Making Schools Future-Proof

Implementing flexible technology now to prevent major overhauls later.

BY ALAN DESSOFF
From District Administration

Under pressure to keep spending down but also keep pace with rapid technology changes, many districts are future-proofing their schools—trying to get the most out of tech spending by providing solutions they can use now and in the future without major, expensive infrastructure overhauls.

“We try to make sure we’re not dead-ending,” says Paul Gust, district technology director in the Saugatuck (MI) Public Schools, which is using the latest advances in interactive whiteboards. “We don’t want to jump into something without being sure it has a viable future.”

In the Folsom Cordova (CA) Unified School District, it’s called “future focus,” says Chief Technology Officer Joe Jenkins. “It’s not so much a hardware-specific mentality; it’s trying to make the technology more flexible and utilize wireless infrastructures.”

A future-proof facility is “the escort to a probable future,” adds Frank Locker, president of Frank Locker Educational Planning, a consulting firm in Dover, NH. He defines it as “inherently a flexible building that can be used as appropriate today but allows future reinterpretation and reassignment of programs and functions,” anticipating and supporting change without expensive remodeling.

Implementing and maintaining the right technology infrastructure is not a technical issue but a “strategic issue that requires thought and leadership,” Peggy Munkittrick, senior director of product strategy for Schoolwires, wrote in a white paper, “K-12 Unified Technology Model for Creating a Technology Framework in Support of Strategic Initiatives.”

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As districts develop their technology plans, she continued, "it is essential to consider how their technology infrastructure can more effectively leverage the Web 2.0 technologies."

**Going Wireless**

Wireless is dominant in schools today, so running cables everywhere is no longer imperative, says Robbie Ferris, president and CEO of FirstFloor K-12 Solutions. The main challenge is to provide enough outlets so students can recharge their laptops. But with PDAs, iPhones, and some laptops with batteries that last up to 10 hours, "technology can get to the point where we won't even need all those outlets, because students can plug in when they get home," Ferris says.

Ted Finch, a technology analyst with sustainability consulting firm FutureProof, points out that, increasingly, students are using their own laptops at school. "To future-proof schools to cope with this trend, it is important for schools to set up a strong wireless network across the campus," he says. To future-proof a wireless network, "assume one laptop per child in every classroom, library, and common space in the school, and then ensure that the wireless network can handle that many laptops at once, and with enough bandwidth for every student to access streaming media concurrently, all with a strong signal."

But some districts, like the Cumberland County (NC) Schools, still use wires. "Everything is still hard-wired," reports Tim Kinlaw, associate superintendent of the district. Accordingly, classroom plugs for students’ laptops are part of a new sustainable building design prototype for K-12 facilities introduced in the New Century 6 International Elementary School. Other features in the building, including a ground-source geothermal system and a solar photovoltaic power system, promise to significantly reduce costs now and in the future, and require little change in infrastructure. The new school is projected to save $60,000 annually while serving as an environmental teaching tool. "If you really want to future-proof a school, you have to design it to the greatest extent possible to impact student performance and reduce energy consumption in a big way," says Ferris.

**Communications/Alerts**

Other technologies are helping districts improve infrastructure efficiencies and reduce costs in functions like communication and alerts. The Northeast Metro 916 Intermediate School District in Minneapolis has adopted Honeywell Instant Alert, a Web-based emergency notification system that will quickly notify parents and staff members of situations...
Future-Proofing Tips

Examine existing technology, then consider:

- **UPGRADES**—How easy or realistic is it to upgrade? Has the vendor designed it to be easily upgraded?
- **LIFE CYCLE**—How long will it be before your technology is obsolete? What happens then?
- **INFRASTRUCTURE**—Do you have the wiring, network, and facilities to support an expansion of your technology five years from now?
- **SUPPORT**—Do you have the tech support for such an expansion? If not, do your vendors provide the necessary support?

ranging from school bus accidents to school closings due to weather. Instead of using telephone calling trees, the district reaches its audiences through voice, text, and email messages.

Faced with a tight operating budget, school administrators also use a file attachment feature to deliver nonemergency information to parents, such as reminders of meetings, that previously were mailed or delivered by students. “We used to send out a Thursday folder with lots of papers that students would take home,” says Kristine Carr, the Northeast Metro district’s director of administrative service. With the file attachment, schools have cut paper consumption and printing and mailing costs. “We used to send out a Thursday folder with lots of papers that students would take home,” says Kristine Carr, the Northeast Metro district’s director of administrative service. With the file attachment, schools have cut paper consumption and printing and mailing costs.

As more districts invest in virtualization, some find they can lower costs with zero clients instead of thin clients. Thirty-five zero-client stations in the Westerly (RI) Public Schools are predicted to save the district nearly $160,000 over a three-year period. Unlike thin clients, zero clients—small silver portals the size of a Big Mac box—have no internal processing, thus reducing maintenance and service costs usually associated with individual PCs. Zero clients are like “a portal between the user and the keyboard,” recording key strokes back to a virtual machine running securely in the district’s data center, explains Mark Lamson, Westerly Public Schools’ director of technology.

**Interactive Whiteboards**

Smartboards and projectors are among other technologies that have changed. “Interactive smartboards are standard now,” says Ferris, and “projectors have gotten so advanced, you can mount them on the wall.

The Vallejo City (CA) Unified School District had purchased interactive board systems in the
past, but they were expensive. Roy Li, the district's director of technology, searched for alternatives that might fit better in terms of functionality, cost, and "future vision."

He found the eBeam Edge for Education, an interactive whiteboard solution from Luidia, and the district bought 250 units. Each receiver unit, about the size of a board eraser, takes only minutes to install. The portable unit activates an image area up to 9 feet by 5 feet and is compatible with standard projectors.

Gust, of the Saugatuck Public Schools, and other administrators also see a viable future in eBeam, citing its retrofittable design that allows schools to use existing whiteboards and surfaces, streamlined installation, the ease of moving the units from one classroom to another, and attractive cost.

In the Cloud

Some districts are adopting cloud-computing solutions to reduce future infrastructure needs and costs while providing new instructional capabilities. Li is partnering with Google on a cloud project to allow teachers to set up virtual classrooms.

The New York City Department of Education estimates it will save up to $5 million annually on email infrastructure through a cloud solution from ePals SchoolMail that integrates technologies from Microsoft Live@edu, a no-cost plat-form accessible through popular web browsers for Windows, Mac, and Linux operating systems.

"Instead of having your own data center and putting in a bunch of hardware, you can take advantage of the Googles and Microsofts of the world. They run their own data centers much more efficiently and cheaply than we can," says Bruce Lai, chief of staff in the office of the chief information officer in the New York City DOE.

The Software and Information Industry Association's education division has established a working group to explore what it means for school districts. Karen Billings, vice president of the division, says the group will consider the instructional implications of cloud computing, such as "what it means in terms of empowering teachers to operate with more up-to-date information and instructional settings and whether it's a way to engage learners," Billings says.

Even as more district leaders begin future-proofing schools, Locker, of Frank Locker Educational Planning, says he doesn't feel the concept has moved into the "general culture." Most districts, he says, are "highly focused on current practices and meeting current trends. Even some pretty sophisticated districts are running with some pretty outdated technology infrastructure and hardware. So we have a lot of catching up to do."