Transforming Higher Education Technology Services and Support

Strategic collaboration can yield productive partnerships in which one university supports technology services and infrastructure for others

By **John A. Bielec** and **Janice M. Biros**

Prospective college students expect to be able to register online for open houses, find information on the Web about academic programs and services, communicate electronically with faculty and enrollment counselors, and even apply and receive financial aid online. Once enrolled, students expect to register for classes, check grades, access a myriad of courses and course material, and monitor their financial and personal records online. All are reasonable expectations in 2002. However, providing these services is neither simple nor inexpensive, particularly for small, tuition-driven schools operating under financial constraints.

Small schools must offer e-services to remain competitive, but most find themselves hard pressed to maintain the necessary equipment and range of professional expertise to implement and support these services — despite decreases in hardware costs. Unfortunately, the complexities and expense of networks and server software layers, and the professional skills required to support them, are increasing. Establishing, supporting, and upgrading campus infrastructure to provide e-services can be prohibitively difficult and expensive for a smaller school.

Drexel University, a technology-rich private university in Philadelphia, found a way to assist other schools in offering e-programs and services through innovative partnerships. By providing IT support to other campuses and coordinating training and vendor relationships, Drexel helps smaller schools benefit from its technical expertise and resources.

In 2000, Cabrini College and Neumann College, two small liberal arts colleges near Philadelphia, were struggling with IT issues. Their IT staffs were small and lacked the requisite skills to deliver mission-critical IT services. Also, the staff did not possess the experience needed to set goals and priorities, establish and document policies and procedures, and engage in effective strategic planning. They dealt with aging, inadequate infrastructures in the face of increasing demands by students, faculty, and staff for efficient administrative systems, Web access to information, and improved technology facilities. Drexel worked with both colleges to redefine collaboration, creating meaningful partnerships for IT support that benefit everyone involved.

Background

Drexel University already had significant experience providing IT support to other institutions. In 1998, the Allegheny Health Education and Research Foundation (AHERF), a healthcare group of seven hospitals and one medical school/university of health sciences, went bankrupt. After extensive investigation, litigation, and negative publicity, AHERF was divided up, with the hospitals sold to Tenet Healthcare of Santa Barbara, California.

Tenet was not prepared to operate a university. MCP/Hahnemann University, which had been part of AHERF, thus risked going out of business. The courts asked Drexel University to manage and operate the university with the goal of stabilizing it and then making it solvent. Drexel also had the opportunity to acquire MCP/Hahnemann after three years.

Drexel agreed. However, the opportunity came with many challenges, including building an up-to-date technology infrastructure, information system, and support system on which to rebuild the university.

Founded in 1891, Drexel has had a co-op education program since 1918 and was the first university in the United States to require each student to purchase a microcomputer and bring it to campus. This requirement began as a Macintosh-only program in 1983, then expanded in 1997 to let students choose between the Mac and Windows platforms.

Drexel made a significant wired network upgrade from 1998 to 2000 and launched a wireless initiative in 1997. This initiative began with a pilot installation and laptop loaner programs set up in the library and the student center. By fall 2000, the entire campus had wireless access. In addition, Drexel is a member of Internet2 and provides Internet2 connectivity to the 14 colleges in the Pennsylvania State System of Higher Education (SSHE) via the Keystone Crossroads Partnership for Internet2 (KXP2).

Within six months of agreeing to manage MCP/Hahnemann, Drexel

installed SCT Banner systems for finance, human resources, and student records. An OC48 sonnet ring was built to connect the two MCP/Hahnemann campuses to Drexel, and the aging Novell network was converted to TCP/IP. Microsoft Exchange mail replaced Groupwise, and all desktop PCs were upgraded. A newly established computer help desk provided training and support to staff and faculty.

Drexel's University City 32nd Street data center housed all data systems and provided mission-critical data services to the two campuses. Drexel housed the servers, operated them around the clock, and provided all administrative information systems remotely over the network. In effect, Drexel became an application service provider (ASP) for MCP/Hahnemann in the process of creating a new technology infrastructure for the university.

Drexel provided the same services in the same way for MCP/Hahenmann as it did for its own campus. Drexel staff made no modifications or customizations to the systems and did not attempt to mandate what the university had or wanted to have. A mirror image of Drexel systems and services was set up, and MCP/Hahnemann used the same training and support as the Drexel community. The new technology infrastructure enabled MCP/Hahnemann to better manage the organization, serve students, and improve staff productivity.

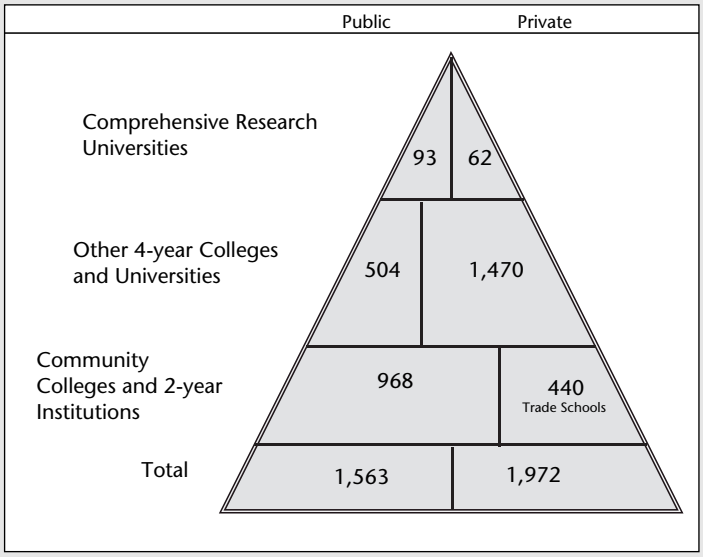
ASP Defined

ASPs, by definition, are companies hired to provide application access over the Internet to other organizations. ASP arrangements enable organizations to access essential applications without the expense and burden of owning and operating the assets required to run those applications.

In Figure 1, the pyramid represents the national distribution of colleges and universities. The top of the pyramid represents those Comprehensive Research schools with virtually unlimited resources. Such schools can afford to make any IT choices, including developing their own applications or buying the "best of breed" and integrating them. Any mistakes or poor choices can be written off as learning experiences.

Figure 1

Number of U.S. Institutions of Higher Education by Segment



The middle tier is the group of small tuition-driven schools (many with fewer than 2,000 students). They face ever-present and, in many cases, increasing financial constraints. These schools cannot afford to make mistakes — they have a difficult enough time supporting and implementing wise decisions. These schools frequently cannot afford to upgrade equipment, acquire expensive administrative software, and provide the staff necessary to support IT systems. The wide scope of professional skills necessary to administer servers, manage complex databases, do Web development, and provide training and support to users is often too expensive to support. Moreover, small schools do not need these skills on a full-time basis, but purchasing them on a part-time consulting basis can be cost prohibitive.

For these middle schools, IT is not a core business, but it is still important for institutional management and competitive strategy. The hardware and software costs, the short technology life cycle, and the lack of skilled IT professionals make it almost impossible for them to operate as do the schools at the top, however. Partnerships, like the ones Drexel has developed, leverage IT resources and provide the partnering institutions with a more robust IT environment and lower IT costs.

Such partnerships can also provide vendors with leverage opportunities. Many vendors cannot penetrate that middle group because their product costs are too high to make them viable options for those schools. However, by selling through the "mentor" school, they can minimize their cost of sales and penetrate a market not otherwise available to them.

Creating an ASP Partnership

Cabrini College and Neumann College both faced the challenge of equipping their schools with the technology necessary to attract students and improve the operations of their institutions, but neither had the in-house expertise to identify and implement a strategy. IT management was strained, and IT initiatives were not always well conceived or implemented.

Both institutions asked Drexel to provide interim IT leadership in an attempt to get things back on track and identify

a strategy for moving forward. It was intended to be a three-month arrangement; the schools extended it to six months. During this time, Drexel made staff changes and established and documented many new policies. Incoming students were strongly encouraged to bring a computer to campus; acceptable use policies were developed; and e-mail and the Web became increasingly important for communicating college information, replacing the less-efficient voicemail and print notification methods.

Partnership with another educational institution rather than a commercial entity created a strong element of trust, which facilitated moving quickly in implementing changes. Drexel recommended that Cabrini and Neumann do many of the same things it did, in the same way. Drexel was an older and larger institution and had extensive experience with technology. Neumann and Cabrini could benefit from Drexel's mistakes and successes, research, and students' experiences. Drexel was motivated by the opportunity to share its expertise as a mentor or flagship school and further its academic reputation, not by making a profit.

After the six months of interim leadership, a long-term agreement was written and a permanent IT staff established. A full-time Director of IT (a Drexel employee) was assigned to each school. At Cabrini the director reports to a vice president, and at Neumann, to the president. The remaining staff were either Drexel employees assigned to the school full-time or employees of the schools.

The two directors also report to the Associate VP for Instructional Technology Support at Drexel University. Having this arrangement brought Drexel's standards for efficiency, accountability, and productivity to these schools and created a new IT culture. The directors have regular access to specialized experts at Drexel for help with projects involving skills or knowledge that their staff do not have.

While Drexel managed the status quo initially, the goal was to move the schools in the direction of using IT products that Drexel had installed and had experience with. For instance, Drexel standardized on WebCT for course development and was able to quickly introduce it at both Cabrini and Neumann. Drexel provided the software, server, training, and support required by faculty to implement this product as part of the basic arrangement with the two colleges. Drexel also introduced vendors who offered them deep discounts, since they received additional sales with no additional sales costs.

This contractual partnership is collaborative and collegial, but it is not a consortium. The schools make no attempt to reach a consensus about issues, directions, solutions, or strategies. The partners identify a service or problem that needs attention, Drexel staff explain how Drexel chose to approach and solve it, and the partner school decides if that approach will work for them.

Drexel's ASP model provides solutions to technology challenges faced by the schools in the middle of the pyramid, including a vertical channel for vendor application products and other sales. It is based on off-site service provision — providing access to mission-critical technology while reducing on-campus software and hardware assets. It relies on a subscription model as opposed to a site-license approach, and it leverages skills and staff through strategic collaboration.

Drexel can operate effectively in this institutional mentoring role for a variety of reasons. As a university itself, Drexel operates as a trusted technology provider to other higher education institutions. With three years of proven success in providing technology to MCP/Hahnemann, Drexel has the leadership and professional skills necessary to support technology innovation. The university has a strong entrepreneurial environment, enabling it to act quickly to take advantage of situations and opportunities. Certainly a key component is its robust infrastructure.

In 18 months at Cabrini, Drexel has expanded services provided there to include e-mail, online course management (35 courses have moved into WebCT), and academic software (SAP R/3 will soon be made available for use in the business curriculum). The next project planned is to replace the CMDS

Table 1

Services Drexel Provides to Current Clients

Service	Drexel	MCP/HU	Cabrini	Neumann	SSHE
IT leadership	x	x	x	x	
Desktop support	x	x	x	x	
Server support	x	x	x	x	
Help desk	x	x	x	x	
Networking	x	x	x	x	
Internet2 gateway	x	x			x
Applications					
E-mail	x	x	x		
Online course management	x	x	x	x	
Academic software (SAP)	x	x	x		x
Storage	x	x			
Library	x	x			
Finance	x	x			
Human resources	x	x			
Student information system	x	x			
Alumni	x	x			
Portal	x	x			

administrative system with SCT Banner administrative services.

Table 1 shows a list of services Drexel provides and for whom. The goal is to reduce these schools' on-site hardware and software support needs and costs. The number and variety of IT services available to their students and staff will increase. The quality and standards of the help and support services will increase, but the headaches associated with operating and managing those services should decrease.

With Drexel's assistance, Cabrini's connection to the Internet has quadrupled in bandwidth (using Drexel's ISP and favorable pricing); wireless networking is operational at multiple locations; Web hosting is available for faculty and staff; and IT policies, procedures, documentation, and standards have improved. Cabrini has achieved substantial savings on the purchase of new PCs and has begun eliminating their original 11 servers by offloading services to Drexel and consolidating the remaining servers.

Neumann has been involved with Drexel for a shorter time and in a less in-depth relationship. Neumann has reaped many of the same benefits, however, including wireless, PC purchase savings, academic course development, staff training and development, and increased support for and use of the Web and e-mail.

Replicating Success

The model Drexel has developed with Cabrini and Neumann can be expanded to other institutions as well. While Drexel took the initiative to establish and develop the ASP relationships described, other universities can certainly replicate the model. With network transmission, services can be provided at any distance, but Drexel's experience has shown that proximity offers an advantage. Meeting regularly with the presidents of Cabrini and Neumann promotes the relationship and clarifies institutional goals and problems. Having staff from the partner schools come to Drexel's campus for special training or support meetings provides added value in staff development.

Drexel has benefited from these relationships in a variety of ways. These relationships have provided Drexel's Office of Information Resources and Technology with additional resources that can be used to grow the initiative and enhance Drexel's services. ASP funding has been used to acquire staff for special assignments or for the term of the arrangements. All institutions involved have received media attention for their innovative, entrepreneurial spirit. Vendors have viewed relations with Drexel more favorably, seeing an opportunity for increased sales and entry into a new market. There is even a human resources benefit: Drexel staff have new opportunities for management and leadership in working with the partner schools.

While providing administrative applications service and support is more complicated and requires a robust direct network connection between the partner schools, some of the other projects are much less complicated and have almost immediate, significant benefits. Assisting smaller schools with increased Web development and use, policy and procedure development, online course development, faculty and staff training, implementation of virus protection, and improved customer relations and support through help desk functions can be implemented quickly and easily and can improve responsiveness and user experiences immediately. This instills the trust, confidence, and internal support required to undertake more complex projects such as e-mail or administrative services.

Additional Opportunities

A number of affinity relationships can also extend from Drexel to partner schools. For example, Drexel has an affinity online banking relationship, AJDrexelBank.com, that Cabrini will explore for its community. Drexel has also set up an institutional credit card for its departments, enabling authorized purchasers to charge supplies and travel, with automatic debits to the appropriate organizational account. Cabrini will work with Drexel's credit institution to set up a similar arrangement.

These arrangements reduce the costs of doing business, improve accountability and customer service, and, in some cases, generate additional revenue for the colleges. However, on their own, small colleges would have difficulty setting up these arrangements. The advantage is that Drexel has done the research and worked out the operational details with vendors; the university can extend the services to other schools at virtually no cost to either the vendor or the partner school.

A Look to the Future

The partnerships Drexel has established with MCP/Hahnemann, Cabrini College, and Neumann College help faculty, staff, and students receive greater access and better service through electronic transactions. The value added for these schools is that they are providing their communities with access to services and resources while avoiding the daunting costs and requirements of managing the assets.

Colleges in the middle tier will increasingly have to find creative, efficient ways to manage technology in a world of growing complexity. While commercial partners are available, the cost of those relationships is often prohibitive and restrictive in the long term. Partnering with another college or university has the advantage of trust from a shared commitment to and understanding of the organizational mission, goals, and problems. Services can be provided more economically for everyone involved with nonprofit partnerships. Schools working together can each benefit in a variety of ways, some clearly defined and anticipated, and others unexpected and with far-reaching implications. The opportunities are clear — it's up to other universities to step forward and take advantage of them. *e*

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