Introduction

Sometimes it can be more difficult to creatively fund and implement behind-the-scenes infrastructure, such as the 9 key areas of campus infrastructure discussed in the 2012 Q1 Special Report. However, funding that supports technology infrastructure investments and improvements can be sourced from a variety of channels, including from grants (federal, state and private), bonds and tax levies, technology fees and strategic partnerships.

Campus decision-makers also need to be made aware of how critical it is to invest in infrastructure and faculty, staff and students need to learn how the technology benefits them. For the first time, this Special Report Supplement will not only discuss the funding sources available to cover campus infrastructure improvements, but will also provide a professional development section that can work as both a guide to understanding the content in the Special Report on Campus Infrastructure and to be used for professional development training sessions. Along with the Special Report on Campus Infrastructure, this Special Report Supplement will help your institution prepare for a digital future.

Funding

Federal Grants

Race to the Top

Race to the Top, a federal funding program that poured billions of dollars into K-12 education, has equipped a number of school districts within winning states with new technology. School districts such as Johnston County Schools in North Carolina have been able to leverage this source to strengthen network infrastructure. Johnston County Schools plans to use a portion of its $2.5 million in Race to the Top funding to expand its wide area network (WAN) infrastructure in several school facilities. The initiative will include three years of support, switch routers and other components.1 The Race to the Top program has already had three phases of winners, and the program has not reached its end. The FY 2013 federal budget proposal asks for an additional $300 million in K-12 Race to the Top funding and establishes a $1 billion higher education Race to the Top funding source.

E-Rate

The national E-Rate program has been one of the largest and most consistent funding sources supporting networking and telecommunications for local education agencies. In order for districts to take full advantage of the program, it is important that they know their discount rate and expected level of matching funds. For example, nearly 70 percent of students at Tucson Unified School District in Arizona qualify for the National School Lunch Program, resulting in an E-Rate discount of approximately 78 percent. Based on this discount rate, the district was able to receive more than $1.6 million in reimbursement funding for telecommunications services and expects another $1.6 million for additional services and new equipment.2

Tucson USD received $1.6 million in E-Rate funding, which is the first of several commitments to reach $10.2 million to support telecommunications services and Internet access.
In addition, school districts should know which technologies and services are eligible for E-Rate funding discounts. The Universal Service Administrative Company (USAC), which runs the E-Rate program and reports to the FCC, has an eligibility services list available on its website that provides a list of both eligible and ineligible services and equipment. One of the newest additions to the eligible list is virtualization software. Jeff Davis County Schools in Georgia plans to use E-Rate funding to acquire network equipment and services to support a desktop and application virtualization initiative.3

Learning On-The-Go Pilot

Until recently, the FCC only supported on-campus wireless access, but last year the FCC launched the EDU2011 Learning On-The-Go Pilot, which is meant to take advantage of digital learning over wireless mobile devices. The pilot provides approximately $9 million to 20 winners for FY 2011-2012. The winners were selected by the FCC for projects that use innovative tools and models to expose students to online learning.

Private Grants

Private grant appropriations can range in size and the granting entity may have specific directions or broad objectives for the awarded entity to complete. School districts in North Carolina were able to leverage grants to support connectivity and mobility from their local telephone provider. Alleghany County Schools, Watauga County School District, Ashe County Schools and Avery County Schools received grants totaling $55,000 from the SkyLine Technology Education Grant Program. The program funds a variety of technologies ranging from classroom technologies to network connectivity and has already awarded $330,000 to districts in the area.4

While still in development, Illinois education officials have started plans to build a virtual network using up to $100 million in funding from the Bill and Melinda Gates Foundation and the Carnegie Corporation. The objective of the network is to give teachers access to a variety of resources in the cloud, ranging from lesson plans to student progress reports. The program is a pilot and Illinois is working in conjunction with Colorado, New York, North Carolina and Massachusetts.5

Private grants and contributions are even more popular at the higher education level. According to the 2011 Voluntary Support of Education Survey, private contributions to higher education institutions increased by 8.2 percent in 2011 to $30.3 billion.6 The Maine Community College System announced in January 2012 that it received a $10.6 million grant from the Harold Alfond Foundation for a campus expansion project. The grant includes $8.35 million in capital improvements at the Kennebec

The 2011 Voluntary Support of Education Survey noted that private contributions to higher education reached $30.3 billion in 2011.
by installing a Voice-over-IP (VoIP) system with $150,000 in funding from the Massachusetts School Building Authority (MSBA). The total request from the MSBA is just under $1 million and also includes $85,000 for a network and data center as well as $168,750 for computer and software upgrades.

The criteria for applying for school construction and renovation funding depends on the individual state, as does the amount that is approved to distribute. In California, the State Allocation Board (SAB) appropriated $923.8 million in December 2011 to support 377 school construction and modernization projects. That same year, the Ohio School Facilities Commission distributed over $890 million to school districts within the state. While a good portion of these construction projects may not include technology infrastructure upgrades, it is still a channel of funding that can be leveraged if technology infrastructure upgrades are included in capital improvement plans.

Referendums, Bonds and Tax Levies
Voter approved referendums, bonds and levies are common and highly leveraged across the nation. It is not only important to understand that these sources exist, but that most are time sensitive and there is no guarantee that they will be renewed by voters. Therefore, it is vital that these resources are used in a way so that they will continue to be sustainable. For instance, Little Chute Area School District in Wisconsin used a portion of its $1 million five-year, voter-approved referendum to fund server and desktop virtualization. This allowed the district to lower maintenance, energy and refresh cycle costs. The approach improved computing efficiencies, and provided better control over future costs.

Reallocation/Reinvestment Funding
Reallocation funding sources is another way to avoid cost increases while still upgrading infrastructure. The University of North Carolina at Asheville (UNCA) worked with the local telecommunications provider on a return on investment (ROI) proposal to reduce annual operating expenses on its existing Centrex phone system. The ROI proposal showed that by reallocating annual phone service funds into a five-year lease plan with built-in refresh, the university could install unified communications with a VoIP phone environment while...
simultaneously upgrading existing data network infrastructure to support the new solutions. The university is now halfway through its five-year lease agreement. The university is now halfway through its five-year lease agreement.9

At Purdue University, the Treasurer’s office is encouraging colleges and departments to consolidate server farms and data centers by providing the upfront funding needed to consolidate. The Treasurer’s Office recoups that money through cost savings over a four-year period. The estimated savings is between $25,000 and $50,000 for each data center consolidated, with the initial four consolidations to save over $200,000 after the first four years.10

Shared Resources

Education entities are looking for creative ways to partner and lower costs. One example can be found in Illinois where districts have partnered to build a statewide cloud-based infrastructure of shared applications, data storage and instructional technology resources called the IlliniCloud. The funding model driving the collaborative is to leverage economies of scale and to create services that depend on an operating budget. School districts pay a low-cost annual membership fee based on district enrollment. The IlliniCloud is just one example of partnerships and shared resource models springing up across the nation.

Professional Development Supplement

Beginning with this issue, the Converge Special Report series will be adding a professional development section to the funding report. This is in response to our readers who have expressed the desire to use the Special Reports as content for professional development purposes within their campuses and departments.

Specifically, we are providing two sections that can be used as seen fit. The first area addresses individual content understanding of the Special Report on Campus Infrastructure. The second section assists in framing discussions for topics in professional development settings.

Suggested Investigations for Understanding

1. The Mooresville Graded School District in Mooresville, N.C., has shown that improved educational outcomes can be possible with less money. How has the district achieved this?
2. How do you define the education superstructure?
3. Describe how virtualization can save money, while increasing IT personnel efficiencies.
4. How is visual learning changing technology requirements and student expectations in today’s classrooms?
5. Describe why configuring a wireless network is more complex than a wired network, especially on a school campus.
6. Why do efficiently run campuses use traffic analyzers on their networks? What are they expecting to find?
7. Why are our networks moving from IPv4 to IPv6? What will that entail?
8. What are the benefits of distributed intelligence in wireless access points?
9. Why are so many campuses moving to cloud services? What are the differences between public clouds and private clouds?
10. Networked storage can occur in a number of modes. Identify three of them.
11. Describe why deduplication is an efficiency tool for storage and back-up schemes.
12. Describe three ways technology can be used to improve physical security on campus.
13. How should a campus prepare itself to enable a student bring-your-own-device (BYOD) policy?
14. How can unified communications improve campus efficiencies?
15. Describe how academic analytical tools can be used to improve learning.

Suggested Topics for Group Discussion
1. What is our most pressing technological need?
2. What should we do to enhance mobility on our campus? What are our students telling us?
3. Can we consolidate or find partnering arrangements in order to save money or improve operational efficiencies? How?
4. Are we taking advantage of available technologies to provide more effective learning opportunities for our students? What should we do?
5. How can we prepare to use technology to address new curriculum standards and requirements?
6. What challenges do IT managers face when students arrive on campus in the fall? How can faculty and staff help mitigate those challenges so the school experiences the least disruption?
7. How well are we addressing FERPA and other privacy concerns on our campus? What should we be doing better?
8. Are we providing adequate physical security on our campus? What should be improved?
9. What ideas do you have to reduce the amount of paper and replication of data entry within our campus?
10. How do we find the right balance between IT expertise and curriculum leadership when selecting educational technology?

Conclusion
As education technology evolves, education institutions will continue to be faced with the need to support the technology infrastructure demands of the 21st century. It is important that educators not only understand the expectations and importance of updating infrastructure, but also the funding path to build and support the required level of infrastructure. If today’s funding methods hold true, funding will continue to be secured through a variety of channels. By being aware of those channels and ways in which they can be used to fund technology infrastructure, educators should be able to meet their technology infrastructure needs.

Endnotes
11. http://www.illinicloud.org
Sponsors:

Acknowledgements:

John Halpin
John Halpin is Vice President of Education Strategic Programs for the Center for Digital Education. As a veteran K-12 teacher, college professor and IT consultant, Halpin has been active in promoting the use of technology in education for over 25 years. He has led sales and marketing efforts for some of the largest technology companies and has written for various media outlets. In addition, Halpin is a frequent speaker on public sector technology issues for national professional associations, various state leadership councils and technology companies.

Michael Muth
Michael Muth is the Education Research Analyst for the Center for Digital Education, a national research and advisory institute, focused on market strategy. He works with Center members providing market intelligence and analysis in the education marketplace.

The Center for Digital Education is a national research and advisory institute specializing in K-12 and higher education technology trends, policy and funding. Along with its research services, CDE issues white papers and conducts the annual Digital School Districts and Digital Community Colleges surveys and award programs as well as hosting events across the K-12 and higher education arena. CDE also supports the Converge media platform comprised of the quarterly themed Converge Special Reports, Converge Online, and custom publishing services.