Shared Services: Three Examples of Multi-Institutional Collaboration

Bob Albrecht, ECAR
Philip J. Goldstein, ECAR
Judith A. Pirani, ECAR
Donald Z. Spicer, ECAR

ECAR Case Study 9, 2004
Shared Services: Three Examples of Multi-Institutional Collaboration
EDUCAUSE is a nonprofit association whose mission is to advance higher education by promoting the intelligent use of information technology.

The mission of the EDUCAUSE Center for Applied Research is to foster better decision making by conducting and disseminating research and analysis about the role and implications of information technology in higher education. ECAR will systematically address many of the challenges brought more sharply into focus by information technologies.

Copyright 2004 EDUCAUSE. All rights reserved. This ECAR case study is proprietary and intended for use only by subscribers and those who have purchased this study. Reproduction, or distribution of ECAR case studies to those not formally affiliated with the subscribing organization, is strictly prohibited unless prior written permission is granted by EDUCAUSE. Requests for permission to reprint or distribute should be sent to ecar@educause.edu.
Shared Services:
Three Examples of Multi-Institutional Collaboration

Preface
The EDUCAUSE Center for Applied Research (ECAR) produces research to promote effective decisions regarding the selection, development, deployment, management, socialization, and use of information technologies in higher education. ECAR research includes:

- research bulletins—short summary analyses of key information technology (IT) issues;
- research studies—in-depth applied research on complex and consequential technologies and practices;
- case studies—institution-specific reports designed to exemplify important themes, trends, and experiences in the management of IT investments and activities; and
- roadmaps—distilled summaries of ECAR research designed to help senior executives quickly grasp the core of important technology issues.

From its most recent research, ECAR has published a comprehensive gathering of information on IT financing in higher education in Information Technology Funding in Higher Education. The study used a multifaceted research methodology to collect and analyze quantitative and qualitative data from approximately 900 senior IT and financial officers.

Literature Review
The study began with a review of the relevant literature on effective IT funding practices, IT portfolio management, and IT value to define the study’s major themes and create a working set of hypotheses to be tested.

Online Survey
We conducted two quantitative surveys. We distributed a survey of IT leaders to the entire EDUCAUSE membership and received responses from individuals at 482 institutions. We distributed a companion survey of chief business officers to the National Association of College and University Business Officers (NACUBO) membership and received responses from representatives of 386 institutions.

Interviews
We conducted telephone interviews to further explore some of the key findings derived from the quantitative research. We interviewed 13 individuals representing 11 different institutions. Interviewees were a mix of IT leaders (10), institutional financial officers (2), and a financial manager of a large IT organization (1).

Case Studies
Three in-depth case studies complement the core study. In addition to this multi-
institutional case study, we conducted case studies at Texas Tech University and Cornell University. We assume readers of this case study will also read the primary study, which provides a general context for the individual case study findings.

The Role of Shared Services in IT Cost Containment

“Doing more with less” has been used so often to describe the challenge of higher education administration that it has become trite. However, it really is an imperative for higher education’s IT organizations. ECAR’s recent research of the state of IT funding in higher education revealed three unmistakable trends:

- IT budgets are increasingly consumed by the cost of maintaining implemented technologies.
- The appetite for new IT investment, especially for instructional and research technologies, continues to grow.
- Institutions don’t have much new money to invest in technology.

Respondents to the ECAR IT funding survey expressed significant concern about their institutions’ ability to provide sufficient funding to keep pace with technology advancements. Concern over the adequacy of future IT funding is especially acute at public institutions.

Nearly all IT organizations are engaged in some form of cost-containment initiative. Most institutions are pursuing such traditional strategies as cutting budgets across the board and negotiating purchase discounts. Others are pursuing a greater degree of standardization. While important, these are short-term strategies.

To achieve sustainable levels of savings to reinvest in new capabilities, institutions seek more fundamental changes in how they acquire, deploy, and manage technology. Some have begun outsourcing all or part of the IT function, while a small number of others are looking to corporate strategies such as the more aggressive use of offshore development firms: 17 percent agree that outsourcing can provide IT services at a lower cost, and 13 percent think using external software development firms is critical to cost containment. Although many institutions are interested in these strategies, only a minority of institutions are actually using them.

More institutions are looking to some form of collaborative or shared IT services as part of their IT cost-containment strategy. Although open source initiatives have garnered much attention, they represent only one form of shared IT project. Collaborations take many forms, ranging from joint purchasing agreements to the complete outsourcing of an IT function by one institution to another. In fact, more than half of ECAR survey respondents anticipate that their institutions will pursue some form of shared IT project in the next three years.

This multipart case study examines three examples of shared IT services:

- a consortium of Massachusetts institutions collaborating on regional networking;
- an Ohio-based initiative led by the University of Cincinnati to provide course management systems to other educational entities in Ohio; and
- Drexel University, which has in effect become an application service provider to other institutions.

We thank the many individuals and institutions willing to provide their time, energy, and ideas to support our efforts. We especially wish to thank Rosio Alvarez of the University of Massachusetts Amherst, Fred Siff of the University of Cincinnati, Cable Green at the Ohio Learning Network, and John Bielec of Drexel University.
The Massachusetts Regional Networking Consortia

The tree-lined hills along the Connecticut River in central Massachusetts form the Pioneer Valley. Home to numerous institutions including Amherst College, Hampshire College, Mount Holyoke College, Smith College, and the University of Massachusetts Amherst (all part of the Five College [5C] consortium), its exceptional location offers academia a rich cultural environment in a rural setting that is close to major urban centers. The valley is surrounded by farms and state parks yet is also near two intersecting interstate highways, making New York City, Boston, and Springfield easily accessible.

Despite its proximity to several metropolitan areas, the valley is lagging in its communications infrastructure. For example, as late as the early 1990s, rotary phone service was still rather commonplace. Today, DSL service is spotty. Bandwidth capacity is an issue because most vendors completely bypassed the valley. Most fiber links end in Springfield, 20 miles south of the valley’s higher education institutions, and the nearest north-south infrastructure—from Albany to New York—lies 60 miles west. The state of Massachusetts recently installed a fiber link on east-west Interstate 90, and area institutions hope to lease access. The nearest gigaPOPs are located in Boston and New York. Verizon is the only service provider to maintain any significant fiber infrastructure in the valley, and local institution CIOs report that it charged 30 times the downtown Boston rate per megabit until the last few years. Local initiatives to encourage vendors to provide connectivity at competitive rates or to solicit government assistance have been relatively unsuccessful. Herb Nickles, executive director of IT services at Smith College, succinctly summarizes the situation: “It is tough to operate scholarly institutions in this area due to limited connectivity.”

The lack of affordable infrastructure has become an escalating problem for area institutions in recent years, especially as student and faculty bandwidth requirements continue to rise. As the area’s only major research institution, the University of Massachusetts Amherst (UMass Amherst) currently connects to Internet2 through a privately leased fiber link to Springfield, which then connects to the Boston-based Northern Crossroads gigaPOP. The institution is also working on other projects to enhance the local infrastructure, including the 5C consortium’s plan to build a local fiber loop and the creation of New England Research and Education Network (NEREN), a consortium formed to build a regional fiber network. “With both projects,” observes Rosio Alvarez, executive director of IT at UMass Amherst, “the parties came together with some common goal, but both evolved very differently.”

This case study examines two fiber network initiatives, which involved three parties: UMass Amherst, the 5C consortium, and NEREN.

University of Massachusetts Amherst

UMass Amherst is the flagship campus of the five-campus University of Massachusetts system, enrolling 17,600 undergraduate and 5,500 graduate students from all over the 50 United States and more than 100 countries in spring 2004. The university employs 1,120 full-time and 304 part-time faculty members. Its 10 schools and colleges offer 88 undergraduate majors, and 68 master’s and 48 doctoral programs. Sponsored research activities total more than $100 million a year.

UMass Amherst’s Office of Information Technology (OIT) is led by CIO John Dubach and Rosio Alvarez. OIT comprises six areas:

- Academic Computing helps faculty incorporate technology into their teaching
and research and manages OIT computer classrooms and labs.

- The Administrative Computing Support Organization maintains the student information system that supports student administrative functions.
- The business office provides business and budgetary support for OIT.
- Help Services includes the four user support subgroups called help desk, software support, hardware support, and LAN support.
- Network Systems and Services manages and operates the campus-wide data network systems and services.
- Telecommunication Services provides voice and data communications to UMass Amherst faculty, staff, and students.

**Five Colleges, Inc. (5C)**

Five Colleges, Inc. is a nonprofit educational consortium that administers cooperative agreements and programs among Amherst College, Hampshire College, Mount Holyoke College, Smith College, and the University of Massachusetts Amherst. Established in 1965, the consortium is an outgrowth of a highly successful collaboration in the 1950s among Amherst, Mount Holyoke, Smith, and the University of Massachusetts Amherst that resulted in the founding of a fifth institution, Hampshire College, in 1970.

The 5C consortium has a long history of working together on technology-related projects to help faculties, students, and staff take full advantage of technology to further teaching and research. Working together lets the schools share programming, maximize personnel skills, and achieve economies of scale. In June 2000, the Five Colleges Board of Directors singled out technology as a key area in which to encourage collaborative exploration and action.

**Northeast Research and Education Network (NEREN)**

New England’s fiber-optic network activities are mainly local in nature. Several geographic areas in Massachusetts—including Amherst, Worcester, and Boston—and limited regions of Vermont, New Hampshire, and Maine have constructed local fiber-optic rings. State networks exist in New York, in Rhode Island, and, soon, in Connecticut. NEREN was formed by several state and regional research and education network organizations including Connecticut Education Network, Northern Crossroads, New York State Education and Research Network (NYSERNet), Ocean State Higher Education Economic Development and Administrative Network (OSHEAN), and UMass Amherst to give these local networks a regional connection point to Internet2 and eventually the National LambdaRail (NLR), and to facilitate grid computing and research collaboration initiatives. “The purpose of this project is to bring all of New England and New York together to use these resources and to put us on an equal footing with some of the much larger states and regions,” explains George Loftus, OSHEAN executive director and NEREN president.

**Local and Regional Fiber-Optic Network Evolution**

Cost and bandwidth requirements drove development of both the 5C consortium’s local fiber-optic ring and the NEREN network. While both initiatives involved UMass Amherst, they evolved differently. With the 5C consortium’s fiber-optic ring, UMass Amherst evolved into a service provider for the other four members, whereas NEREN emerged as a consortium of equal partners that included UMass Amherst.
5C Consortium’s Fiber-Optic Network

As noted, the 5C consortium has a long history of relationships, financial arrangements, and associations between the campuses. The five institutions discussed the feasibility of a 5C consortium network as early as the 1990s, with different members dropping in and out of the discussions through the years. During this period, UMass Amherst created its own high-speed link to Springfield to serve its larger constituency base and research mission. The individual colleges began leasing circuits from UMass Amherst, which in turn carries their traffic to Springfield.

Bandwidth, however, brought the network issue to a head around 2002. Eventually every 5C member began to feel the pinch as real-time Internet access demands for classroom and business applications skyrocketed. Herb Nickles at Mount Holyoke College noted that “Bandwidth demand at Mount Holyoke, Smith, and Amherst Colleges was more than doubling every year. We could not keep our throughput efficient despite significant investments. Students and faculty continued to complain about the situation.” In addition, some colleges wanted to connect to Internet2. For example, Amherst, Mount Holyoke, and Smith all received National Science Foundation Internet2 grants, but connectivity costs to UMass Amherst—the local access point—were prohibitive. Nickles estimates it would cost Smith $60,000 to lease a nine-mile DS3 pipe to UMass Amherst.

UMass Amherst, too, was interested in a local fiber-optic network to provide redundancy to its current Springfield network. “A consortium approach where we own our own fiber was clearly the only way we were going to see any daylight in resolving this problem,” Nickles recalls. There was general consensus among 5C members that a locally owned network could give the campuses increased data network capacity, add redundant links to handle network outages, and reduce the costs of local circuit charges for data communications services.

So the 5C members hired a consultant to analyze the need for and value of a 5C network. They then created a plan calling for a fully diverse and redundant loop of approximately 66 miles to connect the five campuses, the Five College Library Depository, and Springfield to provide Internet and Internet2 access, at an estimated construction cost of about $3 million. In fall 2002, the 5C governing board approved the proposal, which gave each 5C member an ownership stake in the fiber ring and mandated that each party provide equal financial contributions to the project. Another consultant helped members select vendors and negotiate and purchase the fiber-optic cable. Smooth sailing for the project seemed assured.

But the partnership of equals changed as the project progressed and as differences began to emerge. The project almost fell apart as individual institutional needs bubbled up, nearly overshadowing the network’s common good for all. It became apparent, for example, that UMass Amherst’s bandwidth, advanced networking needs, and technical experience differed greatly from the other four members’. Shortly after the fiber-ring project’s commencement, a more economically feasible redundancy option emerged for UMass Amherst, addressing the university’s primary project goal. Members wondered how uncertain state funding might impact UMass Amherst’s ability to participate as an equal financial partner. Another 5C member almost left the project after determining it was slightly more cost-effective to build its own link to Springfield. It became apparent that the consortium needed a new business model.

Overcoming this roadblock required sig-
Significant discussion among 5C members, and they eventually decided that rather than asking each member to contribute equally to the project financially, UMass Amherst’s involvement would resemble that of a service provider. It would manage the fiber-optic network and sell bandwidth and technical expertise to other members as needed. The four colleges actually own the network, UMass Amherst gets access to a share of the fibers, and the university’s current link to Springfield provides redundancy for the 5C fiber-optic ring.

To address potential service problems, the members also decided to create a service level agreement (SLA) between UMass Amherst and the four other partners to formalize quality-of-service expectations, response procedures if problems occurred, and alternative solutions if the problems remained unresolved. “At that point it became very clear that we were no longer functioning as equal partners in this project,” recalls Alvarez. “There was a real shift, because we were equal partners in many other collaborations.” The SLA also defines a specific sequence and process for emergency notification between UMass Amherst staff members and an individual college’s IT staff. Five College Net, a limited liability company owned by the 5C members, manages the fiber-optic ring project.

The fiber-optic ring is now proceeding under the new structure. The project is currently undergoing permit approval processes in several communities, and construction is scheduled to begin in the first quarter of 2005. The first links will extend from Smith to UMass Amherst and from Amherst to UMass Amherst. The next phase will extend the loop from Amherst to Hampshire and Mount Holyoke. The final leg will close the loop between Mount Holyoke and Smith and install the link from Mount Holyoke to Springfield. UMass Amherst will provide redundancy on leased pairs from its campus to Springfield over a completely different route.

NEREN

NEREN emerged from a series of conversations in the early 2000s among a group of institutions and research consortia to explore the feasibility of a regional fiber-optic network between Boston and New York or Washington, D.C. The members determined that the availability of dark fiber coupled with members’ in-house technical expertise made the concept worth pursuing. After a series of meetings, several parties representing four states emerged with serious interest: the Connecticut Education Network, NYSERNet, OSHEAN (Rhode Island), and UMass Amherst. NEREN incorporated in March 2004.

Current plans call for leasing fiber to form a regional network called the Old North Church (ONC) Project, a 612-mile network that forms a ring around southern and central New England and New York State, to be built in two phases. The next phase entails procuring dark fiber passing through New York, Hartford, Providence, Boston, Worcester, Springfield, and Albany; it was scheduled for completion by November 2004. The final phase will link Albany and New York. NEREN hasn’t yet purchased the fiber to complete this portion of the ONC Project loop but has the option to procure the dedicated fiber strands inclusive of the Albany-to-New York segment. NEREN signed with Wiltel Communications to procure the fiber.

One important aspect of NEREN’s development was that members hammered out mutual goals and “dress-rehearsed” budget, governance, and technology strategies before NEREN’s actual incorporation. “It was a very iterative process,” recalls Alvarez, “as opposed to the 5C fiber-ring project, where we tried to shoehorn a previous cost-sharing model into the project.” Loftus believes these dress rehearsals turned out to be “fundamentally important. We spent almost all of 2003 focusing on organizational issues and how to get this multistate collaborative working together.”
he recalls. “We put a structure together so that members feel they have control over a significant investment for which they have to lobby at their respective organizations.”

Members originally wanted to establish links from one local network to another, but on further investigation determined it was better to establish a separate organization to purchase and manage the network. “We wanted to build a regional network that would allow us to participate in other regional and national efforts—like National LambdaRail—instead of connecting to a specific network,” explains Loftus. “A guiding principle is to focus on the regional view and to install the infrastructure that would put us in good stead for whatever comes down the road.”

With regard to cost sharing, “We examined numerous cost-sharing scenarios including models that examined state gross domestic product, state network square miles, and indicators to measure the benefits derived from each state,” recalls Alvarez. “In the end the best and easiest model was simply to divide [the cost] equally among all the members.” The members will invest the capital funds necessary to get the NEREN project off the ground, including the 20-year Indefeasible Right of Use lease of the fiber and the purchase of shared optical equipment necessary to light the segments.

Members also spent considerable time examining various governance models. This proved particularly tricky because unlike other NEREN members, UMass Amherst was not a state network. Connecticut and Rhode Island have only one major research/education network each, whereas Massachusetts has several initiatives including the Northern Crossroads, UMass Amherst’s efforts, the Goddard gigaPOP in Worcester, and a research project on Cape Cod. Eventually the members designed NEREN as an umbrella organization. “We are really just a board of directors and a group that shares some common costs like legal fees and insurance,” explains Loftus. “We always structured the procurement of the fiber and technology as projects. Throughout NEREN’s life, we expect to accomplish several projects. Members can decide whether or not to provide financial, human, or project planning resources.”

NEREN members created one fundamental rule. “We realized both politically and financially, it was very important for one NEREN representative within each state to deal with the issues that came up within his or her own state,” Loftus said. “We started this mantra: a state’s network business is the business of the state network. NEREN’s power goes beyond state borders, so politically we have to be sure that NEREN supports the members’ collaborative efforts within their states.” Also, as other entities begin to work with NEREN, the key NEREN partner within that state learns more about its own state networking activities, creating more cohesion.

Members also spent considerable time examining various governance models. This proved particularly tricky because unlike other NEREN members, UMass Amherst was not a state network. Connecticut and Rhode Island have only one major research/education network each, whereas Massachusetts has several initiatives including the Northern Crossroads, UMass Amherst’s efforts, the Goddard gigaPOP in Worcester, and a research project on Cape Cod. Eventually the members designed NEREN as an umbrella organization. “We are really just a board of directors and a group that shares some common costs like legal fees and insurance,” explains Loftus. “We always structured the procurement of the fiber and technology as projects. Throughout NEREN’s life, we expect to accomplish several projects. Members can decide whether or not to provide financial, human, or project planning resources.”

NEREN members created one fundamental rule. “We realized both politically and financially, it was very important for one NEREN representative within each state to deal with the issues that came up within his or her own state,” Loftus said. “We started this mantra: a state’s network business is the business of the state network. NEREN’s power goes beyond state borders, so politically we have to be sure that NEREN supports the members’ collaborative efforts within their states.” Also, as other entities begin to work with NEREN, the key NEREN partner within that state learns more about its own state networking activities, creating more cohesion.

Members also spent considerable time examining various governance models. This proved particularly tricky because unlike other NEREN members, UMass Amherst was not a state network. Connecticut and Rhode Island have only one major research/education network each, whereas Massachusetts has several initiatives including the Northern Crossroads, UMass Amherst’s efforts, the Goddard gigaPOP in Worcester, and a research project on Cape Cod. Eventually the members designed NEREN as an umbrella organization. “We are really just a board of directors and a group that shares some common costs like legal fees and insurance,” explains Loftus. “We always structured the procurement of the fiber and technology as projects. Throughout NEREN’s life, we expect to accomplish several projects. Members can decide whether or not to provide financial, human, or project planning resources.”

NEREN members created one fundamental rule. “We realized both politically and financially, it was very important for one NEREN representative within each state to deal with the issues that came up within his or her own state,” Loftus said. “We started this mantra: a state’s network business is the business of the state network. NEREN’s power goes beyond state borders, so politically we have to be sure that NEREN supports the members’ collaborative efforts within their states.” Also, as other entities begin to work with NEREN, the key NEREN partner within that state learns more about its own state networking activities, creating more cohesion.

Members also spent considerable time examining various governance models. This proved particularly tricky because unlike other NEREN members, UMass Amherst was not a state network. Connecticut and Rhode Island have only one major research/education network each, whereas Massachusetts has several initiatives including the Northern Crossroads, UMass Amherst’s efforts, the Goddard gigaPOP in Worcester, and a research project on Cape Cod. Eventually the members designed NEREN as an umbrella organization. “We are really just a board of directors and a group that shares some common costs like legal fees and insurance,” explains Loftus. “We always structured the procurement of the fiber and technology as projects. Throughout NEREN’s life, we expect to accomplish several projects. Members can decide whether or not to provide financial, human, or project planning resources.”

NEREN members created one fundamental rule. “We realized both politically and financially, it was very important for one NEREN representative within each state to deal with the issues that came up within his or her own state,” Loftus said. “We started this mantra: a state’s network business is the business of the state network. NEREN’s power goes beyond state borders, so politically we have to be sure that NEREN supports the members’ collaborative efforts within their states.” Also, as other entities begin to work with NEREN, the key NEREN partner within that state learns more about its own state networking activities, creating more cohesion.

Members also spent considerable time examining various governance models. This proved particularly tricky because unlike other NEREN members, UMass Amherst was not a state network. Connecticut and Rhode Island have only one major research/education network each, whereas Massachusetts has several initiatives including the Northern Crossroads, UMass Amherst’s efforts, the Goddard gigaPOP in Worcester, and a research project on Cape Cod. Eventually the members designed NEREN as an umbrella organization. “We are really just a board of directors and a group that shares some common costs like legal fees and insurance,” explains Loftus. “We always structured the procurement of the fiber and technology as projects. Throughout NEREN’s life, we expect to accomplish several projects. Members can decide whether or not to provide financial, human, or project planning resources.”

NEREN members created one fundamental rule. “We realized both politically and financially, it was very important for one NEREN representative within each state to deal with the issues that came up within his or her own state,” Loftus said. “We started this mantra: a state’s network business is the business of the state network. NEREN’s power goes beyond state borders, so politically we have to be sure that NEREN supports the members’ collaborative efforts within their states.” Also, as other entities begin to work with NEREN, the key NEREN partner within that state learns more about its own state networking activities, creating more cohesion.

Members also spent considerable time examining various governance models. This proved particularly tricky because unlike other NEREN members, UMass Amherst was not a state network. Connecticut and Rhode Island have only one major research/education network each, whereas Massachusetts has several initiatives including the Northern Crossroads, UMass Amherst’s efforts, the Goddard gigaPOP in Worcester, and a research project on Cape Cod. Eventually the members designed NEREN as an umbrella organization. “We are really just a board of directors and a group that shares some common costs like legal fees and insurance,” explains Loftus. “We always structured the procurement of the fiber and technology as projects. Throughout NEREN’s life, we expect to accomplish several projects. Members can decide whether or not to provide financial, human, or project planning resources.”

NEREN members created one fundamental rule. “We realized both politically and financially, it was very important for one NEREN representative within each state to deal with the issues that came up within his or her own state,” Loftus said. “We started this mantra: a state’s network business is the business of the state network. NEREN’s power goes beyond state borders, so politically we have to be sure that NEREN supports the members’ collaborative efforts within their states.” Also, as other entities begin to work with NEREN, the key NEREN partner within that state learns more about its own state networking activities, creating more cohesion.
Alvarez observed, “We kept the bottom line as our metric for moving forward.” When the remaining members determined that splitting the costs in thirds yielded only a $25,000 cost differential, they decided to proceed. “The lightweight structure and the idea of different projects allowed us to keep things together,” explains Loftus. “It gave us great flexibility to go forward.”

NEREN began to light its first link in Providence in September 2004. As its network comes up, members will begin to plan other projects and work to recruit additional members to expand NEREN’s reach throughout the Northeast.

Benefits to Collaborators

Dollars and cents were primary drivers behind both collaborations. For the 5C fiber-optic ring, Nickles believes, “Each college could have built their own individual fiber connection, but it would be reinventing the wheel five times. The collaboration made a lot of sense to us.” The consultant 5C members hired confirmed suspicions about the cost-effectiveness of building a local fiber ring, estimating that costs would rise into tens of millions of dollars, assuming the same bandwidth and rate increases, if 5C members stayed the current course.

The fiber ring’s payback is estimated at 7 to 10 years, and Smith College expects an even shorter payback (about five and a half years) because its current connectivity costs are higher than those of other 5C members. The new bandwidth will present other opportunities for cost savings as well. For example, 5C members could videoconference more classes offered cross-institutionally. “We spend a lot of money on a bus system to transport students between campuses,” states Nickles. “One hope is the fiber network could eliminate some of that need.” And the institutions hope the enhanced network will encourage more individual projects between campuses.

The Connecticut Education Network, OSHEAN, and UMass Amherst are all reallocating funding formerly allocated to leased lines for accessing Northern Crossroads and Internet2, using the funding instead to purchase the dark fiber for NEREN. “Most of us were able to cover the costs or justify the investment in the fiber over a five-year period with the money we had previously spent by eliminating leased-line carrier costs,” explains Loftus. “We’ll have much higher capacity while spending basically the same amount of money.”

Both initiatives opened new opportunities for members because they are no longer bandwidth constrained. Members of 5C can now join Internet2, providing a new bandwidth source for their institutions. NEREN will position the region for national initiatives like NLR and Internet2. Loftus believes that regional optic networks in general will be “the next iteration of the gigaPOP and collaborative technology in academic computing. We take the knowledge we gain from building campus networks into extending them city-wide, statewide, and region-wide.” Indeed, the Pioneer Valley is keenly anticipating the 5C fiber loop because it has the potential to bring high-speed access to local governments and nonprofit organizations along its path.

Lessons Learned

Financial benefits drive these shared-network initiatives, but the organizational and management underpinnings can either help or hinder a project’s success. Interviewees outlined several lessons learned from their experiences.

**Having Similar Goals Is Important**

“With the 5C fiber-optic loop, it was a group of four small institutions that had identical bandwidth and networking needs, and one research university with very different ones,” states Alvarez. “We have a
history of collaborating on library systems, faculty sharing, and teaching courses, but it did not work this time because networking is a very different domain involving market forces, substantial investments of dollars, and a very critical utility. We automatically imposed a previously successful collaborative structure without considering the similarity of long-term goals and the best way to proceed with the fiber-optic network project.” Nickles agrees that “previous projects like the library system were much easier to figure out because each institution had a well-defined need and virtually everyone’s financial case was the same. In this situation, it was different for every one of us.”

**Clearly Identify Roles**

The NEREN governance model clearly outlines how members should negotiate with those outside the consortium. For example, dictating that the state member is the sole negotiation point with residents and organizations within its state provides clarity of procedure and avoids behind-the-scenes lobbying and political surprises.

**Trust and Commitment Are Imperative**

“It is called networking for a reason, because it relies on trust,” states Alvarez, “both in the technological and sociological sense. A project like this requires a real commitment to collaborating and trusting your collaborators. If both are not there, don’t bother. If they are there, you have a solid start on things.”

**Keep the Lines of Communication Open**

When both the 5C project and NEREN reached critical junctures, the members frankly discussed current and past issues to create a mutually agreeable resolution.

**Research Other Governance Models when Designing Your Own**

Both NEREN and the 5C members examined other governance models to determine the best fit for their situation. NEREN gravitated to the light and lean nature of the Northern Crossroads structure because it was familiar. The Connecticut Education Network, OSHEAN, and UMass Amherst are also current Northern Crossroads members, and all parties know that it works. The 5C members, too, searched for a familiar governance model as their project evolved. “We had a lot of different projects that we could review for successes and failures to determine the best fit for our project,” recalls Nickles. “The one we kept falling back on repeatedly was the 5C Library System because it has been so successful. It uses a single library system for all five campuses, operated by a separate staff located at UMass Amherst, and is managed by a governing board.”

**Shared Course Management Services in Ohio**

As Ohio moved to encourage collaboration among its higher education institutions, the University of Cincinnati (UC) and Kent State University agreed to host the Blackboard and WebCT course management systems. This case study focuses on one of the host institutions, the University of Cincinnati, and its information technology division (UCit). Although the current pilot’s financial support comes from state funds, UCit was prepared to offer services to outside customers. UCit’s entrepreneurial stance made it an ideal collaborator in the state’s shared course management services. UCit’s perspective and the university’s leadership in employing a business model to host IT services enabled them to seize the opportunity. A university IT division’s
willingness to serve, other higher education institutions’ openness to become clients, and the efforts of state educational organizations to foster such cooperation might well serve as a model for others.

Ohio Digital Commons for Education

The Ohio Digital Commons for Education is a collaborative effort of the Ohio Learning Network, the Ohio Library and Information Network, and the Ohio Supercomputer Center. The collaborative’s vision is to create a set of integrated online education and research services for higher education.

The Ohio Learning Network (OLN) was created in 1999 to help Ohio residents find educational programs that meet their needs; to work with colleges and universities to prepare for the knowledge economy; and to help build partnerships among higher education, schools, businesses, and communities. OLN is a consortium of 65 public and independent colleges and universities.

The Ohio Library and Information Network (OhioLINK) is a consortium of Ohio’s college and university libraries and the State Library of Ohio. Serving more than 600,000 students, faculty, and staff at 85 institutions, OhioLINK’s membership includes 17 public universities, 23 community/technical colleges, 44 private colleges, and the State Library of Ohio.

During its first 10 years, the Ohio Supercomputer Center (OSC) focused primarily on providing high-quality computing and networking services to its users. In the last few years, OSC has expanded its role to provide services to national high-performance computing and networking groups in the areas of training, scientific computing, and network research.

Recognizing in late 2002 that their activities were converging, these organizations created the Ohio Digital Commons for Education (ODCE). The three sponsoring organizations decided to build on their historic strengths and offer high-quality services at less cost than individual institutions would incur for the same services. Initial focus areas included shared course management services (OLN), shared content management (OhioLINK), and authentication services (OSC).

Ohio Shared Course Management Initiative

In April and May 2003, a statewide committee investigated the issues related to course management system (CMS) use in Ohio and found that

- CMS use was growing among Ohio higher education institutions;
- two vendors, WebCT and Blackboard, had the majority of the business;
- increasing licensing prices and the staffing demands to support these systems were exceeding many institutions’ available resources;
- open source solutions were potentially interesting but not yet a substitute for commercial products;
- several CMS vendors had developed technical and pricing models to allow a single institution to host the CMS on behalf of multiple institutions; and
- WebCT users had established a coordinated licensing model through OLN that had proven beneficial.

This report triggered the Ohio Board of Regents’ Technology Initiatives Committee to identify funds (initially up to $1.5 million and ultimately $1.3 million) and issue an RFP on behalf of the ODCE program. In particular, the committee identified collaborative course management system licensing and hosting as the major potential collaborative activity. Cable Green, OLN’s director of technology, was named project manager.

The University of Cincinnati and Kent State University took the initiative to become lead CMS hosting institutions, not only for their
internal benefits but also on behalf of sister institutions in Ohio. UC partnered with Blackboard, and Kent State worked with WebCT. Whereas WebCT’s business model encouraged institutions to offer such application service provider (ASP) services in a consortial fashion, Blackboard’s business model called for Blackboard itself to provide ASP services. UC convinced Blackboard to let it provide hosting services in this pilot program.

The pilot program includes three phases:
- pilot two- and four-year public and private institution collaboration during 2004–2006,
- add more institutions in 2006, and
- ultimately expand to K–20.

Currently, UC hosts the Blackboard Learning System for Edison Community College and Marion Technical College, and Kent State University hosts WebCT Vista for Rio Grande Community College and Youngstown State University. Edison and Marion Technical have already moved most of their courses to UC’s hosted environment and plan to migrate their remaining courses in spring 2005. Youngstown State and Rio Grande piloted WebCT Vista in fall 2004, will train more faculty in winter 2005, and plan to move their remaining local courses to Vista in summer 2005.

This model also offers other benefits to participating institutions:
- It lets all institutions move to a common enterprise-level license. CMS vendors offer various licensing models. A “campus license” typically provides entry-level stand-alone CMS services, whereas enterprise-level licenses are designed to integrate the CMS into the fabric of an institution’s IT services. Thus, for example, when the institution’s student information system recognizes course drop-adds, the class registration lists maintained by the CMS will also reflect them.
- Because enterprise integration requires more technical capabilities, hosting institutions are assisting the clients in migration and implementation, version control, and backups.
- OLN centrally manages license negotiation and management.
- The host institution offers faculty and system administration training.
- WebCT and Blackboard councils facilitate sharing best practices among participating institutions.
- Faculty using the hosted CMS naturally form a statewide community that fosters sharing of experiences and leads to other areas of collaboration.

The underlying business model encourages collaboration among institutions. While the seed money available from state appropriations lowers the initial cost of collaboration, participating institutions also gain a much more functional enterprise system for the cost of a more basic system. Shared hosting also reduces administration costs.

In addition to the administrative advantages for both host and client institutions, further benefits may accrue to the academic programs through course management systems and particularly through the institutional collaboration and sharing. The learning environment’s effectiveness, faculty innovation in pedagogy, and potential course sharing can all increase. Creating an online environment that can be standardized helps students more easily learn the CMS tools. Similarly, creating standard environments and minimizing the time needed for administrative tasks can reduce faculty members’ investment in developing and administering online course components. Finally, and perhaps most significant from the collaborative perspective, course content can be shared across sections and beyond institutional boundaries. The combination of common CMS products and collaborative efforts overseen by multi-institutional councils pro-
vides opportunities for the many advantages of standardized delivery systems.

**Benefits to the Host Institution**

The host institution, and particularly the IT unit, must be prepared for the challenges in perspective, business model, technological expertise, and basic service commitment to meet hosting responsibilities. The benefits flow to both the institution and the IT unit. At the University of Cincinnati, UCit developed a reputation for reliable service, sound financial management, and a high level of trust. Further, it gained the ability to provide a significant menu of services both internally and externally based on a proven business model combining state support, chargebacks, and external revenues. Available UCit services include server hosting, video broadcasts, streaming media for campus events, Web development services, Internet communication services, voice and data networking, data backup, mass storage, and CMS hosting.

According to UC Vice President and Chief Information Officer Fred Siff, the unit had developed the key elements and was prepared for opportunities such as being a host institution in the current pilot collaboration. A fundamental point, he suggests, is that “while campus IT at UC is not a business, it should be run like a business.” Internally to UC, this means UCit must perceive itself not as a monopoly but as a supplier in a competitive marketplace. Services should be governed by SLAs, and central IT needs to earn its business on the basis of good service that meets user needs. Given this internal philosophy, reaching out to external communities—for example, sister institutions—is just an extension of the business model. Since state appropriations are a decreasing share of the overall budget, chargebacks and external customers are becoming more significant to the central IT organization’s budget. To the degree that the organization can manage the marginal costs of scaling, collaborations such as this offer financial benefits.

There is also the less quantifiable benefit of being perceived as a leader in Ohio higher education and a related demonstration of accountability to stakeholders in public higher education. When an institution takes a recognized leadership role in activities such as this, it improves its image among legislators, citizens, and leaders at other institutions.

**Benefits to Client Institutions**

Client institutions can reap substantial benefits. They receive an upgraded CMS for the price of a basic one with state subsidy through the project. Further, while demands on IT organizations increase, the CMS support requirements decrease, and the host institution provides technical support for migration and integration with other campus services as well as installing new releases and keeping the software current. Maintaining a learning environment online is a 24 x 7 activity, but smaller institutions often lack the required staff, disaster-recovery capabilities, and other resources. Host institutions necessarily have such services in place. The softer services—license management, faculty training, content sharing, improved access for students—that often stress smaller institutions come as part of the agreement from the host institutions.

**Lessons Learned**

Although collaboration has become increasingly attractive as demands for service rise, resources shrink, and the price of independence grows, some institutions continue to resist sharing. Loss of autonomy, services, and control coupled with uncertain costs and a basic lack of trust in the quality of other university technology operations are among the reasons for the reluctance to enter service-sharing agreements.
The Ohio pilot appears to offer solutions for most of these issues.

**Create Trust Through Governance**

Representative councils ensure shared control, SLAs ensure services for a fixed period of time, and the business model foundation seems to promise the requisite level of authority and service-level commitment or quality assurance for both host and client. Involvement of commercial vendors and state agencies provides further stability. The governance structure in which all stakeholders are represented and decision processes are transparent helps create the requisite level of trust.

**Prove the Concept**

Some institutions have chosen not to participate in spite of the perceived benefits. Apparently, the potential loss of control trumps other considerations. Green observed that the implementation team “just hasn’t done enough to educate” other institutions. But he believes such projects gain credibility from success and that more institutions will join over time.

**Seed Money Is Invaluable**

Without state assistance, this pilot might not have been launched. Although alternatives might be possible, the carrot of state assistance brought this effort to reality. This initiative has been based on a “buy-in” model rather than a “mandated” model. Seed money from the state was an important ingredient to get institutions to try a new service approach. It reduced their fears and stimulated initial participation. Similarly, because creating an effective online learning environment is a multifaceted project, the willingness of OhioLINK and the OSC to provide complementary services creates a synergy that adds value to all of the projects.

**Vendors Are Collaborators Too**

The initiative required some flexibility on vendors’ part. One had to support a somewhat different business model than it had previously pursued. This required not only a different licensing strategy but also a different model for deployment and technical support. Vendors’ support of the initiative helped establish trust in its sustainability. There is strong confidence that it will continue and expand even after the seed money has been expended.

**Conclusions**

Ohio has implemented the components for a broad approach to enhancing educational access via online services, and this particular initiative could be undertaken in other organizational structures. It does require that technologically mature institutions be willing to host external entities and that client institutions give up some control over service deployment to gain the benefits. Also, the Ohio team observed that OLN’s presence and effectiveness as a facilitating agent was an important ingredient for success. OLN helped get the discussions under way and has served as both the banker (to manage disbursement of the seed funds) and the overall project manager.

To conclude that the Ohio collaboration could or could not be replicated elsewhere would require study of the local situation. The replication would certainly require identifying how to bring about satisfactory control, governance, SLAs, and funding, but much would depend on the factors that Siff suggests are the basis for the Ohio pilot:

- respected and dependable leadership,
- competent and reliable system administration of a first-class product, and
- external funding.

The first two factors also rest on trust: the client institutions must trust the leadership of the facilitating organizations and that of the
host. The trust is built not on promises but on performance and delivery. Siff is quick to admit that UCit built trust first within the university and then replicated it externally, following the motto “deliver, deliver, deliver!” That service motto may be even more important to external clients than to internal units.

**Drexel University—Higher Education’s Application Service Provider**

What happens if you suddenly realize you’re not in the business you thought you were in? This realization struck John Bielec, Drexel University’s vice president and chief information officer. Several years ago, one of Bielec’s deputies observed that Drexel’s IT organization had become more like an ASP than a traditional university IT organization.

Bielec knew his IT organization wasn’t traditional, but had it really become more like a service business? He and his staff listed the characteristics of an ASP and compared them to their organization. Drexel operated multiple applications on behalf of multiple institutions in exchange for a fee. They leveraged the Internet and their clients’ networks to deliver services. They provided both remote and on-site services. They were obligated to deliver reliable services that met the needs of both Drexel and other institutions. Drexel had in fact become an ASP.

While the realization of Drexel’s transformation came relatively suddenly, the actual change was long term and deliberate. It had its roots with Drexel’s president, Constantine Papadakis. Shortly after becoming president, Papadakis told a Philadelphia Inquirer reporter that part of his vision for Drexel was that it would become a service provider to the many small colleges in the Philadelphia area. Ever since, Papadakis has been an active champion and sometimes the sales force for Drexel’s efforts to deliver IT services to other institutions.

No one except Papadakis ever expected the university’s ASP services to grow as extensively as they have. But the move to become a service provider was deliberate, motivated by three issues:

- a desire to spread Drexel’s fixed IT costs over a broader number of users to capture greater economies of scale;
- a need to let IT staff pursue the challenge of becoming a service provider as part of a strategy to improve staff retention; and
- a quest to diversify technology funding sources to provide greater flexibility to invest in new technologies.

Papadakis explained his support for becoming an ASP primarily as a retention strategy to ward off the effects of the dot-com boom. “To be a world-class university, Drexel needed a world-class IT organization. I needed to create a challenging environment that would help me to recruit and retain the best IT people. There is no challenge in the status quo,” he said.

The following sections describe the services Drexel provides, the benefits it and the institutions it works with have received, and the lessons learned along the way.

**About Drexel**

Drexel University is a private research university located in West Philadelphia. The university has aggressively built its reputation as “Philadelphia’s Technological University.” The institution has actively pursued the integration of technology and education. In 1983, Drexel became one of the first universities to require all students to have personal computers. In November 2000, Drexel became a fully wireless campus as well.

In 1998, Drexel accepted a proposal from Tenet Healthcare Corporation to operate the former Allegheny University of the Health Sciences as MCP Hahnemann University—an outsourcing arrangement. After a period of due diligence, Drexel fully acquired MCP Hah-
nemann. As a result, Drexel today includes a School of Medicine (the largest private school of medicine in the United States), a School of Public Health, and a College of Nursing and Health Professions.

The acquisition of MCP Hahnemann was the catalyst for transforming Drexel’s IT organization into an ASP. At the time of takeover, Drexel’s IT organization was given the challenge of creating an entire IT infrastructure to support MCP Hahnemann. Drexel decided the only way to accomplish this was to extend Drexel’s existing systems to the new medical school. Within six months, Drexel implemented network services, e-mail, and administrative systems for the medical school. The technology was the same as that used by the rest of Drexel and was operated out of the university’s existing data center. It was this experience that cemented Drexel’s confidence that it could rapidly configure its existing technology and staff to deliver services to remote clients (the medical school is on a separate campus).

**Drexel’s ASP Services**

Nearly 40 colleges currently engage Drexel to provide services that range from total IT outsourcing to more targeted applications. Drexel currently provides services in seven areas:

- course management services via WebCT;
- Internet2 Abilene network services;
- SAP academic software hosting;
- portal services and mobile services;
- enterprise resource planning (ERP) application hosting—SCT Banner, Oracle Database, and Brio Applications;
- IT leadership and strategy; and
- IT staffing.

Drexel has its most comprehensive service arrangements with Cabrini College, Medaille College, and the university’s medical school. Each has contracted with Drexel for hosting and provision of ERP applications, portals, e-mail, course management systems, and IT leadership and strategy. Other institutions receive a subset of Drexel’s total service offering. Table 1 illustrates the range of clients and services Drexel supports.

Cabrini and Drexel entered into their ASP agreement in stages. It began with a short-term agreement for Drexel to provide interim IT leadership to help rebuild Cabrini’s internal IT capacity after several IT staff members’ departure. During this transition, Drexel helped Cabrini standardize its IT policies and procedures, improve its use of e-mail, and hire some key staff. The interim period was so successful that Cabrini opted to use Drexel as its IT provider. Fundamentally, Cabrini decided it could move faster to upgrade its technology by leveraging Drexel’s expertise and systems.

Drexel serves other institutions in more targeted ways. For example, Drexel hosts the WebCT course management system for Neumann, Rosemont, and Wilkes Colleges, among others, and provides SAP software for numerous business schools that use it in their academic programs.

Drexel’s institutional customers have seen significant benefits from its ASP services. They have access to greater expertise than they were able to employ in their own IT staff. They have been able to quickly access multiple technologies at a lower cost than if they had tried to implement and operate those same technologies themselves. Medaille and Cabrini have effectively contracted with Drexel to be their institutions’ IT organization. In Cabrini’s case, Drexel employees work on the Cabrini campus and provide everything from network services to help desk and desktop support. Drexel IT leaders attend Cabrini cabinet meetings and perform CIO duties.

Cabrini came to Drexel initially for advice. Turnover and organizational issues in its IT department had left the college in need of
some short-term staffing support and strategic advice. The three-month period of interim leadership extended to six months as Cabrini and Drexel began to discuss a more wide-ranging, long-term relationship. The two institutions soon signed an agreement for Drexel to provide Cabrini with an IT director and staff that report to Drexel’s CIO but are accountable to deliver service to the college. With the agreement in place, Drexel began to provide the college access to its administrative and academic computing services.

Drexel patterned much of what it did for Cabrini on what it was already delivering to its own medical school. However, this was a significant development in Drexel’s growth as an ASP. For the first time, it was providing a full set of services to an institution outside the Drexel family. Drexel and Cabrini had to work through myriad issues, including

- the nature of the agreement between Cabrini and Drexel;
- how to integrate Drexel’s IT leadership into Cabrini’s leadership discussions;
- how to alter existing vendor license agreements to enable Drexel to extend those systems to Cabrini; and
- how to implement Drexel’s existing systems and, to an extent, its administrative business processes at another institution.

Table 1. Drexel’s ASP Services

<table>
<thead>
<tr>
<th>Services</th>
<th>Drexel</th>
<th>CoM</th>
<th>Cabrini</th>
<th>Neumann</th>
<th>Medaille</th>
<th>Rosemont</th>
<th>SSHE</th>
<th>Wilkes</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT Leadership/Strategy</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desktop Support</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Server Support</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help Desk</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Networking</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet2 Gateway</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

Applications

<table>
<thead>
<tr>
<th>Services</th>
<th>Drexel</th>
<th>CoM</th>
<th>Cabrini</th>
<th>Neumann</th>
<th>Medaille</th>
<th>Rosemont</th>
<th>SSHE</th>
<th>Wilkes</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mail</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online Courses</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Storage</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finance</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human Resources</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Info. System</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alumni/Development</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portal</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Software (SAP)</td>
<td>15 schools of business across the United States</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: John Bielec, Drexel University, “New Models for Delivering IT Services”
Cabrini provided Drexel with an ideal partner for piloting approaches and learning lessons. The college entered into its relationship with Drexel knowing that it would be giving up aspects of control and decision making in exchange for access to much higher levels of capability. Cabrini’s president, Antoinette Iadarola, fully supported the initiative from the beginning. She explains, “We wanted to work with Drexel because they were a technology leader. But they were also an institution, and because of this they spoke our language, understood our mission, and alleviated our concerns.”

Stephen Lightcap, Cabrini’s vice president for finance and administration, sees the trade-off the same way. “Some users complained about the loss of flexibility,” he explains, “but that is a by-product of moving to any commercial system.” Lightcap went on to explain that he and Iadarola see the loss of flexibility as positive. “We wanted to adopt Drexel’s standard business processes to gain efficiency.”

**ASP Benefits**

The benefits of receiving services from Drexel are many. Its customers have gained access to significant buying discounts and economies of scale by pooling their interests with Drexel’s and those of Drexel’s other ASP customers.

For John Bielec, the bottom line is that his customers magnify the impact of their “first technology dollar.” By working with Drexel, they leverage a much larger investment in IT infrastructure that can be shared across multiple institutions. They don’t have to replicate either the hardware infrastructure or personnel investment that Drexel has already made.

Drexel’s customers have received some of the following benefits:

- **Speed.** By adopting Drexel’s administrative applications as they come, institutions have saved many months of product selection and implementation time.
- **Knowledge.** Drexel can recruit and retain deep and broad IT skills. The Drexel IT staff’s applications, networking, and instructional technology expertise is beyond the hiring reach of institutions like Cabrini or Medaille.
- **Savings.** Drexel’s ASP services save its customers money by reducing purchasing costs, sharing IT infrastructure and services across multiple institutions, and reducing the cost of implementing technology, to name just a few savings areas.
- **Risk avoidance.** Most of Drexel’s customers cannot afford the cost or risk of being on the cutting edge. In the ASP arrangement, Drexel is the early adopter of new technology that then becomes available to the institutions it serves.

For Drexel, the benefits have been significant as well. The university has significantly diversified its revenue streams. Today, a substantial portion of its revenue comes from outside the university. Drexel envisions a future in which more than half its revenues come from outside the university (it is between 30 and 40 percent today). As a result, Drexel’s IT funding has been more stable, and the IT organization has been able to preserve greater financial flexibility to continue to invest in innovation. By serving other institutions, Drexel has spread its fixed costs for basic IT infrastructure—including parts of the network, its data center, and major administrative applications—over a larger user base. This has lowered Drexel’s operating costs and provided a more reliable revenue stream to fund renewal and replacement.

In a recent paper, coauthors Bielec and Iadarola described the benefits this way: These relationships have provided the Office of Information Resources and Technology at Drexel with additional resources that can be used to “grow” the initiative
and enhance Drexel services. ASP funding has been used to acquire staff for special assignments. These partnerships have brought the university added attention and distinction in the field of higher education. 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 entrees into the market. Drexel staff have enjoyed new opportunities for management and leadership in working with partner schools.\(^5\)

The university has also met President Papadakis’s vision to retain staff by presenting them with a unique challenge. Drexel’s IT organization has seen very little staff turnover during the past five years. Although staff members sometimes complain about the stress and workload required to bring on a new client, they are uniquely dedicated to and motivated by the task. Drexel’s IT staff receive no additional compensation or bonuses for serving other institutions. They are motivated by the challenge and sense of accomplishment that comes from adding a new client. They exhibit deserved pride in what they have done, and that in itself seems to compel them to stay at Drexel.

**Lessons Learned**

Drexel’s experience as an ASP provider has not been without its challenges and unanticipated events. It has had to grapple with such challenges as:
- pricing its services,
- developing methods to manage customers and staff at a distance,
- integrating its staff and processes with its client institutions’ leadership, and
- negotiating new pricing models with hardware and software vendors.

Drexel believes its ASP services have been an overwhelming success for the university and its clients. Several critical lessons learned have emerged from Drexel’s experience.

**Presidential Support Matters**

Drexel would not have even considered becoming an ASP without the president’s prompting and ongoing support. His support let IT leadership move quickly to establish agreements, take risks, and make investments to win clients. Presidential support is also Drexel’s top criterion when screening institutions that want to receive its services.

**Institutional Culture Matters**

Many institutions would view attempting what Drexel has done as risky or an unnecessary distraction for the IT organization. Drexel viewed it as aggressive but expected. Drexel prides itself on its entrepreneurial spirit, and this culture fosters the kind of risk-taking and creativity that make what the IT organization has done possible.

**You Need Partners**

Drexel could not deliver its most extensive ASP services without a strong partnership with staff in the university’s functional departments. Business analysts from Drexel’s student, finance, and human resource units have been vital to guiding Cabrini, MCP Hahnemann, and Medaille through their Banner implementations. They helped their counterparts in those organizations’ functional units design their policies and processes to leverage Banner. Their presence is critical to making client organizations comfortable with the notion of adopting systems designed for Drexel.

**Being a University Matters**

Drexel believes that being a university serving other institutions gives them a fundamental advantage. Drexel’s ASP model works only if clients accept that they must use the same systems the way Drexel uses them. This is inherent to the ASP model. Without it, any
economies of scale are lost. Institutions have been more comfortable accepting Drexel’s way of doing business because as a university it can speak knowledgeably about how its systems will address its customers’ business requirements. Just as important, Drexel is trusted to understand ASP customers’ culture, mission, and strategy. This is critical to success at Cabrini and Medaille, where Drexel staff must blend into those institutions’ cabinets. They must understand the institutions’ strategic direction and recommend ways to leverage technology to support those strategies.

It’s Not a Consortium

Drexel does not insist on much of a formal relationship with its customers. Its standard agreement is simple; it does not contain guaranteed service levels or performance metrics. What it does insist on is an understanding that the customer is not entering into a consortium. There is no shared governance, and customers must yield significant control of their IT agenda to Drexel. While Drexel pays close attention to its customers’ satisfaction, it makes clear that it will determine what products will be used and how. Clients cannot modify products but can configure them for local needs. Drexel controls the timing of major upgrades and the introduction of new features.

Conclusions

Drexel and its institutional customers have taken an entrepreneurial and innovative approach to grappling with technology’s costs and complexities. With IT costs continuing to rise and resources remaining scarce, we should see more such arrangements in the future. Certainly, Drexel intends to seek more opportunities to enhance its revenue base and leverage its IT investment by working with others.

More institutions like Cabrini and Medaille are likely to be looking for service providers as well. Whether it is from another university or a corporation, smaller colleges will need to tap into the expertise and economies that shared IT services provide. Cabrini’s president sees the future this way and advises her colleagues to look for similar ASP arrangements. “Small colleges need technology to be competitive, but we are not in the business of technology. We cannot afford the costs or the risks of going it alone.”

Drexel’s Papadakis simply wants to know when his IT organization will be ready for “their first global customer”!

Common Themes

While each case is unique, some common lessons emerge that can inform any collaborative effort.

- **Consortium or customer.** As the cases illustrate, collaborations come in many forms. Some involve equal partners all sharing in the governance. In others, such as the Drexel case, participants are customers of another institution. It’s critical to know ahead of time what model you’re entering into and make sure participant expectations and governance processes are aligned appropriately.

- **It’s a business relationship.** All of these cases were facilitated because they were collaborations among like-minded institutions. However, that was not enough to ensure success. The collaborations were pursued as business relations with detailed agreements specifying roles, responsibilities, and financial commitments.

- **Leadership matters.** As with any significant innovation or change, leadership makes the difference. Neither providers like Drexel and the University of Cincinnati nor the participants could have succeeded without the strong support of their institutions’ leaders.

- **It’s all about delivery.** Whether it’s Fred Siff’s mantra to “deliver, deliver, deliver”
or John Bielec’s commitment to never let a customer down, these collaborations are not for the faint of heart. Becoming involved requires a significant commitment of resources and staff time, and as the Massachusetts case shows, overcoming obstacles requires perseverance and flexibility.

Higher education has always exchanged ideas and information effectively, but we don’t have a strong track record of true administrative collaboration. These cases illustrate what is possible.

### Endnotes