



University of North Carolina at Chapel Hill: Integrating IT Support Institution-Wide

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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.

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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—designed to help senior executives quickly grasp the core of important technology issues.

From its most recent research, ECAR published a study, *Service on the Front Line: The IT Help Desk in Higher Education*¹ by Mark C. Sheehan, about the state of higher education help desk organizations, services, tools, resources, and management practices and how these and other measures relate to desirable help desk outcomes. That study

reveals positive associations between overall help desk service quality and the existence of a strategic plan for the help desk; the central IT organization's implementation of formal guidelines from the IT Infrastructure Library service management framework² as well as central IT's inclusion of the help desk in them; and the characteristics that define the help desk's organizational maturity as delineated by the Software Engineering Institute's Capability Maturity Model.³

Literature Review

The literature review helped identify and clarify issues, suggest hypotheses for testing, and provide supportive secondary evidence. Besides examining articles and studies from journalistic, academic, and IT practitioner sources, we relied heavily on IT service management standards and frameworks to develop study objectives and survey questions.

Online Survey

We designed and administered a Web-based survey that was distributed to the senior IT leaders at all 1,473 EDUCAUSE member institutions. We received 454 responses to the survey (a 27.6 percent response rate).

Interviews

We conducted follow-up telephone interviews with higher education CIOs, help desk managers, and IT staff members from about 20 institutions to gain deeper insights into findings from the quantitative analysis and to capture additional ideas and viewpoints.

Case Studies

ECAR researchers conducted this in-depth case study to complement the core study. We assume readers of this case study will also read the primary study, which provides a general context for the individual case study findings. We undertook this case study of the University of North Carolina at Chapel Hill (UNC-CH) to demonstrate how the central IT help desk can become an integrating support organization in the context of a large, decentralized university.

ECAR owes a debt of gratitude to Priscilla Alden, ITS User Support and Engagement Assistant Vice Chancellor, for her support in coordinating the UNC-CH components of the study, including the logistics of a site visit. Additionally, we would like to thank her staff, who gave of their time during a very busy period of the academic year. These are Bruce Egan, Director of the ITS Response Center; Brett Vasu, Manager, Electronic Services; Matt Howell, Manager, Walk-In Services; Ingrid Camacho, Manager, Phone Services; Chris Williams, Manager, ResNET; Greg Neville, Software Acquisition; Cherritta Nickerson-Salter, Manager, University Operators; Christina Artis, Postmaster; Tomee Howard, Manager, Remedy Services; Linwood Futrelle, Manager, Computer Repair Center; and Ken Yow, On-Site Support Manager. Similarly, we wish to thank Executive Vice Chancellor and Provost Bernadette Gray-Little, Interim CIO John Oberlin, and Deputy CIO Robyn East for providing insights on this topic. Finally, Marc Tillet, Manager, Academic Computing, for the College of Arts and Sciences; Tom Morris, IT Manager, School of Public Health; and

Judith Wegner, Burton Craige Distinguished Professor, School of Law, all shared valuable insights with us.

Introduction

A large institution, with its myriad central and local IT organizations, can make effective IT support a daunting and elusive proposition. A quick question can turn into a prolonged quest if the user has to navigate through a series of phone calls just to locate the correct IT organization to fix a problem. The result can be a very disgruntled student, faculty, or staff member in the short term, and may cumulatively foster a general sense of dissatisfaction with the entire IT organization across the institution.

UNC-CH's IT help desk structure typifies that of many large universities. "Even the words 'help desk' have to be used loosely here because some of the schools have an actual manned help desk with a phone number to offer tier 1 and tier 2 support for their staff," says Priscilla Alden, ITS User Support and Engagement assistant vice chancellor. "Others have a group of two or three techs who provide on-site support in response to an initial call."

However, the User Support and Engagement group of UNC-CH's central Information Technology Services (ITS) organization distinguishes itself from organizations in some large institutions through its efforts to mingle central and distributed help desks into an integrated, cooperative "cloud" of support for IT for the entire university. The Carolina Computing Initiative (CCI), a requirement implemented in 2000 mandating that incoming freshmen have a laptop, fostered an institution-wide outlook and a campus-wide infrastructure to handle IT support. But the ITS User Support and Engagement group is building on the original CCI mandate continually to improve university-wide IT support. Its actions offer insights for the typical IT organization to enhance its own operations.

Initially, ITS elevated and professionalized its help desk function, which created the User Support and Engagement group to handle the CCI's anticipated IT support requirements. Over time the new group has worked hard to enhance communication and trust with other IT help desk organizations, fostering a university-wide positive attitude toward IT support.

Today, the main focus of the ITS Response Center/Help Desk (referred to subsequently as the ITS Response Center) is to provide the first point of contact for ITS, but it is striving to teach people to call its number first for any IT problem. Consequently, it tends increasingly to be the first point of contact for IT issues involving institutional areas other than central IT. Its help desk analysts diagnose and solve problems, and, if unsuccessful, they ticket and transfer the client's request via an enterprise-wide Remedy (BMC's service management software) application to the appropriate campus IT organization.

Over time, relationships prospered and a sense of trust emerged among various UNC-CH IT organizations. One extension of this trust is the ITS Response Center's assumption of varying degrees of help desk services for some university colleges and schools, including the College of Arts and Sciences, the School of Public Health, and the Kenan-Flagler Business School. "There is growing interest in this model around campus," states Alden. "Schools tend to step into this gradually. The idea is that if we can provide the frontline service, then the schools can focus on what they do best, which is providing on-site support." She echoes the experiences of David Gregory, chief information technology officer at Colgate University, as discussed in *Service on the Front Line: The IT Help Desk in Higher Education*. According to Gregory, who has outsourced his tier 1 help desk for four years, outsourcing can be transformative, if not revolutionary, in allowing the university's own help desk personnel to concentrate on

more strategic, higher-level problem solving.⁴ (Arguments for and against outsourcing are discussed further in the case study *Bowdoin College and Colgate University: Using the Help Desk Strategically to Revitalize an IT Organization*,⁵ published in conjunction with the main research study.)

In the future, the ITS Response Center will move toward an IT service management (ITSM) model whereby it would manage a service request ticket from start to finish. Even though the Response Center might route the ticket over to a local IT group, the ticket would remain on its radar for follow-up to ensure that the appropriate IT area resolves the problem. "We are trying to build the different help desks into a team with a common goal of trying to solve the customers' problems," states Alden. "We are different organizations, but we are weaving ourselves together into a single informal unit."

The principal focus of this study is to examine the changes brought about over the last two years by making the ITS Response Center the front end for help desk services for other IT units around the campus. These changes have reduced confusion among users seeking support and have been part of a broader effort to improve mutual trust and cooperation between campus IT organizations.

Background

UNC-CH is the nation's oldest state university. Its origins date back to the state constitution of 1776, but the choice of location in Chapel Hill and actual construction didn't culminate until 1792. UNC-CH has 27,500 undergraduates. In addition to 71 bachelor's programs, the university offers 110 master's and 77 doctorate degree programs. The university offers professional programs in business, dentistry, law, medicine, nursing, education, pharmacy, social work, and public health.

Although Information Technology Services (ITS) supports enterprise applications and

services, most of the schools and colleges also have IT support services for their user communities. This provides a challenge as well as an opportunity to create a coordinated support infrastructure that allows users to get the services and support they need.

The CCI, which started with the class of 2000, emphasized to the university administration the need for coordinated support. The CCI requires that every entering and transfer student own an approved computer. Additionally, the faculty in the College of Arts and Sciences were assigned a comparable computer. According to Executive Vice Chancellor and Provost Bernadette Gray-Little, "Prior to the CCI, 80 percent of students were coming to UNC-CH with computers, but what was missing was the support to make computer technology a useful academic tool." Thus it was decided that an institutional commitment that parallels the individual student commitments would be to create a first-class support organization with appropriate customer-facing services. These services became the User Support and Engagement division, which includes the ITS Response Center/Help Desk.

UNC-CH's ITS was created in 2004 by the merger of the previous UNC-CH central IT organizations: Academic Technology and Networks, and Administrative Information Systems. In addition to the two divisions devoted to ITS administration, ITS has numerous functional divisions:

- ◆ ITS Communications includes cross-media communications, which integrates traditional media services with digital media services. Additionally, it supports knowledge management, Web services, and Web hosting services.
- ◆ ITS Enterprise Applications is responsible for developing and implementing individual administrative department business applications as well as enterprise applications such as Financial Services, Human Resource Services,

Health Services, and the Student Information System. Additionally, it supports middleware services and identity management services for UNC-CH. Messaging services such as e-mail and calendaring are located in this group.

- ◆ ITS Information Security manages compliance with university, state, and federal guidelines regarding data integrity and privacy, and works to ensure network and system security.
- ◆ ITS IT Infrastructure and Operations provides machine room and operations, including systems management, for all ITS business computing activities. Additionally, it provides disaster recovery and business continuity services for ITS. Finally, it provides centralized desktop infrastructure services intended to ease the support burden on departmental and other technology administrators.
- ◆ ITS Teaching and Learning Division is responsible for Blackboard support, multimedia development and production, student computer labs, technology training and education, and video services. It also includes a Learning Space Design group and classroom support.
- ◆ ITS Telecommunications designs, supports, and maintains the production networking and telephony infrastructure for the campus. The division also does research and development on next-generation network technologies.
- ◆ ITS User Support and Engagement includes the Computer Repair Center; the ITS Response Center/Help Desk; Remedy Development; Remedy Services; On-Site Support; Walk-In Support; Residential Networking, Education & Technology (ResNET); Electronic Services; CCI; and the university telephone operators.

Seeding a University-Wide “Cloud” of IT Support

Two factors have influenced UNC-CH’s institutional focus on IT support. As discussed in this section, the CCI prompted the ITS organization to professionalize its help desk operations to support the influx of student laptops on campus. The enterprise-wide adoption of Remedy facilitated institutional IT support. Together they fostered cooperative attitudes and actions for IT support throughout the UNC-CH campus.

Carolina Computing Initiative Mandates IT Support Reorientation

In 1998 then-Chancellor Michael Hooker said about the CCI that “Carolina has a responsibility to prepare our students to live and work successfully in the knowledge-based economy of the 21st century. Students entering in 2000 and beyond will gain computing skills we know they will need to compete in a rapidly changing workplace.”⁶ The program, which started as a pilot in 1999, also focused on ensuring that comparable machines were available for the faculty and key academic staff in the College of Arts and Sciences, where most undergraduates take classes. Although originally focused on entering freshmen and some faculty, the CCI program now includes transfer and graduate students and has recommended laptops for all undergraduate and graduate students as well as all faculty and most staff, under personal and departmental purchase plans.

In preparation, Linwood Futrelle, manager of the Computer Repair Center, observed that CCI planning really started in 1997, but the university spent the time until the full implementation in 2000 putting support in place and helping faculty prepare. The support component started with setting minimal configuration standards and establishing a relationship with a single vendor. After a review process, IBM and its ThinkPad

laptops were chosen as the recommended CCI computers. Having a single vendor and recommended machines has allowed UNC-CH to leverage many support services. Although ongoing changes affect the support operation, UNC-CH continues to invest substantially in creating robust support services.

While the requirement is to have an *appropriate* computer, students have many incentives to buy a *recommended* CCI computer. Freshmen qualifying for need-based financial aid are eligible for grants that assist in paying for such a computer. Other students can take out loans. The university negotiated favorable software licensing agreements, and basic software is already loaded on machines. Preordered computers are available during summer orientation sessions, and training is included in those sessions. Freshmen who purchase CCI laptops are called during the summer before they arrive on campus to see if they have any issues with their new computer. There are random follow-up calls during the year. The goal is to have as smooth a transition, technology-wise, as possible for entering students.

Having set expectations for students, faculty, and staff, UNC-CH felt that it had to provide the support services that would make required computer ownership easy, reliable, and as risk-free as possible. “One of the real problems was how we could support the laptops so they can be a more viable and useful tool,” recalls John Oberlin, interim CIO. “If we see the laptops as mission critical to the success of the university and the students, then we had to make a commitment to create an appropriate support environment.” Oberlin describes the help desk organization at the time as “well intentioned, but not well organized.” A consequential three-part ITS mandate outlined a high-level policy change for the ITS help services:

- ◆ *Create a single helpline.* “To get service, a user should not have to know the university’s IT organizational

intricacies—who to call for a Word problem versus a network problem,” states Oberlin. “Therefore we are going to create a single helpline for the campus to call and solve your problem—whatever it is.”

- ◆ *Maintain appropriate staffing.* The university made a commitment to maintain an appropriate level of staffing and expertise, with the goal of resolving 70 to 80 percent of problems on first contact.
- ◆ *Create an effective referral workflow.* “As part of the customer service mindset, the help desk was to refer the client directly to the appropriate area—without going through a middleman,” states Oberlin. “ITS will take the responsibility of tracking and following up on that referral to ensure that it happens and that the client’s problem is ultimately resolved.”

Mandating and implementing can be two entirely different situations. At the high level, Gray-Little, who during this time served as UNC-CH’s senior associate dean for undergraduate education for the College of Arts and Sciences, recalls that the CIO’s strategy emphasized strongly the concept of service during this transitional period. “Service became the CIO’s mantra and the theme of IT in an obvious, vocal way in all of its interactions with the campus. It was voiced strongly from the highest level of the IT. I was completely out of the IT organization, but I heard the message loud and clear.”

On a more practical level, Oberlin recalls that implementing the mandate was a very difficult cultural change for the UNC-CH IT organization. “It took a year for people to buy into it and constant leadership to implement it,” he recalls. “Some ITS staff members felt maligned because the message they received from management was their skills were not good enough to handle customers directly. It was a big challenge to convince

them otherwise: their skills and abilities were better applied elsewhere and allowed them to make a greater contribution. We did not want IT staff members functioning as customer support personnel. We wanted to implement a professional customer service organization.” To demonstrate this principle, UNC-CH reorganized and combined the ITS help desk function with other user-oriented services to create the User Support and Engagement group, which was led by a newly created director-level position.

“This change was consistent with the broad message,” recalls Gray-Little. “The emphasis shifted from ‘IT being something for IT’ to ‘IT being something for the campus.’ IT’s attitude changed from ‘if you did not understand it was your lack of knowledge’ to ‘I am not explaining it properly.’ It became IT’s responsibility to enable the client to understand.”

Rather than being passive, the newly created User Support and Engagement group actively sought new ways to promote university-wide IT support service. Internal to ITS, the group meets weekly with various ITS units to better understand each other’s issues. For example, when the Response Center/Help Desk wanted to enhance its PDA support, On-Site Support manager Ken Yow, whose area provides PDA support to its clients, gave them some retired PDAs from his group to help them gain some expertise. The personal relationships enable immediate feedback to the appropriate group when calls start coming in regarding problems.

Externally, the Response Center/Help Desk holds two training sessions each week with support groups around the campus to inform them of central IT issues and also to understand local issues. A Help Desk Consortium, comprising IT help desk representatives around the campus, meets once a month to discuss common issues. Members use a list-serv now to communicate immediately with the other help desks as needed. “This gives us an opportunity to share information, ask

questions, get to know each other one-on-one so they know who to contact directly and bypass the helpline,” states one User Support and Engagement manager. All these activities break down the barriers. “We form a relationship,” said Bruce Egan, director of the ITS Response Center. “People are no longer a disembodied voice. Training is a good way to do that.”

Today, the group tries to be proactive as well. “One thing that shows how mature our organization is and how proactive we are,” states Greg Neville, Software Acquisition, “is that if we solve the problems beforehand, [that] solves a thousand calls after the fact.” As an example of a more proactive approach to providing services, the ITS User Support and Engagement group is now establishing a second satellite ITS Response Center near the residence halls so students can have a more immediate support and repair site. Since students have largely standard laptops, the ITS Response Center will offer a loaner in the event that a laptop cannot be quickly repaired.

In a similar manner, IT User Support and Engagement mobilizes all of its resources to support back-to-school. They call all incoming freshmen with CCI laptops before the beginning of the semester. “The calls are as much [PR as IT], but it does help us to pinpoint problems early and we can react quickly,” states Egan. “You need a collaborative and supportive culture between the IT group and users so the services we deliver are the ones being demanded. That is part of our proactive nature. Being in touch with the user is big.”

Because CCI students have already received their laptops and explored them during the summer, ITS’s efforts can be focused on problem resolution and issues such as authentication to services. If a laptop has been compromised during the summer, a single CCI operating system image on all student laptops means the operating system can be reinstalled with a few button clicks. Similarly,

the common computer makes problem resolution easier, since the problems quickly become well known. The campus operators, main repair center, and help desk technical staff are colocated, so issues are easily communicated. Walk-in support is triaged by experienced student employees, and customers are directed to the appropriate support unit.

The Response Center staff members feel that the key to their success is in the nature of the employees they recruit. They consciously look for individuals fitting the Myers-Briggs E (for extrovert) type profile. The strength of these individuals lies in their ability to form relationships and their valuing of customer service as opposed to technical knowledge. The in-depth technical knowledge resides in the rest of ITS, where Myers-Briggs I (for introverts) types may fit better. The Response Center staff members observe that you can teach someone about technology, but it is much harder to teach an attitude of customer service. They invest heavily in training and cross-training. Rather than offering just a starting point for ITS employment, they encourage career paths in the ITS User Support and Engagement group. As a result, they have unusual longevity of employment in the help desk service. This allows personnel to have a deep understanding of the institution’s technical knowledge base and adds to their ability to resolve problems.

Remedy Application Provides Infrastructural Glue

UNC-CH IT service providers widely acknowledge that in addition to the impetus given by the CCI, the long-standing relationships formed around a common incident management system have been instrumental in building effective working relationships among the distributed IT organizations. These relationships also provide a common platform for managing the workflow of user issues across the campus. Service providers and individuals can use an integrated help desk

system, like BMC's Remedy, to manage service requests electronically—entering electronic job tickets, tracking a ticket's progress, and more. "The CCI made all the IT groups across the campus need to talk to each other," states Tomee Howard, manager of Remedy Services. "Our Remedy problem tracking application enables this communication."

In 1999, UNC-CH decided to use Remedy as its integrated help desk system. ECAR's main study, *Service on the Front Line: The IT Help Desk in Higher Education*, notes that integrated help desk systems are commonplace, with 69.1 percent of the study's survey respondents using them.⁷ What is unusual is UNC-CH's extensive customization of its Remedy system. Rather than using the turnkey applications that have been developed by the vendor, UNC-CH used an underlying Oracle database and the Remedy development platform to develop its own applications. The UNC-CH Remedy application suite with more than 30 customized applications includes the UNC-Request for Service, Project Tracking System, Computer Repair Center application, Group Information, and Customer Relationship System application.

Currently the campus Remedy team comprises a three-person Remedy Services group and a three-person Remedy Development group, both from the ITS User Support and Engagement Division. Functionality decisions are made by a nine-year-old campus-wide Remedy Advisory Council (RAC), which meets biweekly. All decisions regarding changes to the Remedy Request for Service (RFS) applications must be approved by the RAC. "Nothing can happen to this application without the blessing and consent of this group," states Howard. "That really helped meld the IT organizations across campus because, first, they configure the menus in RFS to reflect their organization's workflow; second, they have a vested interest in this university-wide service; and third, RAC offers a balance to ITS centralized services

and their own departmental services. They know that ITS will not jump in and lead, or that 'this' help desk will not outweigh 'this other' help desk."

At present, more than 20 IT support organizations represent over 200 Remedy groups on campus that appear in the Remedy workflow as possible recipients of user questions and problems. One leveraging factor of the UNC-CH Remedy applications is that all users see a common user interface and all support organizations see a common support interface, though local organizations may tweak the interface to handle their local needs. "We all worked to create a single form for tracking problem tickets across the campus regardless of your status—student, grad student, faculty, or staff—or your organizational affiliation," describes Howard. "The form is exchanged across the campus." Remedy is deployed on a UNIX platform with an Oracle back end, so it can interface with other databases on campus. The form's design features drop-down menus; the data behind the drop menus are stored in Oracle tables.

This, together with a common issues classification, allows the distributed support groups to speak a common language and allows issues to be transmitted via Remedy without ambiguity across organizational boundaries. "RAC is more of a governing body to set best practices," states Marc Tillet, manager of Academic Computing for the College of Arts and Sciences. "We can understand how a proposed Remedy solution will impact the different schools due to their operational characteristics." Tom Morris, IT manager for the School of Public Health, continues, "It provides an understanding of the rationale behind a decision or workflow. RAC is responsive to input and feedback from the local IT department members when making RFS decisions." The RAC spearheaded creation of these understandings and has also established a basis for an ongoing working relationship among the participants.

For the Response Center, “Remedy is the glue that holds us together,” states Bruce Egan. “Hopefully the days of calling six phone numbers to get the person you need are over. We are the primary face for tech support. The client makes one phone call and we take the ticket and forward it to the right group, making the process as transparent as possible to the client. No matter who the client ends up with, you can start out with us.”

Remedy assists the support process in many ways. Its front page displays a status of all the key IT services. A help desk analyst can check Remedy to see which tickets are open and which analysts are assigned to the tickets. When a person calls the Response Center/Help Desk, Remedy’s drop-down menus guide the help desk analyst through the troubleshooting process, the referral process/protocols, and response times as defined by the client’s local IT organization’s service level agreement (SLA). As a result, he or she can set the appropriate client expectations. The ticket is forwarded, if needed, to the local IT organization for resolution.

Upon problem resolution, the Remedy RFS application enables the Response Center to track client satisfaction. After the ticket is closed out, RFS sends a follow-up e-mail that provides a link to a survey for the client to fill out about his or her service experience. Egan estimates response rates at about 10 percent, and the ITS help desk analyst receives a copy of the survey. “One of the top priorities is to act upon negative feedback,” states one ITS User Support and Engagement manager. “We notify the client that we got the feedback and we are working on it. We don’t want the customer to think that we did not solve their problem.”

Egan concedes that keeping all the information up to date can be a challenge. For example, ID management enables the databases to work properly to get correct information.

The Remedy platform supports other aspects of the ITS User Support and Engagement

operation, tracking students’ machines from purchase to repair. For example, when a freshman purchases a CCI laptop, the MAC (media access control) address is automatically registered and stored in Remedy along with the model number and serial number. If the student’s laptop is repaired, the Remedy application pulls up the laptop’s information as well as its entire repair history. Various Remedy applications track insurance, hardware repair, and the reinstatement process for compromised laptops. Yow describes his use of Remedy in his On-Site Support area as a continuum for providing

- ◆ ticket information to his administrative organization clients so that managers can identify process issues and employee training requirements,
- ◆ billing information for other clients, and
- ◆ resolution of client disputes.

Local IT organizations rely on Remedy, too. “I tell the faculty and staff in my area that you can stop my staff in the hall or give us a call, but the best way to ensure that your service request does not fall through the cracks is to submit your help request in Remedy,” states Morris. “If I am out sick, someone will review my queue in my absence. If I get behind in my tickets, a reminder pops up.” Tillet likes Remedy’s information sharing capabilities. “The amount of information that Remedy shares is significant,” he states. “It is not just the inputted information, but the small information as well: date and time, a trail on who handled the ticket and when. You have the ability to see the entire process, and it eliminates backtracking. It is all done behind the scenes. Some problems may pass through seven or eight groups before being resolved. The ticket may have only sat in a department for 45 seconds before it is sent on, but it enhances our ability and ITS’s ability to triage it. Try doing all of that through e-mail.”

Reporting out of Remedy is done via Crystal Reports, but reporting continues to be

a work in progress. For example, ITS would like the ability to do a free search on problems and to have a database of who supports particular problems. These are not currently available.

Outreach Services

Over the past eight years, the various IT organizations around the UNC-CH campus grew used to the cooperative resolution of individual client support requests by participating in a set of help desk services developed and run by ITS on the basis of Remedy. Eventually ITS began to work even closer with specific colleges and schools on IT support. “It took a big load off of them,” explains Oberlin. “ITS picks up the load centrally, handling the more mundane support issues for the departments and schools. It means that departments and schools could deploy their resources more effectively to take on the harder, more specialized issues in their various areas.”

Egan concedes that outreach is not a solution for every school, but he discussed how Priscilla Alden and he work to bring more schools into the fold. “We provide services that they want; we don’t mandate their participation,” Egan explains. “Our experience is that the latter does not work well. Over the years this group has worked not only to serve the customer on a day-to-day basis, but to establish the relationships with other organizations. We managed to position ourselves so we are not perceived as a threat to the local IT organizations. We just identify ways we can enhance their operations. We don’t view ourselves as the typical help desk; we are the public face of the IT organization; and we are the customer advocate for his or her immediate problem as well as the advocate for the systematic problem.”

While some colleges and schools continue to largely provide internal IT support, two major units—the School of Public Health and the College of Arts and Sciences—have turned to the ITS Response Center. Each is a large unit of the university and has traditionally

been self-supporting in the IT area. Based on the success of the CCI, they each decided that it didn’t make sense to duplicate the call-in services for customer support, so they contracted with ITS for the Response Center to be the front-line call center. “Part of the reason was financial,” states the School of Public Health’s Morris. “The second is the high quality of ITS management and its staff, as well as the highly organized means of dealing with its client responses. The ITS organization really has evolved, and they continue to fine-tune their help desk operations.”

The School of Public Health is a microcosm of the university, with 1,705 students in nine departments ranging from hard sciences to social science orientations. While Academic Support is run out of the dean’s office, each department has its own IT support, and the dean’s office group manages an internal collaborative of these support groups. Similarly, each department has its own help desk. “With an organizational budget of \$500,000 per year and six full-time staff, I can’t possibly have that depth and breadth of expertise that ITS represents,” states Morris. “When my predecessor learned about the campus-wide Remedy system, he approached the ITS department because by riding on ITS’s coattails, our area wouldn’t have to build a similar application ourselves.”

Now the school’s IT organizations collectively allow all first-line calls to go to the ITS Response Center, which answers the general questions and refers the more specific ones to the appropriate unit in Public Health. In the past, inquiries outside of business hours had to wait, but the ITS Response Center is staffed 24 x 7. Online inquires are generally routed directly to the Public Health units.

The College of Arts and Sciences Information Services unit (OASIS) historically routed call support among its six full-time staff via its own phone number and Web submission forms. Due to a combination of budget pressures and a desire to improve

the workload of its internal staff, they too contracted with the ITS Response Center for front-line call center services. "I inherited our local help desk organization when I started this job two years ago," states OASIS's Tillet. "In our group, we would keep one person, on a rotating shift, to answer the phones. Everyone hated that role, because it took him or her from their work. When I had the morning shift to answer phones, I would see my work pile up for the afternoon. I questioned why I was trying to run a call center when I have a staff of six or seven and maybe 2,000 machines. Why am I trying to duplicate the ITS help desk? So I dismantled our help desk organization. Today, there is not a publicly known way to contact my group via a department help desk anymore."

Currently, the OASIS staff members receive Remedy tickets on their Blackberry PDAs, increasing the group's responsiveness to local IT problems. "Remedy's look-up table enables the ITS help desk analyst to route the job ticket to the appropriate OASIS staff member," states Tillet. "The staff member receives the e-mail while he services calls on site throughout his department. The problem is already triaged, so he already has all the critical information and he can attend to the problem, which might be located a few doors away. Response time goes down from four to five hours to a best-case scenario of five minutes. People wonder all the time how the staff person answered the call so quickly. Well, he was down the hall when he received the ticket. Faculty members love that!" Tillet also recalls numerous times when he has entered a ticket at the beginning of a discussion and, when the conversation wraps up 10 minutes later, the ticket is already closed.

Before ITS takes on a school's IT support operation, the two areas work out various SLAs that address issues like escalation and the hand-off point where the school takes ownership of the ticket. For example, a school may dictate a 15-minute response to

a critical ticket 24 x 7, whereas other schools on campus are strictly 8:00 a.m. to 5:00 p.m., Monday through Friday. This impacts the turn-around time. Egan admits refining SLAs is an ongoing process. The school must obviously adopt the Remedy platform, too, as part of the arrangement.

While the coverage is better, people admit that there are issues. People with problems often want to deal with a specific person—the one who helped them the last time there was a problem, or the one who is local and knows the specifics of an individual's workstation or work habits. Morris elaborates: "I have a good staff, and the departments want 'my person' to help them, not this 'Russian roulette' of unknown people."

Tillet, too, concedes that "the initial period was a little bit painful, but three months later, it stopped being an issue. Many of the people who complained began to use the Web submit form because it went straight to the Arts and Sciences Web site. Over time, users have now evolved to using the Response Center call center for general questions and submitting more specific ones over the Web." OASIS is also rotating its central staff through the departments so that they will be known across the college. Tillet offers a snapshot of his current operation using the Response Center. In August 2007, OASIS solved 450 tickets; 132 tickets originated in other groups, 125 of them at the ITS help desk. Three hundred tickets were initiated via Web submission.

Egan believes that "initially the schools bought in because they saw the value; but ultimately we made it easy for them to buy in. The process is designed in such a way that the schools take credit for solving all their departments' IT problems." Christina Artis, postmaster, also points to "the trust the Response Center has built up. The schools know that we will resolve the problem or at least start the initial troubleshooting when their faculty or staff members contact us. We have built up a track record, and we can use

[schools we support like OASIS] as references when other departments or schools express interest with integrating our help desk into their IT support operations.” For example, the ITS help desk now handles the Kenan-Flagler Business School’s calls after-hours.

As a final aspect of service delegation, while the Response Center has typically taken over some call-in support for participating schools, an On-Site Support group also serves groups that can’t justify creating a local support unit but need more support than ITS could provide as a general service entity. For small-need departments, On-Site Support will provide on-demand service for \$45 per hour. It has regularized arrangements with offices such as the chancellor’s and the provost’s. For units that don’t want to manage an IT organization, On-Site Support will provide a staff person located at the customer site but part of the On-Site Support team. These staff are funded by the local unit. Examples of units contracting for this service are the finance office, athletics department, and the administration building. Additionally, the On-Site Support group has a team of UNIX experts who will do contractual services for individual researchers. Finally, one of the customers for On-Site Support is ITS itself: On-Site Support administers all of the ITS desktops.

Next Step: A New Help Desk Philosophy

As noted earlier, subsequent to CCI, with a new university-wide role and additional resources, the ITS Response Center staff has set about to develop a new operational philosophy. They perceive themselves to be the public face of central campus IT. They offer various ways to access their services and are continually asking how to improve service and fix problems upstream. Having the campus telephone operators in their group, they inherently field calls on a wide range of issues and can make informed references up front. They estimate that the technical phone staff as

well as the campus operators can answer 80 percent of the questions that come in without even having to do a referral at all.

The vision is to move from a responsive help desk to a proactive service center. In this regard, they do not have a tiered escalation process such as is commonly instantiated in traditional help desk management applications. Their locally developed Remedy applications instantiate a more collaborative approach, with a goal of solving most problems at the first point of contact. “We don’t have the traditional tier system because we started to become the customer advocate,” states Ingrid Camacho, manager of Phone Services. “It is a cooperative model. If a more junior analyst picks up the phone and requires help, he or she consults with a more senior analyst. A single source answers the client, and we try to avoid calling them back. A two-tier approach was limited because we had to research problems and then call the client back.” For new employees, this model is part of staff training in that the first point of contact owns the trouble ticket until the problem is resolved.

Deputy CIO Robyn East believes the next step in enhancing UNC-CH’s IT support is the implementation of an IT service management (ITSM) strategy. “I would rate the ITS Response Center quite highly in terms of maturity,” she believes. “They have reached a point where they can be only as successful as the rest of the organization that is backing them up. The ITS Response Center does an excellent job with the tools and structure to handle tickets, but once those tickets are handed off to particular IT areas, we don’t do as good a job as we could with managing the rest of the process. The rest of the organization needs to be capable of achieving the same level of responsiveness as the help desk itself. We have areas that are not quite there yet, and my focus is to make that happen.”

Matt Howell, manager of Walk-In Services, concurs. “We need accurate information as to when the local IT organization will get back to

the customer. We'll tell a customer that we're sending the information on to his department and someone from that group will contact him in one business day. The worst thing for us is when three days later the customer contacts us to inquire about his ticket's status. If we can take ownership from start to end of the ticket, we can follow its progress. Right now, we don't have that set up, and it would provide greater benefit to the customer."

East hopes to implement an ITSM strategy in conjunction with the UNC-CH's enterprise resource planning (ERP) project. Currently it is in the design phase, but as she notes, "As this is implemented, the organization will change significantly. I am not sure if my focus on ITSM is as much on the service desk as on introducing good enterprise change management into the organization."

East envisions an operational organization that is ready to receive the ERP modules as they are put into production and to handle them correctly from the start. "Part of the vision is for ITSM to build maturity on the operational side," she continues. "The ERP project group is clearly in a much better place in regards to methodology and structure. We want our legacy side of the organization to be ready to tackle the same things. Our ERP partner is consulting with the legacy system administrators to instill some of the same structure found in the ERP organization so both areas are talking the same language. Getting our service to the same level and creating the appropriate SLAs are all components of a service management program that all equate to maturity as an organization."

East is moving ahead on the ITSM implementation. She has allocated funds toward hiring a consultant to assist with the ITSM implementation and is creating some positions, including a director-level position, relating to the project. An informal ITSM working group meets regularly, ITS managers have received ITSM training, and East has conducted a project overview for the chancellor.

Funding the ITS User Support and Engagement Group

As an evolving and forward-looking group, the ITS User Support and Engagement group must have funding mechanisms that will support their vision. They do get some funding as a portion of the central ITS budget. This is for the services that are enterprise level and potentially used by all members of the UNC-CH community. An example of a unit that is mainly funded in this way is the Phone Services group, which is part of the User Support and Engagement group.

Since CCI support is largely used by students, funding for this support comes mainly from student fees. This includes the walk-in and electronic access services. Consequently, the User Response and Engagement group keeps the student government closely involved with its activities. "We describe the services provided and have the student government vote to support it," states Alden. "That way, the central IT help desk is not enforcing services; the student government had some hand in the decision. The group requests funds formally from the student government annually for specific projects, pending their approval. The student government may even vote to raise the technology fee to cover our projects." Students were consulted before the ITS Response Center eliminated its 12:00 p.m. to 7:00 a.m. shift at its new satellite help desk due to lack of demand. The students were actively involved, too, in designing the new satellite help desk on campus—from the initial planning to the furniture selection.

As noted above, Remedy is a key component of the campus support strategy. Since it is an enterprise service, Remedy development and maintenance is undertaken by ITS staff, who are paid from the ITS budget, and there is no chargeback to units that benefit. On the other hand, for departments that want to have their own local Remedy licenses, ITS

will manage the licensing for them without charge but will charge back the cost of the license and of maintenance.

The Computer Repair Center is a receipts-funded activity, though since they are an accredited warranty repair facility, those receipts may well come from the failed device's manufacturer.

Finally, funding of the distributed services via a chargeback mechanism is being considered, the argument being that if a local unit covers phone response with two FTEs, ITS User Support and Engagement can do the same on a team basis with one FTE. The local unit would save at least an FTE while getting improved coverage at the same time. This model would allow ITS User Support and Engagement to grow its staff without having to compete for scarce state funding, while improving overall institutional IT support services.

Lessons Learned

While UNC-CH Response Center staff members recognize that as the result of their critical role in the CCI they have been blessed with unusual resources and given a unique opportunity to create a new mission, they feel there are lessons that will translate well to other institutions. East said that "these initiatives take a lot of up-front work, and there is resistance to change. Still, it is worth the effort, since there are savings and improvements in the long run. Most units are in reactive mode, taken up with day-to-day concerns. One must take the initiative to get above this."

Communicate with All Stakeholders

The User Support and Engagement group continually communicates with the user community, other ITS units, and other campus support and help desk units. This communication not only assists them in understanding the issues necessary to run an effective help

desk but also establishes relationships that can engender trust.

That staff members are Myers-Briggs E types certainly helps. They are continually talking with these stakeholder groups about current problems, issues, and directions. "The managers in our group really communicate with each other; we can finish each other's sentences," states Camacho. "We have so many meetings that sometimes we have meeting overload, but they are so necessary for our day-to-day operations. When we are not meeting, we are talking over the phone and sending e-mails to keep each other informed."

As noted earlier, since much of the funding for student support comes from student fees, ITS User Support and Engagement goes before the student government to describe what it is doing for students and what it costs to provide services, and engages the student community in priority setting. This way it is not some administrative group making decisions by itself but rather decisions are being made jointly. The student government can raise the student technology fee if necessary. With state support for public institutions under continuing pressure, this direct source of funding is increasingly valuable. It does, however, require that the IT leadership understand and develop the discipline of accountability inherent in this model.

Train and Cross-Train

Since the group managers recommend putting more weight in the hiring process on attitude and service orientation, and because of the continual change inherent in IT services, they recommend investing heavily in training. Their response strategy is predicated on most problems being resolved at the initial point of contact, so their service team needs to consist of well-informed generalists rather than collections of specialists. This involves a substantial amount of cross-training in various ITS areas. "Institutional knowledge is gold,"

states Camacho. “Retaining it is a challenge, especially in my area [telephone help desk analysts], where people burn out quickly. Cross-training is one way; knowledge training on the job is another.”

Rethink Vision for Services

Help desk services are often perceived as a necessary evil in IT organizations. They tend to be swamped with repetitive questions (“What do I do if I can’t remember my password?”) and are often staffed by students. An alternative vision, as articulated by the Response Center, is to make the help desk the public face of the IT organization. To act on this has many implications. It implies that the help desk should be proactive rather than reactive. At UNC-CH this means helping the ITS technical groups understand problems early and helping them fix problems upstream. Similarly it means that the Response Center should reach out to the campus technical and computer user community to find new services that may be needed. It also means Response Center staff members understand they are accountable to various stakeholders, act in a responsive way, and measure and document this responsiveness.

Users approach a help desk with a problem differently, depending on individual personality, age, and gender. A responsive help desk understands the ways its community wants to access service and offers vehicles for doing so. Historically, it was telephone and walk-in support. More recently people have become comfortable submitting issues via e-mail or over the Web. Recently, the Response Center has found that many people want to resolve problems via instant/text messaging, so it has piloted an instant messaging access service.

Use Resources Efficiently

A big leveraging factor at UNC-CH is having a common platform for most students and faculty. This has allowed better service

with fewer resources. One secondary effect is that having a fairly standardized environment allows the Response Center to develop automated systems that enable users to resolve issues by themselves. Tools that allow resetting of passwords are front and center in this regard. Alden sees further development of self-service tools, knowledge databases, application-specific help systems, and client-level diagnostic systems as reducing the load on the help desk, although these are long-term directions rather than short-term development activities.

The User Support and Engagement group tackles resource efficiency in several ways. As Egan explains, “We know that we are blessed with resources that most people don’t have, but a lot of what we do is being creative: How can we leverage what is out there? How can we leverage the student fees? What refinements can we implement to eliminate repetitive IT problems? We examine our workflow. If we are spending 50 percent of our time resetting passwords, we try to automate it to get that problem out of the way.” As Brett Vasu, manager of Electronic Services notes, “Whenever a crisis occurs or a new service comes up, we put out the fire and then we try to figure out in the long run how to do it better.”

In a similar vein, the ITS Response Center staff try not to just answer a user’s question but also to take the opportunity to educate the user regarding how things work and why there was a problem. These interactions are viewed as teachable moments. This may take more time, but it saves resources in the long run. “If the person is having a problem with MS Office, we don’t just tell them to press this button,” states Chris Williams, manager of ResNET. “We walk the person through the process. Every problem is a training opportunity, and we should teach them to solve this problem in the future. [If resolving the problem requires the client to reboot his computer], we try to use this time as a

teaching opportunity, not three minutes of dead silence.”

The planned move to a production instant/text messaging service, while responsive to changes in user behavior, actually is an efficiency move within the Response Center. On a phone transaction, a support person can only serve one person at a time. Using instant messaging, a support person can respond to as many as three users simultaneously.

Coordinate Support Efforts to Offer Significant Benefits

This case study started with the ITS Response Center’s efforts to provide a leveraged front end for distributed help desks around the institution. That this model offers possibilities for efficiencies and extended service hours is clear to everyone. The countervailing factors are those of responsiveness and local knowledge in the historic localized system. As with most centralize/decentralize discussions, success depends on trust and focusing on the most appropriate delegation of services between the central group and the local groups.

The ITS Response Center has worked on both of these fronts. We have documented their efforts to build trust in local units. This is a nontrivial matter, as a great sense of self-worth is involved in running an IT organization, local or enterprise. No one wants to depend on factors out of their control, and certainly in turning over services to a central organization one can feel loss of control. The ITS Response Center addresses this by creating individualized SLAs with each local organization and constantly reevaluating them. As a complement to sharing services with large units, the ITS On-Site Support group meets the technology support needs of smaller units by leveraging the capabilities of a large central organization while keeping the responsiveness and collegiality of local support.

Conclusion

Customer support takes many forms in higher education institutions and is a particularly complex issue at large, decentralized institutions such as UNC-CH. Much anecdotal evidence suggests that many ways exist to do it ineffectively. The ITS User Support and Engagement group has made a concerted effort to be a facilitating agent for coherent IT support at UNC-CH. They do this out of a sense of professionalism, but also in the interest of making the use of technology easier for the UNC-CH community and, perhaps most important in these times of financial pressure, to use resources more efficiently. As Bruce Egan observes, “We can’t control if an IT organization chooses to operate their own help desk, but we can certainly try to coordinate with them.”

Endnotes

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