

## Is It Time to Move Our Data and Applications Online?

### Yes

Investing in software that can be used only on school computers is like purchasing textbooks and then forcing students to leave them in their desks at the end of the day. Requiring that student data remain behind firewalls on school or district servers locks those same students' "notes" in their desks when they head home.

It is time to move our classroom applications and data online. Many districts have licensed applications and utilities that are available to staff and students only when they are working in school, not at home. This restricts the flexibility of students to complete work outside of school hours, and puts



By Terry Whitmell

additional stress on school hardware resources. It's time for developers of educational and productivity software to provide their products online. Businesses use online applications such as gOffice or Numsum. Putting quality educational and productivity software on the Web will ensure its viability once

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Data centralization and access is important, but how it's accomplished is critical. Although some schools are implementing 1:1 laptop initiatives where student data (projects, portfolios, and so on) are stored locally, most are still using computer labs, classroom-based mini-labs, or roaming wireless carts. Students may be sitting down at several different computers during the day. Having centralized data access is crucial.

One method to accomplishing data centralization and anywhere access to a student's projects and portfolios would be to use one of the many Internet-based file storage solutions. As tempting as these solutions may be, there are several downsides to using such services.



By Brian Killingsworth

Internet-based file storage services are typically designed for personal use and management, not larger enterprise computing environments where management tools are critical to file sharing, access, and security. Using an Internet-based file storage service would require individual

CD-ROM drives have followed 5 ¼" floppies into the trashcan. How many of us have wonderful educational software now made obsolete by the limitations of DOS in an XP world, or by a requirement for a drive no longer manufactured? The Web has fewer backward-compatibility issues and ensures a much larger market at a lower cost to developers.

Students already use online applications such as Gmail and Yahoo! Briefcase to transfer and store their personal data. As our students' work becomes more than just text, we need to provide them with the means to access, process, and communicate their audio, graphic, and video performances. The best and most secure place for this is on school-owned servers, with out-of-school access available to both students and their teachers. A student should be able to pull up an assignment, browse to the software to com-

plete the task, and then file the result in an online drop box. The current practices of e-mailing, burning to CD, or saving to a flash drive result in multiple versions of files in multiple locations, and an increased risk of "being eaten by the dog." Putting educational resources online also maximizes teachers' access to shared resources, and increases the efficiency and effectiveness of both teachers and students.

In the past two decades schools have moved from stand-alone machines to classroom networks, to school LANs, to district WANs. The Internet is the next logical step.

Instead of investing funds to provide more hardware in the form of computer labs, computer clusters in classrooms, or COWs (Computers on Wheels), we should be empowering students to shift some of their keying to home. Our teachers are too valuable to relegate them to mere "Internet

cops," watching their students hunt and peck their research projects. They should be modeling and working collaboratively with their students in the classroom with a computer and projector, guiding them as they reinforce their skills at the computer, and then providing students with access to the software and files so that they can continue their work at home, at the local library, or in supervised after-school sessions.

By moving to the Internet for both applications and file storage, learning can truly be (to borrow a phrase) "anytime, anywhere."

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students to completely manage all settings and access controls, which could cause inconsistencies and lead to loss of instructional time. In effect, each student would become a mini network administrator and need to dedicate educational time to the underlying management of his or her storage space. In this scenario, if a teacher wanted to check a student project stored online, the student could easily block access.

Another issue that makes Internet-based file storage inappropriate for the K-12 environment is its use of bandwidth. Although most schools are connected to the Internet, the speeds at which they connect are often at the low end of the spectrum. Having a lab full of students connect to the Internet to open a reasonably sized PowerPoint presentation, for example, would bring the network to its knees. Also, what happens when the school or district's Internet connection goes down?

Like most computer systems, Internet-based file stores will need maintenance and upgrade periods to add functionality and perform optimally. Typically these maintenance periods are performed after hours, but the question remains, whose hours and whose schedule determines these planned outages? An unlikely answer is the schedule of the school or the district. Again, what happens in the event of an unplanned outage when file access is impossible?

What's the solution then? Good "old fashioned" LAN-based file servers. Even though they might not be as flashy as their Internet-based counterparts, they are still the best tool for file sharing and access. With this solution, all students and teachers can have centralized, consistently reliable access to file storage. A technology coordinator or network administrator can ensure consistent file access and students don't need to allocate part

of their instructional day to managing access. In addition, LAN speeds are typically much faster than any Internet connection, so accessing a presentation to make some minor changes wouldn't bring everything to a crawl. What about the "anywhere" access that makes Internet-based storage so attractive? Almost all network operating systems have options that allow users to either directly or indirectly access LAN-based files. Deploying a more traditional LAN-based file server that also allows for Internet access allows the school or district to centralize and retain control of its classroom data, ensure consistency of access, plan upgrades and maintenance around the school calendar, and achieve anywhere access.

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