strategic initiatives. Each priority and activity is discussed below.

FY2003 Priorities

Technology Block Grant

Support Infrastructure (Strategic Initiative #16)

Establish formal organizational roles and responsibilities for a variety of support personnel, both technical and curricular, at the school, district, and state levels.

Help Desk (Strategic Initiative #17)

Develop and staff a centralized help desk to provide support for wide scale applications with reasonable response times to the educational community.

During FY2000, the DCET created a *Long-term Maintenance and Support of the Statewide Education Telecommunications Network Report*. This report shows a need for additional maintenance and support personnel at the district and school level. A \$2.5M Block Grant for Maintenance and Support was requested that would supplement the ongoing maintenance and support provision from the classroom technology funding for ongoing equipment maintenance, repair, replacement, contractual services, and support personnel.

The need for maintenance and support of technology is without question, and the Legislature committed \$1.0 million to a Technology Block Grant beginning in FY2001. This is an excellent start to addressing the maintenance and support issues across the state.

Due to budgetary constraints, the request of an additional \$1.5 million to complement the \$1.0 million Technology Block Grant for maintenance and support that began in FY2001 should be construed as a placeholder to keep the Administration and the Legislature aware of the issue.

Recommendation

- *Request an additional \$1.5 million to complement the \$1.0 million Technology Block Grant for maintenance and support that began in FY2001.*

Switches and Electronics to the Districts

Improvement (Strategic Initiative #7)

Continue to implement improvement and expansion of the infrastructure to meet the needs of the educational community.

In 1995, the Delaware Center for Educational Technology was charged to wire all the classrooms in Delaware, providing Internet access to all students and staff in Delaware public schools. During the next three years, the classrooms in Delaware were wired with the most cost effective and best available technologies.

The selection of a 3Com switched hub environment was made after extensive deployment and testing of many different solutions. Vendors designed, deployed and maintained their own solutions for DCET and DTI to evaluate, and after weeks of testing the 3Com solution was selected and deployed statewide. At that time this was a robust network that provided high-speed Internet and Intranet access to students and staff.

With the development of newer technologies and the proliferation of workstations in the classroom this network infrastructure is reaching the end of its useful life cycle. Typically, technology components need to be replaced every three to four years while a majority of the education infrastructure is six years old and in need of upgrading. With the emergence of IP telephony, streaming video, and high speed networking components, now is the time to make the next step and replace the existing electronics with newer, faster electronics that will scale to the growing technological needs of Delaware schools.

During FY2001, the DCET issued an RFP for LAN Electronics utilizing a similar selection process as stated above. After all interested vendors provided their best possible design to be implemented in Delaware public schools, the selection committee recommended the 3Com solution and embarked on the initial phase of upgrade installations. There were 145 schools listed in the RFP and there was available funding to complete 76 of the schools. *The project is now at a standstill because the DCET has expended all available funding.*

The DCET's plan is to request \$500,000 a year for the next five years and systematically replace the remaining 10Mb shared network with the 100Mb switched network solution that will enable districts to use voice and video technologies while providing the infrastructure necessary for the deployment of multi-computer classrooms. This has been done in an equitable method, providing infrastructure upgrades to those schools that are in dire need first then bringing the other schools on line as funds become available.

The DCET began upgrading the electronics in the schools in March 2001 with expenditures of \$1.5 million through November 2001. The schools with identified performance issues were upgraded first. There are 64 schools that have not been upgraded. The cost to upgrade these schools is \$1.2 million. These remaining schools have no critical performance issues documented, but there are 17 schools that have identified concerns. In many cases, the DCET will be able to address the issues with a redeployment of electronics recovered during the upgrade process.

A bigger concern than the performance issue is the life expectancy of the current electronics (switches and hubs). The electronics have been running 24 hours a day / 7 days a week for 3 to 5 years depending upon initial installation date. The life expectancy is 5 years and anything beyond the initial 5 years is borrowed time.

The DCET is starting to see a higher rate of failure. The initial installation took place from 1996 to 1998. Through the end of 1999, there were few failures. Over the past two years, the rate of failure has increased and is anticipated to continue to increase over the next two years. In addition, 3Com has ceased most support functions on these devices in accordance with their Product Obsolescence Policy and the repair option will cease in the next 2 years. Of course, the cost of repair may now exceed the cost of replacement. The biggest concern with obsolescence and the lack of support is that of software. The software will not be updated to address issues with new hardware.

Currently, the DCET has reallocated \$100,000 in the current operating budget to handle schools with identified concerns through FY03. A reevaluation will have to take place prior to FY04 based mainly on failure rather than performance issues to determine whether additional funding will be needed beyond the \$100,000.

Due to budgetary constraints, the request of \$500,000 to begin a replacement cycle to upgrade the electronics in the schools should be construed as a placeholder to keep the Administration and the Legislature aware of the issue realizing that the DCET has reallocated \$100,000 in the existing operating budget to cover upgrades as needed.

Recommendation

- ❑ *The DCET should continue the commitment to incrementally upgrade the electronics in all schools from a switched/hub network to a gigabit switched network at a cost of \$500,000 per year.*
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Instructional Technology Research and Evaluation

Resources (Strategic Initiative #5)

Establish and maintain a statewide resource base of best practices in staff development and technology utilization.

Needs Assessment (Strategic Initiative #20)

Establish a process for identifying ongoing technology and human resources needs at the classroom level.

An important part of integrating technology into the instruction in the classroom is the selection of appropriate electronic materials. Research and evaluation of electronic teaching materials is necessary to identify appropriate materials and their uses. The DCET needs to conduct formal research and evaluation on electronic teaching tools and materials that will lead to recommendations on appropriate uses of technology in the classroom.

The research should focus on two components: (1) the technology tools used for delivery and (2) the electronic material delivered by the tools. The research should include, but is not limited to, technology tools, such as, hand-held devices (e-book, Palm Pilot, etc.), laptop computers, and desktop computers, and instructional materials such as, electronic books, electronics textbooks, and material on CD. The research focusing on the material should include, but is not limited to, (a) instructional benefits, (b) relevancy of material related to curriculum and content standards, (c) quality of material, (d) logistics, such as, how the electronic material is received or downloaded, (e) feasibility, (f) cost benefits, and (g) quality of technology delivery.

Due to budgetary constraints, the request of \$50,000 for research and evaluation should be construed as a placeholder to keep the Administration and the Legislature aware of the importance of conducting research and evaluation as part of the decision-making process.

Recommendation

- ❑ *The DCET should request \$50,000 to organize a pilot and conduct a formal evaluation of electronic teaching materials.*
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Ongoing Activities

Maintenance and Support of Wire, Cable, and Electronics

Support Infrastructure (Strategic Initiative #16)

Establish formal organizational roles and responsibilities for a variety of support personnel, both technical and curricular, at the school, district, and state levels.

Help Desk (Strategic Initiative #17)

Develop and staff a centralized help desk to provide support for wide scale applications with reasonable response times to the educational community.

The highest priority item under the maintenance and support initiatives is “establish formal organizational roles and responsibilities” for the Delaware Education Network. This involves determining what organization, and who within the organization, is responsible for each “piece of the puzzle” and ensuring the operational and support commitments to that organization. The organizations involved in the Delaware Education Network are the Department of Education, the Department of Technology and Information, the Delaware Center for Educational Technology, and the districts/schools. Although there are different organizations responsible for certain areas of the infrastructure and statewide applications, all organizations must work cohesively to maintain the integrity of the network.

The Delaware Center for Educational Technology is responsible for maintaining and supporting all components (electronics and wiring) installed during the wiring project. The DTI help desk will serve as the first point of contact for support. From the help desk, calls will be logged and issues related to electronics (switches and hubs) and wiring in the schools will be routed to DCET. DCET personnel will evaluate the situation and respond with DCET personnel with spare parts or request a “time and material” service call from an outside vendor. This is in lieu of a service contract with an outside vendor. Through the help desk log, DCET will be able to analyze the extent of the support need for switches, hubs, and wiring installed in the schools. If the need warrants the service, a maintenance contract will be explored.

Staff time of the Consultant: Technical Support, and two Consultant: Technology Technicians, in conjunction with spare parts, technical support contracts, time and material contracts, and enterprise network management tools provide for the maintenance and support of the wire and electronics that was installed during the wiring project.

Recommendations

- ❑ *Continue to work with the DTI Help Desk to provide maintenance and support of the electronics and wiring installed by DCET. DCET receives an annual appropriation (\$100,000) from the General Assembly for spare parts (replenish/repair), technical support contracts, time and material contracts, enterprise network management hardware/software, and update wiring blueprints.*
- ❑ *Continue to implement long-term maintenance and support strategies identified in the Long-term Maintenance and Support of the Statewide Education Telecommunications Network report.*

Windows 2000 Implementation, Migration, and Administration

Improvement (Strategic Initiative #7)

Continue to implement improvement and expansion of the infrastructure to meet the needs of the educational community.

Support Infrastructure (Strategic Initiative #16)

Establish formal organizational roles and responsibilities for a variety of support personnel, both technical and curricular, at the school, district, and state levels.

The DCET has taken the lead role in supporting education's Windows 2000 domain. After considerable discussions and consultations with DTI, Microsoft and Windows 2000 consultants, it was determined the DCET was best suited to meet the districts' needs with regard to the implementation and administration of Windows 2000 in the Delaware Education Network.

Recommendations

- ❑ *Continue to work with the districts and DTI to provide technical expertise, consulting, and training in the implementation of Windows 2000.*

Professional Development with Respect to Technology

Process (Strategic Initiative: #1)

Establish a structure and process to develop, manage, and assess staff development for technology.

Access (Strategic Initiative #2)

Provide access to ongoing professional development opportunities for instructional staff in the utilization of technology.

Integration (Strategic Initiative #3)

Identify the substance and sequence of technology skills and concepts and augment content standards to include specific technology applications into instructional curriculum.

Production (Strategic Initiative #4)

Provide technologies and training to improve operational productivity.

The goal of the Delaware Center for Educational Technology professional development effort is to identify and recommend a core set of technology skills for educators, enhance the districts' ability to deliver training, and enable all districts to develop and draw on a common pool of resources related to professional development for technology.

The Delaware Center for Educational Technology provides two major professional development opportunities for teachers: the Delaware Instructional Technology Conference in the spring and the Delaware Technology Academy during the summer.

Recommendation

- ❑ *With respect to technology, the DCET will provide consulting services on professional development and planning and conduct staff development workshops for districts and organizations on an as needed basis.*
- ❑ *The DCET will continue to work with DOE, DSEA, DASA, universities, and colleges to ensure professional development meets teacher accountability requirements.*

Delaware Instructional Technology Conference

Access (Strategic Initiative #2)

Provide access to ongoing professional development opportunities for instructional staff in the utilization of technology.

The Delaware Center for Educational Technology sponsors the annual *Delaware Instructional Technology Conference*. The conference provides an opportunity for Delaware educators to share their knowledge, listen to nationally recognized speakers, and explore new and existing technologies.

Recommendation

- ❑ *Continue to sponsor, organize, and administer the Delaware Instructional Technology Conference.*

Delaware Technology Academy

Access (Strategic Initiative #2)

Provide access to ongoing professional development opportunities for instructional staff in the utilization of technology.

The Delaware Center for Educational Technology sponsors the *Delaware Technology Academy*. The Academy provides an opportunity for Delaware educators to receive professional development to learn how to integrate technology into the curriculum utilizing the latest technology trends in education.

Recommendation

- ❑ *Continue to sponsor, organize, and administer the Delaware Technology Academy.*

Traveling Integration Lab

Production (Strategic Initiative #4)

Provide technologies and training to improve operational productivity.

The DCET's Traveling Integration Lab provides teachers an easy way to try integrating instructional technology into their teaching by providing computers for the classroom. The lab consists of 8 Apple iBook laptop computers, an Airport network communication device (which means no wires!), and a color printer. The lab is delivered to the school and stays for up to two weeks. The DCET provides personalized professional development in the creation of lesson plans and activities, books with instructional ideas and strategies, and will work with the teacher in instructing the students in the use of the computers.

Recommendation

- ❑ *Continue to sponsor, organize, and support the Traveling Integration Lab.*

Marco Polo Professional Development

Production (Strategic Initiative #4)

Provide technologies and training to improve operational productivity.

The Marco Polo: Internet Content for the Classroom program is a partnership between the MCI WorldCom Foundation and seven renowned educational organizations that produce six discipline-specific educational Web sites. The MarcoPolo program provides standards-based Internet content for the K-12 teacher and classroom, developed by the nation's content experts. The DCET has an agreement with the MCI WorldCom Foundation to provide workshops to Delaware educators on the Marco Polo: Internet Content for the Classroom program. Each participant will investigate the six Marco Polo portals along with their standards-based curriculum and resources. Upon completion, participants are asked to return to their home school and share this information with their fellow teachers. The Marco Polo resources are located on the Web at <http://www.marcopolo.worldcom.com>.

Recommendation

- ❑ *Continue to support training offered through the MCI WorldCom Foundation for the Marco Polo: Internet Content for the Classroom program.*
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Annual School Technology Survey

Technology Survey (Strategic Initiative #25)

Conduct an annual technology survey of every school and determine what exists as a foundation for future planning.

One of the keys to planning and developing sound strategies for future expansion and maintenance and support is to understand your current state. As part of the Technology Block Grant, the DOE is required to report on expenditure of funds and will include information on what technology is in the school that needs to be supported.

In the future, information on technology in the schools should be included in the School Profiles.

Recommendations

- ❑ *Conduct an annual technology survey of every school.*
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Collaboration with Department of Technology and Information

Improvement (Strategic Initiative #7)

Continue to implement improvement and expansion of the infrastructure to meet the needs of the educational community.

Support Infrastructure (Strategic Initiative #16)

Establish formal organizational roles and responsibilities for a variety of support personnel, both technical and curricular, at the school, district, and state levels.

Help Desk (Strategic Initiative #17)

Develop and staff a centralized help desk to provide support for wide scale applications with reasonable response times to the educational community.

The Delaware Center for Educational Technology (DCET) works closely with the Department of Technology and Information and has agreements to provide services to education, such as, dial-in access, Web-hosting, e-mail for faculty and staff, and Web content filtering.

Recommendation

- Continue to work closely with the Department of Technology and Information to provide telecommunication services to the educational community.*

Dial-in Access for Educators

Dial-in Access (Strategic Initiative #11)

Develop recommendations for dial-in and/or remote access to Delaware technology resources for educators.

The Delaware Center for Educational Technology (DCET) has received an annual appropriation (\$175.2) from the General Assembly to subsidize 3000 OISNet dial-in accounts for educators. Individual accounts are available at \$25 per year with DCET subsidizing the remaining \$58.40. The accounts are available on a first come, first served basis.

Recommendation

- Promote the service, create additional accounts, and renew existing accounts. Monitor the status of the 3000 accounts, and request additional funding if the need for more accounts exists.*

Web-Hosting

Web Services (Strategic Initiative #8)

Develop and continually enhance the DENWeb World Wide Web site and provide for a World Wide Web presence for every school and district.

The Delaware Center for Educational Technology (DCET) has an agreement with the Department of Technology and Information to provide access to a Web site for every public school and district in the state at the www.k12.de.us. Schools and districts maintain the Web site, if they choose to use the site.

Recommendation

- Continue to provide Web sites for every public school and district in the state.*
- Continue to maintain and enhance the DCET Web site.*

E-mail for Faculty and Staff

Electronic Mail (Strategic Initiative #10)

Implement a statewide education e-mail system that can efficiently handle access and directory services for 10,000 teachers and administrators and be scalable to possibly serve 110,000 students.

The Department of Technology and Information provides an e-mail system to each district for faculty and staff e-mail accounts. The system allows for a domain name associated with the district, such as, capital.k12.de.us. Each district has an e-mail administrator responsible for maintaining the district's e-mail accounts.

Recommendation

- Continue to provide e-mail services to the districts.*

Internet, Copyright, and Filtering Policies

Internet, Copyright, and Filtering Policies (Strategic Initiative #23)

Define a standard statewide acceptable use policy and procedures to ensure that all educators and students agree to this policy. Such a policy must include Internet use, ethics, copyright and filtering, at a minimum.

The Department of Technology and Information has a standard acceptable use policy. The DTI filters Internet content using SmartFilter.

Recommendation

- Continue to filter Internet content and ensure that all districts and schools are abiding by the Children's Internet Protection Act.*

Procurement Agreements

Purchasing Policy (Strategic Initiative #24)

Establish a focal point within DCET, working closely with DOE and the Division of Administrative Services, for the preparation of technology related RFPs, vendor negotiations, and site licenses for software.

Even though State purchasing contracts are in place, education traditionally can receive better pricing than state government. Statewide purchasing agreements are being put in place for hardware and software. Subscription services agreements are being investigated.

The Delaware Center for Educational Technology is the lead agency for the Microsoft Select Education agreement, the Apple Computer Master Volume Licensing Agreement, and the Educational Resources Partnership Plus program. The Center has also worked out agreements with Dell Computer, Compaq Computer, and 3Com to give our school districts favorable pricing.

Recommendations

- Continue to pursue purchasing contracts in the interest of education.*
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Communication

Communication (Strategic Initiative #6)

Create communication channels to promote collaboration among educators on instructional and operational issues and best practices in technology utilization.

The Delaware Center for Educational Technology is committed to keeping lines of communications open with the districts and schools, and providing services that meet the needs of the districts.

Recommendations

- ❑ *The DCET will continue an open line of discussion with the districts concerning technical issues and support the monthly meetings of TechMACC, the organizational body of the district technology coordinators.*
 - ❑ *The DCET will continue an open line of discussion with the districts concerning professional development and conduct the monthly meetings of INTEGRATE, a statewide, instructional technology group with representatives from each district, DOE, DCET, DSEA, and other related organizations.*
 - ❑ *The DCET will support ITUG-DE (Instructional Technology Users Group – Delaware), an organization dedicated to bringing and using technology in the classroom. The DCET will host monthly meetings and maintain an informational e-mail list.*
 - ❑ *The DCET will continue open lines of communications with the DOE, and DCET will participate in DOE Administrative Council meetings and Curriculum Cadre meetings.*
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Integrated Pupil Accounting and Curriculum Management

IPAC (Strategic Initiative #15)

Support the Department of Education's Integrated Pupil Accounting and Curriculum (IPAC) Management initiative.

A charge of the DCET is to provide technical assistance to the DOE for matters related to the statewide pupil accounting system and the implementation of curriculum management systems.

Recommendations

- ❑ *Continue to provide technical assistance to the DOE in connection with the pupil accounting system and support the DOE in the efforts related to curriculum management.*
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