Planning and Budgeting for Technology

Implementing and maintaining an up-to-date technology program costs more than the price of computers. Here is help for anticipating expenses.

By Bill McCampbell

In the early days of technology use, schools purchased stand-alone computers, a few pieces of software on floppy disks, and maybe an Internet dial-up connection for one computer in a lab. There was a great deal of donated equipment, resources were piecemeal, and technical support was almost nonexistent.

Today, the Internet and high-speed computer networks are becoming standard equipment in many schools. Questions about broadband, wireless technologies, and personal digital assistants (PDAs) and their usefulness for schools are cropping up in classrooms, at school board meetings, and in teachers lounges. How can schools and districts make good, long-term decisions about how much and which technology to integrate? What is the best way for schools to plan purchases over the long-term? How do schools maintain and upgrade equipment and software? What about professional development for teachers and technology coordinators? These questions must be tackled in a systematic way.

A technology integration planning model called Total Cost of Ownership (TCO) addresses these and other questions. TCO looks at all the costs involved in operating networks and computers, whether leased or owned. This approach has been traditionally used by businesses to help control costs and make strategic decisions. In the education environment, a better understanding of TCO will help school officials plan budgets and make smart choices when they deploy a technology network.

As a principal, you can develop a TCO model for your school and affect overall district decisions. A strategic vision and plan will benefit your school, whether or not you have an extensive technology network and teachers who integrate it well or you are considering how to correct early technology mistakes or expand upon your current technology. In addition to your anticipated costs of purchasing computers, printers, and servers, keeping a school technologically current incurs several other expenses, including professional development, technical support, connectivity, software, replacement costs, and retrofitting. Consider the following background information on two of the issues you’ll face at the school level: professional development and technical support.

Professional Development

The budget item that is arguably the most necessary to a school district’s ability to achieve its technology goals is staff development. If teachers and other staff members do not understand new technologies and how to incorporate them into the classroom, a district’s technological investment will not achieve its desired results.

In a 1995 school technology guide, the Massachusetts Software Council pointed out that many businesses match every dollar they spend on computer hardware or software with another dollar for training. Although the Council acknowledged that target...
figure was probably too ambitious for most school districts, it recommends that at least a quarter of a school’s technology budget be set aside for professional development.

One of the largest components contributing to the cost of staff development can be the need to provide substitute teachers, thus enabling the regular teaching staff to participate in training. In a well-publicized model of school-technology costs, McKinsey & Co. assumed that a district planning to network all of its classrooms would hire substitute teachers at a cost of $100 a day, recruit the equivalent of 1.5 full-time staff members to conduct training, and cover the cost of training materials.

Inadequate staff training leads to underutilization of computers—and squanders a school district’s investment in technology. A survey of technology directors conducted by the Milken Exchange found that an average of 5.9% of a district’s computers were not being used. The second most important reason given to explain this figure, cited by 50% of overall respondents, was “teachers are not trained to use them.”

As you develop a plan for your school, talk with your teachers and technology coordinators. Find out what their professional development needs are and address those needs in an organized long-term plan.

**Technical Support**

Technical personnel help maintain computer networks and other hardware and help users solve the problems they encounter with their computers and software packages. The number of support staff members a district requires depends on several variables, including the number of workstations and the variety of operating systems and software applications the district uses.

International Data Corporation (IDC) reports that when a computer in the classroom fails, it is typically taken out of service for several days, but a computer in an office is usually repaired or replaced within an hour or two. The Milken Exchange asked district technology directors how long it takes to fix a computer and gave them the option of responding in hours or days. The average number of hours the directors reported they needed was 5.6 and the average number of days was 3.6.

It’s easy to understand why this happens. When a business computer breaks down, an office worker generally becomes totally unproductive. When a classroom computer breaks down, a teacher is either expected to go back to teaching the old fashioned way until it is fixed, or students are expected to share the computers that are still working.

School systems often fall back on technologically savvy teachers or students to help with support. Unfortunately, this can mean that teachers are pulled away from their primary duties. When support is inadequate, districts lose some of the value of their investments in technology because of slow repair. More than 29% of respondents in the Milken survey said that one reason computers were sitting idle in their schools was because they needed to be repaired.

It is important for educators to know how they want to use new technology and whether the school or district culture will accommodate a particular approach before selecting a system path. For example, personnel in some districts are building networks that combine thin clients with more traditional PCs, used in different settings. Administrators in those districts should ensure that they understand the trade-offs involved in such a process so they will be satisfied.

The TCO model is a vital tool for assessing and addressing a school’s current technology and in developing and charging forward with a well-planned vision. Effective principals begin by talking with their teachers and technology coordinators and finding out their ambitions and frustrations with the current technology. By using the TCO model, principals can use their resources more effectively.

**Resources**

There are several opportunities for principals to learn more about smart budgeting for technology. These programs, sponsored by the Consortium for School Networking (CoSN) and supported by NASSP, can bring principals up to speed and help them engage others.

**Smart Budgeting Teleconference**

On November 15, 2001, CoSN, with the Satellite Education Resources Consortium (SERC), will present Smart Budgeting for Technology, a free 90-minute teleconference/webcast. This teleconference can spur the beginning of conversations about TCO. Experts in the field and representatives from school districts around the country will discuss the benefits of TCO and the outcomes that it has enabled. For more information, visit the websites for NASSP (www.principals.org) or CoSN (www.cosn.org).

**Taking TCO to the Classroom**

CoSN has developed Taking TCO to the Classroom, an in-depth program to help administrators plan and integrate technology in a thoughtful way. The program includes a paper about the TCO model, an evaluation matrix to help principals assess their level of TCO savvy, and a presentation. These resources are free and available at www.classroomtco.org.

**What Did She Say?**

**A Few Instructional Technology Buzz Words and Terms**

**Download** To copy a program, file, or data from another computer to your own.
Frame: A small bundle of data transmitted over a local area network (LAN). Essentially the same as packets, frames occur on LANs only.

File Transfer Protocol (FTP): An accepted standard that allows network users to transfer their computer data to other computers.

Protocol: A definition or a standard designed to allow different computers and different networks to communicate with one another.

Transmission Control Protocol (TCP): Also known as TCP/IP. A protocol that makes sure that a computer’s packets of data are shipped over a network and received in their intended order.

Throughput: The speed at which data is transmitted through a channel. Often measured in bits per second (BPS).

Webchat: A system that allows two or more logged-in users to set up a typed, real-time, online conversation over the World Wide Web.

Looking Around

Products that may deserve a close look

PDA software: If you are looking for software to expand the capabilities of your PDA, you may want to check out some of these sites. Programs range from note management software to calendar keepers, and most downloads are free: www.3m.com/postit/com_prod/psnotes, www.centssoft.com, and www.inklineglobal.com/products/rbo.

PDA support sites: There are several websites that provide service support for PDA users. These sites offer not only technical advice but also e-mail management and communication services that link right in to your PDA. Some support sites you may want to check out are: http://my.palm.com and www.calendar.yahoo.com.

Online reminder sites: Several sites provide event reminder services. These e-mail reminder sites offer free limited services that notify users of important events. Two of these sites are www.memotome.com and www.rememberit.com.

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Web Links You Can Use

www.cosn.org
The Consortium for School Networking (CoSN) promotes telecommunications to improve k–12 learning. Members include representatives from state and local education agencies, nonprofits, and companies and individuals who share a common vision. The site provides excellent information on leadership development, advocacy, and emerging technology issues as related to the k–12 education environment.

www.relnetwork.org
The website for the Regional Educational Laboratory Network provides updated news on current educational research and practice and quick access to the 10 Regional Educational Laboratories, serving geographic regions that span the United States. These labs work to ensure that those involved in educational improvement at the local, state, and regional levels have access to the best available information from research and practice.

www.ipl.org
This online public library provides links to valuable resources that you might normally only find in a public library. For example, its link to newspapers provides access to online newspapers around the world. The Internet Public Library (IPL), is a public service organization and learning and teaching environment at the University of Michigan School of Information.