Structuring the IT Organization for Cloud Services

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Overview

If there is symmetry between the information technology (IT) infrastructure and the customer support offered at our colleges and universities, the symmetry is largely a function of our IT departments’ having learned how to support the infrastructure we deliver to our students, faculty, and administrators. Only a few decades ago integration between infrastructure and support was rare, indeed. In the 1980s our campuses discovered that it was easier to deliver technologies than it was to support the constituents who were using them. Despite the fact that the technologies were designed to improve the work environment for these constituents, faculty members, researchers, administrators, and students needed help learning to use them. And then they needed documentation about the technologies. And then they needed ways to obtain and refresh their passwords. And then they needed help connecting to the campus networks.

As the technologies proliferated on campus, IT organizations began to offer help desk services and training and documentation programs. For the next several decades, these user support programs and services grew in synch with the increased infrastructure services our campuses offered. When campuses adopted enterprise resource planning (ERP) systems and course management systems, our help desks and user support programs geared up to support them. When high-speed networks were built to support specialized academic applications, our IT departments delivered tailored support to academic units. Through it all, the support functions appeared seamless to the end users, since they were designed to support the specific technologies available at the institution.

If there is one thing higher education IT organizations have learned over the decades it is that user perceptions about how well they are supported by IT are both varied and changeable. Unveil a revolutionary new library system on campus without adequate training and documentation services, and the system itself might be perceived as inadequate. Introduce a highly functional system to support students in their academic work but fail to enable bells and whistles that students are accustomed to, and IT will be front-page news in the student newspaper. Gone are the days that IT systems could surprise and delight higher education constituents with functionality they couldn’t imagine. These days, IT systems on our campuses are effectively competing with commercially available systems for the attention and mindshare of our users.

What does all of this mean to our IT organizations?

To varying degrees, campuses are exploring or have already begun to integrate alternative IT sourcing models into their IT service delivery strategies. According to Philip J. Goldstein, adoption of services via alternative sourcing models has been broad but relatively shallow, but current adopters believe that adoption will increase.1 Above-campus services refers to services delivered through an aggregation of sources beyond a single campus. Current use of the term above-campus services refers to a broader scope than the term cloud computing. Above-campus services includes concepts that frame objectives and strategies of importance to higher education institutions—concepts such as resource sharing and multi-institutional activities, as well as aggregation of resources among institutions. In addition, certain alternative sourcing models for above-
campus services are particularly suited to higher education, such as institutional sourcing and consortium sourcing.²

The growing spectrum of options for high-quality above-campus services, the desire to deliver better end-to-end support for technology services, and the need to address funding demands will inevitably influence how higher education positions and structures IT organizations and services in the future. Funding pressures will lead to greater use of quality above-campus services rather than locally provided services. Despite the fact that these systems are likely to be “owned and operated” outside of our institutions, colleges and universities will have to develop models for providing seamless support to end users as we simultaneously move away from maintaining locally provided IT services. As part of the move toward a more client-centric and less infrastructure-centric focus, IT leaders must begin planning now in order to develop new strategies, define new roles, and unify communications internal and external to the IT organization.

Providing support for above-campus services requires a shift in institutional thinking toward a model that is based on end-to-end, seamless support involving multiple parties both on- and off-campus. Inclusion of above-campus services into a campus’s service portfolio will likely result in services that are not locally managed, or services that are managed as a member of a consortium. There will be variable dependencies on non-local support for the service that require a local bridge or liaison support function between clients and the service providers. The need to partner and collaborate with other institutions and vendors will become increasingly important, as will the need to break down campus silos between different support areas.

This bulletin is based on recent ECAR research on the continuing evolution of the IT help desk and the ramifications of above-campus services and cloud computing for higher education institutions. It describes the plans some higher education institutions have for addressing support challenges in the future, as well as the planning being done at the University of Wisconsin–Milwaukee that includes working with an Information Technology Infrastructure Library (ITIL)³ framework for IT service management (ITSM).

**Highlights of IT Support Services**

As campuses move away from locally provided services, some roles traditionally involved with local infrastructure-centric services will likely diminish. It is likely that fewer campuses will maintain support for large data centers, due to cost and energy-usage concerns. In addition, there is likely to be a reduction in the need for staff to manage servers, databases, and some applications.

Instead, campuses will need to develop staff roles that focus on different skill sets in order to meet their enterprise responsibilities. As noted by Wheeler and Waggener, staff development is important to above-campus service adoption.⁴ Campuses will need staff with excellent communication and political skills. There will be a greater need for skills currently found in business analyst and project management groups,⁵ such as process analysis, group facilitation, negotiation, data analysis, and data management. Additionally, skills in risk management and legal affairs will become increasingly important.⁶ Campus IT
staff will likely continue to require skills in IT architecture and strategy, particularly in the area of identity and access management, in order to provide seamless and secure access to above-campus services. Among the more important functions and roles that will be needed in the future is higher-level, more direct support for clients.

The campus community expects high-quality support, regardless of source. Ideally, campus clients should not need to be aware of the source of the support for the services they consume. Campus IT support providers will have to develop strategies for providing a seamless support experience to campus clients, regardless of the number of different support providers involved. End-to-end support for services will not be solely the responsibility of IT groups, as services provided to clients include those supported by instructional technologists, librarians, and business unit personnel, among others. Support workflow between local support resources and various external cloud support resources will also have to be developed to provide a seamless support experience.

ITSM practices are becoming increasingly important to higher education and are a component of providing high-quality customer support. ITSM is a set of practices that help improve the stability, reliability, and manageability of IT services and aid in improving IT service delivery. One of the more popular frameworks used for ITSM is ITIL, which began as a set of books published in the 1980s by the United Kingdom’s Central Computer and Telecommunications Agency that covered different IT service management practices. Version 3 of the ITIL publications was released by the United Kingdom Office of Government Commerce in 2007.

In Service on the Front Line: The IT Help Desk in Higher Education, by Mark C. Sheehan, the role of the IT help desk was explored from many different aspects. This 2007 ECAR research study investigated several common ITSM practices (see Table 1 for definitions) in the context of the IT help desk. Of the ITSM practices investigated, the study showed that the majority of respondents had adopted formal guidelines for four: capacity planning, availability planning, change management, and release management.

<table>
<thead>
<tr>
<th>ITSM Practice</th>
<th>Definition</th>
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<td>Capacity planning</td>
<td>To ensure that systems and services are sufficiently robust to support the organization’s commitments to users</td>
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<tr>
<td>Availability planning</td>
<td>To ensure that systems and services are available when, where, and to whom the organization says they will be</td>
</tr>
<tr>
<td>Change management</td>
<td>To ensure that changes to systems and services are orderly, support the organization’s commitment, and so forth</td>
</tr>
<tr>
<td>Release management</td>
<td>To ensure that new systems and services are well tested, that version control is maintained, and so forth</td>
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The study showed a positive correlation between service quality and the four ITSM practices for which institutions had adopted formal guidelines. However, Haight and Govekar note that modifications to existing ITSM practices are likely to be required to adapt to externally sourced services and that there is a need to formulate strategies for how cloud environments will be integrated into ITSM implementations.10

A number of case studies complementing Sheehan’s ECAR research study describe the different approaches being used at each institution toward the continuing evolution of their respective IT help desks. In each case, institutions actively redefined the duties of IT help desk personnel, and these new definitions led to professional growth for the staff. Additionally, the institutions changed their help desk support models in response to changing campus environments.

At the University of North Carolina at Chapel Hill (UNC-CH), efforts were targeted at creating an integrated, cooperative “cloud” of IT support for the entire university that involves coordination of centralized and decentralized IT staff.11 The support model includes a response center/help desk that is intended to provide the first point of contact for any IT problem, with a goal of moving to a model in which the response center handles a service request ticket from start to finish. This support model allows tracking of a request in an end-to-end, seamless fashion for clients, regardless of the affiliation or location of the supporting entities. The new support model also allows the university’s help desk personnel to concentrate on higher-level problem solving, providing greater job satisfaction.

Both Colgate University and Bowdoin College have pursued strategies similar to that at UNC-CH of transforming the roles of their personnel.12 Bowdoin’s goal was to change the help desk from a reactive role to a more proactive one in which staff members act as IT consultants. In order to enable the role changes, Bowdoin provided not only technical training but, more importantly, training to improve communications and enhance staff members’ understanding of the client perspective. Additionally, Bowdoin has embarked on an initiative to provide training across the entire IT organization to move it toward a more client-centric culture.

Colgate University outsourced its first-tier help desk support service so that on-campus IT help desk staff could work more closely with clients and concentrate on providing more value-added services. As was the case with Bowdoin College, Colgate provided training to its staff in both technical and soft skills in order to move the support structure and organization toward a greater client-centric focus.

An ECAR research bulletin from the University of Massachusetts Boston and Dickinson College13 offers recommendations for steps that can be taken to raise organizations to a higher level as service providers. The bulletin reinforces the approaches taken by UNC-CH, Colgate, and Bowdoin to enable a more “high-touch” focus, and it emphasizes appropriate communications and service training for staff. Additionally, the authors suggest that improvements in service and support are enriched by the adoption of standards and practices, such as ITIL.
Evolution of Support at the University of Wisconsin–Milwaukee

The University of Wisconsin–Milwaukee (UW–Milwaukee) is a public research university located in the largest metropolitan area of Wisconsin. It is one of the two doctoral granting public research universities in the state. Information technology support for its 1,600 faculty and instructional staff and 30,000 students is provided by University Information Technology Services (UITS). Efforts at UW–Milwaukee to prepare for better end-to-end support began with plans that revolved around communication. This was communication that would take the form of developing strategies for cross-functional teams and for coordinating communications among internal IT service providers. As communication strategies and planning emerged, it became more evident that the learning technologies, libraries, and business units also had a role in the communication as it applied to the business services that were either sponsored by or provided in those areas.

A collaborative communication plan started with strengthening the communication pathways in the end user support and infrastructure support areas. Between the help desk and data center, it started as simply as defining the escalation schemes that each area was practicing for incident reporting. After those practices were documented and reviewed with staff members in each area, work began to implement an escalation scheme that worked for both areas. It would be with this new understanding that an integrated workflow was accomplished. Each area had defined roles and expectations of how they participated in the incident-reporting escalation process. From these newly established workflows, conversations were able to move forward for the IT services where the responsibility was owned by learning technologies, libraries, and business units. These IT services are vital to the campus, and they include some above-campus services for systems such as a learning management system and a survey instrument. Defining levels of support was necessary in order to manage campus customer expectations and create better partnerships between the “owners” of a process and the IT support staff. The outcomes ensured that information was coordinated both internally within UITS and externally to the campus community.

While the communication needs were being addressed, changes were being made to infrastructure support to address the funding demands that were challenging the organization. Reviews of the existing infrastructure were being conducted for efficiencies to be gained. Among resources that were under scrutiny were campus expectations for services offered, the levels of support provided, staff resources, and determining which of these required attention. Preliminary to a division-wide service portfolio being created, a master list of IT infrastructure projects that supported existing services and applications for the campus was amassed. This list would help better define where prioritization was taking place so that resources could be properly allocated.

IT Service Management Steering Committee

An ITSM steering committee was formed for UITS as an initiative to improve IT service delivery to its customers using ITIL as the framework. The committee was charged with identifying and facilitating staff training/mentoring, recommending appropriate
communications, and identifying best practices and time frames for adoption. Three initial areas of effort were outlined: 1) develop a service catalog, 2) adopt service design practices, and 3) begin to build processes to support incident management and change management. Of the initial areas identified, developing a service catalog has seen the most progress. This endeavor is tied to the expected outcomes because it provides a foundation for information in regard to design practices and incident and change management.

The service catalog began as an exercise to provide a mechanism for communicating to the customers the IT services that UITS offered. As discussions progressed about which data elements would be included in the catalog, it became apparent that what was needed was actually a service portfolio. The service portfolio documents a complete set of services and, in combination with the infrastructure review, delineates where internal IT support efforts are allocated. A subset of the service portfolio is the service catalog, which serves as the outward facing information for the customer. The service catalog includes information such as the service availability, levels of support, standard costs, and audience of the service. The intended result of the service portfolio is to identify the customers’ needs, and, as a result, the continual review and improvement of all aspects of services becomes integrated in all outcomes.

**What It Means to Higher Education**

A shift from locally provided IT services toward an above-campus model that includes consortial and commercial service offerings requires a proactive shift in campus and organizational strategy to prepare for the change. We get a taste of the complexity of making this shift simply by trying to coordinate IT service and support functions across campus. Higher education must begin to plan now for ways to support the transition from an infrastructure-centric focus for IT toward a client-centric one that adds value for the campus community and prepares IT staff for the future. Strategies for improving communication inside and outside the organization, providing professional development opportunities for staff to prepare for changes in roles, and implementing IT service management standards and processes will be of benefit in the future as well as today for providing a better support experience to clients.

Higher education institutions need to position themselves to provide end-to-end, seamless support to clients independent of the sources from which services are provided. The integrated, cooperative “cloud” support model developed at UNC-CH could be extended to include learning technologies, library, and business unit groups, as well as support resources associated with externally sourced services.

As the adoption of above-campus services increases, institutions will need to identify the means to track service trends. The shift to externally sourced services does not eliminate the need to provide local support for clients. Organizations must be aware of how providing support for externally sourced services can affect support for locally sourced service offerings and be prepared to develop models for integration into a seamless support model. Institutions should additionally be aware of how funding is
allocated and distributed for the different services and maintain an awareness of the rapidly changing landscape of service offerings and sourcing models.

Initial efforts in planning must include time to develop new strategies for support efforts including both on-campus and above-campus services. Communication for these planning efforts should be at the forefront of any planning and should be used to address customers both internal and external to the organization. An examination of communication pathways in the organization will be important to map and align where multiple points of information are disseminated. Also, consider the use of bridge positions for transforming the model of support in IT service where a current infrastructure role may be transitioned into a more holistic end-user support role. An acceptance that new roles will be necessary, along with providing appropriate training the help staff transition to new roles, will be equally important.

**Key Questions to Ask**

- What staff training will we need in order to attain the knowledge and skills for positioning our campus toward a more user-centric focus?
- How can we break past the silos that can prevent our campus from providing seamless, end-to-end support to end users?
- Which structures and roles do we have in place that would provide coordinated services? Which structures and roles have yet to be created?
- How can we as leaders prepare organizations for the changes needed to provide coordinated services?
- How can we improve communication among the entities and individuals that are key to providing support?
- In what ways can we assess the level of engagement in the organization to ascertain readiness to accept the changes that will be taking place?

**Where to Learn More**

Endnotes


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