ITIL at New York University: A Framework for Excellence

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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.

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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 are related 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 for central IT service management practices (and the help desk’s inclusion in them), and the organizational maturity of the help desk as delineated by the Software Engineering Institute’s Capability Maturity Model.\(^2\)

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 1,649 EDUCAUSE member institutions. We received 454 responses to the survey (a 27.5% 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 New York University (NYU) to demonstrate how the framework of IT service management practices and functions known as the IT Infrastructure Library (ITIL) can strengthen service management practices in a complex higher education institution. (See the sidebar, “About the IT Infrastructure Library.”)

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**About the IT Infrastructure Library**

The Information Technology Infrastructure Library (ITIL) is a framework of processes, based on industry best practices, designed to assist in the development and delivery of high-quality IT services. ITIL does not replace institutional procedures, but provides the opportunity for training within the organization that will help improve the quality of practices and align them with the institution’s business procedures.

In the late 1980s, the United Kingdom’s Office of Government Commerce developed ITIL as a response to the sea change in IT that resulted from the personal computer explosion. ITIL has since become recognized as the de facto world standard for IT service management. ITIL is often implemented as a means of achieving such quality standards as ISO 9000 and ISO/IEC 20000.

ITIL has undergone two major revisions. Version 2 was released in 2000 and was followed by version 3 in 2007. Because New York University’s adoption of ITIL began before version 3 was released, the discussion in this case study focuses on version 2.

The two primary books in the ITIL are titled Service Delivery and Service Support. Each discusses five of the component processes involved in service management.

**Service Delivery**

- **Service Level Management** establishes and maintains formal agreements between service provider and recipient about the services offered and target service levels.
- **Financial Management** for IT services provides stewardship of the financial resources of the IT organization through budgeting, accounting, and billing.
- **Capacity Management** ensures that the IT resources managed by the IT organization have sufficient capacity to meet the organization’s commitments.
- **Service Continuity Management** oversees the organization’s ability to provide essential services during a disruption and to recover from it quickly.
- **Availability Management** ensures that the IT organization can make resources available when, where, and to the extent they are needed to meet institutional goals.
For their contributions to this study, ECAR owes a debt of gratitude to Robyn Berland, Student Services Manager; Eduardo de Leon, Team Leader, Administrative Application Support; Vincent Doogan, Director, Student Technology Services; Elizabeth Duke, IT System Administrator and Remedy Developer; Kenneth Fauerbach, Executive Director, ITS Planning, Continuity and Compliance; Audrey Franklin, Senior Systems Analyst, Data Center Services; Carlos Garcia, Global Services Manager; Christian Grewell, Team Leader, Client Relations and Quality Assurance; Jill Hochberg, Project Leader, Publications and Communications; R. Ben Maddox, Director, Client Services; Neptali Martinez, Director, Human Resources; Gail McIntyre, Team Leader, Service Delivery; Marilyn McMillan, Associate Provost and Chief Information Technology Officer; Kelvin Shivers, Team Leader, Access Management and

Service Support

- **Incident Management** restores service operations as quickly as possible and as nearly as possible to the levels defined by the service level agreements in place.
- **Problem Management** investigates the causes of incidents that disrupt services and develops measures to prevent their recurrence.
- **Configuration Management** accounts for all of the institution’s IT assets and makes information about them and their configuration available to other service management processes.
- **Change Management** provides standard methods and procedures for handling incidents related to changes made in the IT environment, in order to minimize their adverse impact.
- **Release Management** ensures that the release of new or modified hardware or software into the IT environment is orderly and that any adverse impacts on service are minimized.

ITIL also specifies an overarching approach to service provision, which it describes as the service desk management function, saying it is "crucial to the whole concept of Service Management." The ITIL literature distinguishes the service desk function from that of the familiar help desk. A service desk provides a single point of contact between the IT organization and its clients for all service-related needs, instead of just resolving service incidents.

Another common feature of ITIL implementations is the adoption of a formal customer relationship management process, often through a service desk management software system.

ITIL implementation projects can be expensive, in terms of training costs, external consultant fees, diversion of staff energies, and disruption of existing processes. For these reasons, many IT organizations elect to implement ITIL incrementally and in partnership with other industry and individual best practices over a period of several years. The ITIL implementation at New York University is a good example of this approach.

**Endnotes**

Accounts; Marc Steinberg, Team Leader, Client Services Center; Heather Stewart, Director, Academic Technologies; and the participants in the ITS Services Coordinating Group.

Introduction

As demonstrated in *Bowdoin College and Colgate University: Using the Help Desk Strategically to Revitalize an IT Organization*, one of the companion case studies to this one, the central IT help desk plays a pivotal role in the central IT organization. It is the conduit through which central IT receives input about its clients’ needs and feedback about its effectiveness in meeting them. The help desk, or service desk as it is called in the ITIL literature, is the public face of IT; if the campus community is familiar with nothing else about the IT organization, it at least knows the service desk.

The ITIL service management framework highlights the role of the service desk in providing an active interface between the providers (the central IT organization, usually) and the consumers of IT services. The service desk occupies a metalevel in the ITIL framework; it is not one of the 10 basic processes described in ITIL’s *Service Delivery* and *Service Support* books, but it is an overarching service organization “function” that in its mature form uses and contributes to each of the processes.

At New York University, the official name of the service desk is the Information Technology Services (ITS) Client Services Center. Its role in coordinating services provided by the entire ITS organization has made it the focus of a deliberate, well-organized service improvement initiative based on the ITIL framework. Although the initiative is well established and has already borne much fruit, as we will discuss later, it is still broadening and deepening.

This case study examines the circumstances and events that motivated NYU’s adoption of ITIL, the process it followed, its successes to date, and the lessons it learned along the way.

Institutional Background

Founded in 1831, New York University is the largest private nonprofit university in the United States. It comprises 14 schools, colleges, and divisions, and occupies 5 major centers in Manhattan. The university has almost 40,000 full-time students, evenly divided between undergraduate and graduate programs, and another 12,500 enrolled in noncredit programs. NYU’s buildings encompass more than 5 million square feet of interior space and house more than 11,000 students, and its eight libraries hold more than 4.5 million volumes. NYU is also one of the largest employers in New York City, with about 16,000 employees.

NYU operates branch campus and research programs in the United States and abroad. Its global footprint is extensive, with programs in Accra (Ghana), Berlin, Buenos Aires, Florence, London, Madrid, Paris, Prague, and Shanghai. Most recently, NYU has announced its plan to launch NYU Abu Dhabi, a degree-granting, full-time university in the United Arab Emirates. NYU is sometimes referred to by NYU President John Sexton as “glocal,” because it combines both global and local characteristics. The same term is applied to IT services, reflecting IT’s alignment with this aspect of NYU’s mission. The university’s global technology services projects reach out to the remote sites. For example, NYU’s campus in London has “NYU Roam,” the same wireless network as at the university’s New York City locations. The network at the Florence, Italy, site is managed from the New York City campus. For a variety of site-specific reasons, local IT practices cannot always follow the standards of the central services and therefore may not be supported by ITS.

Reporting to Marilyn McMillan, NYU’s associate provost and chief information technology officer, NYU’s ITS organization comprises three major operating units:

**Communications and Computing Services** operates and manages NYU’s large-scale technology infrastructure,
providing voice and data network services and computing resources that support a wide range of essential computer-based university services.

- .edu Services provides technology services for faculty and students in support of research, scholarship, and instruction; manages Internet2 resources, computer labs, and residential IT services; and develops and manages web, e-mail, portal services, and strategic technology initiatives.

- Enterprise Computing and Support Services (ECOMS) provides IT help desk services for all faculty, students, and staff; develops and supports core university administrative systems; and provides IT services involving desktop support, identity management, training, publications, database applications, and application security.

McMillan, referred to by one staff member as a “leader who loves to sow ideas like seeds, giving multiple possibilities the chance to grow side by side in their own season,” came into NYU’s IT organization in 1998 and merged several existing technology support organizations, including telecommunications, into ITS.

The ITS Client Services Center, which has led NYU’s adoption of ITIL processes, is situated within the ECOMS organization. It is the first point of contact for all ITS services. Its principal partners in bringing ITIL to NYU have been the staff and managers of other client-facing units within ITS, and in a variety of ITS infrastructure support units.

The Client Services Center, NYU’s IT Service Desk, provides telephone and e-mail assistance from 8:00 a.m. to midnight on weekdays and from noon to midnight on Saturday and Sunday. Client Services also provides in-person services from 9:00 a.m. to 6:00 p.m., Monday through Friday.

The Client Services Center also includes Desktop Support Services, a subscription service that offers enhanced on-site and telephone support services to NYU departments. Subscribers contact ITS Desktop Support Services technicians through a dedicated telephone number and e-mail address. Client Services Director R. Ben Maddox manages a staff of full-time, temporary, and student personnel who responded to more than 70,000 service requests in 2007.

Several of NYU’s professional schools, including medicine, law, and business, have CIOs of their own. These executives, as well as administrators who have IT leadership roles in NYU’s other 14 schools, are members of NYU’s CIO Council. Staff sizes vary by school size and the scope of services provided. In recent years, ITS has increased its efforts to reach out to the schools’ IT organizations, including them not only in the CIO Council but also in meetings of the ITS managers group and in a yearlong leadership training program called the Information Technology Leaders Program. ITS also sponsors an active IT security group with broad representation from other NYU units.

### Service Improvement Using the ITIL Framework

Most higher education IT organizations find it necessary to keep the goal of service improvement always in sight. Constant, rapid change in the IT environment, coupled with the resource constraints common in higher education, ensure that no IT service organization can rest for long on the laurels of past accomplishments. The ECAR research study *Service on the Front Line: The IT Help Desk in Higher Education* shows that the overall quality of help desk services is closely related to the positive impact the help desk has on the reputation of the central IT organization. What it doesn’t show is that service quality is a moving target.

Where continuous IT service quality improvement is a recognized need, the institution can benefit from a formalized
framework such as ITIL. As we will see, NYU’s motivations for adopting ITIL processes arose from several service improvement imperatives and from the recognition by a series of ITS leadership team members that the ITIL service management framework offered a wealth of conceptual underpinnings on which the cultural evolution of IT support services at NYU could be based.

As pointed out in the sidebar titled “About the IT Infrastructure Library,” the ITIL service management framework is complex and far-reaching. Simultaneous adoption of all ITIL processes and functions would strain the financial and human resource assets of any college or university. Accordingly, a gradual, phased approach is the most practical; NYU’s ITIL implementation is a good example of that approach. The following sections detail the phases in which NYU has adopted—and continues to adopt—ITIL processes.

**Phase 1: Introducing ITIL into ITS Operations**

NYU’s initial foray into ITIL involved incident management, the process that ensures prompt resumption of services following a disruption. When Marilyn McMillan arrived at NYU in 1998, one of her first service improvement efforts resulted in a process to manage IT service incidents and to notify affected managers across ITS by e-mail. “Bringing incident management to ITS was a slow process at first,” McMillan says, “not so much because the service managers were resistant, but because we didn’t have the language in place to discuss it. ITIL training, first for the frontline staff, then for the more technical areas, is what gave us that common language.”

During her first months at NYU, McMillan reports, staff thought they would get into trouble for letting people know things were broken. They felt that downtime statistics could be embarrassing and should not be disseminated freely, and that as long as they could fix a problem quickly, no one would notice that it had occurred. The incident management approach of many ITS staff at that time was “Don’t spend time explaining it to clients or speculating for them about when it’s going to get better; just put your head down and fix it.” The ITIL incident management process, however, recommends a different approach, emphasizing client outreach alongside more technology-focused service restoration activities.

One of the things the ITS leadership team wrestled with from the outset was the large number of clients relative to the number of IT support staff. Therefore, an early problem they set out to solve was how to protect staff from being barraged with client service requests. This will be a familiar story to most CIOs; readers of Bowdoin College and Colgate University: Using the Help Desk Strategically to Revitalize an IT Organization will recognize it as one of the factors driving those two institutions toward their very different approaches to help desk service management. To NYU’s ITS organization, the ITIL literature suggested the consolidation of first-tier service responders into a single, unified service desk. The effect of this was to meet relatively simple service needs quickly, using generalist staff with good customer service skills, and to escalate more difficult issues to specialists in an orderly way so as to protect their time.

Adopting ITIL processes and language gave ITS the ability to look at service issues as process-oriented rather than person-oriented. Thanks to this perspective, the effective resolution of a service request no longer hinges on the availability of an overworked key individual, but on carrying out a well-tuned incident management process. Process modifications, as NYU learned with incident management and other ITIL processes, can change institutional expectations and individual behavior, and result in dramatic service improvements.

Between 1998 and 2001, detailed knowledge of ITIL was confined to a few key players in the ITS Client Services organization who
considered the ITIL framework as one of many tools for continuous improvement of their organization’s performance. In early 2001, ITS contracted with Innovative Management Solutions (IMS) to develop a set of organizational operating procedures. By late August, that work had led not only to the establishment of a set of formal procedures for key ITS functions but also to the expansion of Client Services’ help desk staff from fewer than a dozen full- and part-time personnel available only during regular business hours to a larger staff of full-time, temporary, and student support personnel available more than 100 hours per week.

The terrorist attacks of September 11, 2001 (9/11), presented severe and urgent challenges to the university, and immediately proved the value of the work NYU had just completed with IMS. “The unfortunate serendipity,” says Ken Fauerbach, director of ITS Client Services at the time, “was that documented operating procedures were in place, new staff had been hired, and service hours had been extended. We did not have to pull in so many people to handle the crisis.”

During 9/11, ITS, flooded with calls to the main university phone number, became a central hub for emergency communications at NYU by incorporating, in real time, the telephone system call center and the ITS help desk call center into a single unit to extend coverage and handle call volume. This involved an intensive effort by NYU telecommunications staff to reprogram the telephone switches. Today, thanks to new operating procedures and underlying IT systems, the Client Services Center can repeat that merger of functions during an emergency “at the touch of a button.”

Another outcome of 9/11 was the creation of the first generation of an NYU IT knowledge base, which provides a common body of information for the Support Center staff and is now available online to the campus as a whole. During 9/11, the NYU publications office released emergency-related information that was changing almost constantly. The knowledge management approach, combined with the integrated call center, allowed NYU to gather and post answers to frequently asked questions in multiple places and formats, from databases to dry erase boards, with the intent of disseminating up-to-the-minute information to support teams and NYU community members.

Phase 2: Moving from Good to Great

For ITS, 2002 and 2003 were a time of returning to a “new normal” after the 2001 terrorist attacks, leveraging the newly expanded help desk hours and staff, and fine-tuning the operational processes developed in 2001.

The pivotal year for ITS was 2004, when Client Services experienced a tight circle of events that spurred further ITIL activity:

- Despite the help desk’s expanded hours of operation, demand continued to increase, coinciding with a change in the “communication culture.” E-mail became more important, and Client Services and the help desk found their phone-based service model falling behind campus practice. Eventually, Maddox says, Client Services realized that in order to remain an effective ITS partner, the area “was going to have to shake up not just its own operations, but solicit the cooperation and willingness to change of other ITS units.” The struggle was to integrate overall organizational processes into the suite of new and enhanced services the Client Services group felt the campus required in order to use technology tools and resources optimally.
- Client Services’ organizational structure needed to be realigned with the changing needs of the community for staffing and service hours. In
staff surveys, the teams reported that they wanted to see fewer silos, more room for service tiers, and broader career paths. The idea of forming stronger management for different service teams emerged, and a new organizational structure was proposed and implemented.

- Dollars and cents gained particular importance. Desktop Support Services needed to improve the collection of its subscription service fees. Client Services was making core investments in Remedy help desk software and other service upgrades at this time and also in training developers. These initiatives were to be funded by the results of the increased effort to collect Desktop Support revenues.

As is common in higher education, where typically few formal assessment mechanisms are in place, all of these changes resulted in a sudden realization that the then-current service processes were not working optimally. At this time, ITS studied Jim Collins’s *Good to Great* principles and from them designed and conducted an exercise whose goal was to establish a framework for taking the excellent resources within ITS and applying them to rapidly evolving demands. The results of a staff survey associated with this exercise targeted areas of improvement for Client Services, and the organization’s growing knowledge of ITIL processes suggested “how-tos” toward their implementation. Thanks to the leadership and energy of Fauerbach and Jeffrey Lane, both previous directors of Client Services, the “seed” ideas of ITIL were planted and began to take root under Maddox’s leadership.

Among the ITIL-related improvements that grew out of this exercise was the refinement of the operating level agreements (OLAs) that Desktop Support Services had negotiated with its ITS service partners and of the service level agreements (SLAs) it had negotiated with its clients. These steps, informed by the ITIL framework’s service level management process, required that all involved ITS units quantify their services.

In addition, the ITS organization’s growing familiarity with ITIL processes began to influence the development of two ongoing ITS initiatives: ProjTrak, an in-house project management tool, and ServTrak, an in-house service tracking tool. These tools support the ITIL service desk management function through the processes of service level management, release management, and capacity management. (See the sidebar, “About the IT Infrastructure Library,” for definitions of these processes.)

**Phase 3: Nurturing a Fledgling Culture**

In support of ITIL’s growing role in ITS operations, NYU began to invest in ITIL training off and on campus. Pink Elephant, a Canadian provider of ITIL training services, conducted a lunch-box training series with the ITS directors team. In March 2005, Client Services director Maddox attended off-site Pink Elephant ITIL Essentials training. The first wave of on-site ITIL Essentials training sessions for ITS staff began in January 2006. Since then, 60 to 70 staff members have had some kind of training. “The tipping point of ITIL language acquisition came when groups of 15 or 16 people spent three days in the same room discussing it,” states Maddox.

A comprehensive service management framework such as ITIL requires buy-in at all levels of an IT organization and the institution. ITS administrators describe NYU’s buy-in process as easy at some levels and not so easy at others.

Luckily, NYU is an innovative environment, where, as Maddox describes it, “The leadership is willing to invest in new ideas and give them room to grow.” The ITS leadership is confident enough in the intelligence and energy of its
staff to initiate projects that sometimes involve an element of risk, in hopes of a positive result. Because of this characteristic, higher-level buy-in for ITIL came naturally.

Within ITS, however, buy-in remains uneven. For staff in direct client service roles, many elements of ITIL practically sell themselves. As an example, Audrey Franklin, senior systems analyst, is a devotee of change management. Because it facilitates communication among the individuals who create change in online systems and the staff who support those systems, Franklin observes, “Change management has clear, immediate benefits for all IT service providers and helps sell the ITIL concepts.”

For staff in other areas, particularly the more technical specialties within ITS, acceptance can take longer. Maddox sees the virtue of patience in addressing this potential obstacle. The spirit of the Client Services ITIL implementation, he says, is “If you build it, and it works to the broader benefit, others will come.” Application developers, he reflects, may have discounted the ITIL framework initially, feeling it could stifle their independence and innovation. But over time individuals in those roles at ITS have bought into ITIL because they have seen how service improvements reduce their need to become involved with frontline issues and thereby enable them to focus more on their own development tasks.

Over time, ITIL has helped some change-averse individuals within ITS to see that they can play an important role in the change process. “The ITIL framework became a ‘co-conspirator’ for improvement,” states Maddox. “The framework helps guide us to measurable successes, so for the staff member it’s not so much a case of ‘your supervisor pushing you to change.’ We get buy-in because people enjoy being successful.”

After the first round of Pink Elephant’s ITIL Essentials training, ITIL’s penetration into ITS became apparent when one of the service teams conducted a SWOT analysis. In this exercise, Maddox asked the staff, “Given that resources are fixed or might decline, what is our biggest vulnerability? What’s our biggest possibility or opportunity?” The response of the staff was “We’re problem solvers. Allow us to innovate.”

The staff’s shared commitment to applying their talents to new ways of serving their clients, complemented by the new vocabulary for talking about service that the ITIL training gave them, enabled ITS to take significant steps forward in service quality. Staff abandoned their old expectation that problems are to be solved by throwing financial or human resources at them and found themselves no longer heads-down, but working together to apply their problem-solving skills to service improvement.

Referring to this stage of the service improvement process, Maddox points out that ITIL gave IT staff the language to say, “My service is degrading because of volume, in the absence of innovation.” Assuming constant or increasing demand, Maddox believes, “Innovation is the only way to prevent service degradation. We found that the ITIL framework helped us identify the optimal next steps to take at this and later stages of the service improvement process.” Following are some of NYU’s next steps:

- When Client Services implemented its incident management processes, the need for a problem management process soon became apparent. One objective of ITIL’s problem management process involves the service desk’s sharing incident information with its service partners in the central IT organization so that they can implement fixes to failing systems and prevent further incidents.
- In another example, ITIL awareness prompted ITS to document operational procedures. This enhances service continuity management by outlining who can accomplish critical tasks, such
as posting system status and change messages on the IT support portal in the event of a system outage.

- At a more proactive level, ITIL developed a change management process that involves collaboration between central IT system managers and the help desk staff to head off the negative impacts of system changes before they become service incidents.

- Clients’ need for a more integrated suite of IT services became clear in a series of stakeholder meetings conducted by ITS Executive Director Marie Gayle. In these meetings, representatives of NYU business areas said they wanted a more direct path, through a single point of contact, to the services ITS offered the university. ITS responded with two ITIL-oriented approaches, which continue to be enhanced. The first was the development and launch of an online public service catalog and knowledge base, AskITS (http://askits.nyu.edu). The second was a commitment by ITS to begin transitioning ITS Client Services to a single-point-of-contact model. This meant Client Services took the initiative to respond to requests for services involving many of the ITS service areas, to provide the client interface for those services, to respond to incidents, and to route or escalate problems to specialists both inside and outside Client Services. It was this internal commitment and external process change that marked the Client Services Center’s transition from a help desk to a service desk.

Phase 4: Process Maturation

Implementation of ITIL processes goes hand in hand with pursuit of process maturity, as defined by the Software Engineering Institute’s Capability Maturity Model (CMM). As Fauerbach explains it, “ITIL has become an organizing principle and organizing structure for ITS as we think about our organization and how we’re going to move it up in maturation.”

Among other activities, organizations with mature processes characteristically engage in a strategic planning process and in the measurement of quantitative performance indicators (metrics). In the service desk context, findings published in the ECAR study Service on the Front Line: The IT Help Desk in Higher Education associate these activities with organizational maturity and with overall service quality, among other positive outcomes.

NYU’s current strategic plan for ITS lists six key initiatives. Three involve partnerships and three involve strengthening ITS infrastructure and services. Partnering initiatives focus on research competitiveness, teaching and learning transformations, and administrative service improvements. Service strengthening initiatives involve infrastructure reliability, availability, and security; ITS service delivery; and ITS and IT organization capabilities.

ITIL processes helped inform the development of these initiatives and provided support directly or indirectly for their accomplishment. As a result of widespread ITIL training, the concept of service partnerships has permeated the ITS organization, increasing Client Services’ credibility among its ITS service partners and heightening those units’ understanding of their own roles in providing client services. The ITIL framework’s configuration management, release management, and change management processes, in particular, suggested opportunities to develop and reinforce service partnerships within ITS. The internal consistency this has brought to the ITS organization has also helped establish and maintain partnerships with external units by increasing the effectiveness of ITS services and boosting campus confidence in centrally managed information technologies.

An initiative to strengthen the IT infrastructure and services implies a known baseline level of capacity, availability, and support, as
well as a set of metrics by which improvements in those qualities can be measured. ITIL-recommended best practices have helped the Client Services staff put a more systematic focus on the collection of IT support performance metrics, such as the time it takes to resolve a request for service.

In one example, the ITS policy for dealing with a virus-infected computer discovered on the NYU network is to disable that computer’s network access until the machine can be certified by Client Services as virus-free. An ITIL-inspired operational-level agreement between Client Services and the Technology Security Services (TSS) unit specifies a 24-hour turnaround time for TSS to reinstate the infected machine’s network access privileges after Client Services completes and certifies the required disinfection. Client Services Center metrics, tracked through the Remedy trouble ticket system, document not only how long Client Services takes to scrub the computer but also the time it takes TSS to reinstate the machine’s network access. Quantitative information such as this enables all of ITS to track its performance against stated strategic goals.

Marc Steinberg, team leader, Client Services Center, recalled the moment the center went from reporting metrics on its own Remedy tickets to sharing metrics and reports with its internal service partners, with the goal of improving services that span multiple service areas. “The number of unresolved tickets for some organizations was five or six times the proportion for others, which emphasized the stovepiping of the pre-ITIL enterprise-wide IT support fabric. Having performance more available for review and analysis encouraged the building of bridges between units within ITS and beyond.” As Eduardo de Leon, team leader, Administrative Application Support, describes it, ITIL practices encourage this collaborative or proactive, “offensive” (versus defensive) use of metrics. ITS staff agree that ITIL practices provide them with a framework to cull the more relevant metrics out of the sea of data Remedy and their other service management systems collect.

This path hasn’t been free of obstacles. Initially, some in ITS resisted the use of metrics in managing internal service relationships on the grounds that it would be too time-consuming or that metrics could not be consistently gathered from all service areas. Instead of using an overarching and overly complex approach, ITS has leveraged metrics on a case-by-case basis to identify needed service improvements and guide innovation and collaboration across service partner areas. The gradual institutionalization of ITIL practices within ITS has helped ITS “keep it all running” while making enhancements and improvements at the same time.

Just as important as these internal uses of metrics have been their uses in the institutional context. Thanks to ITIL-inspired metrics, ITS was able to tell important parts of the ITS story in numbers in its most recent strategic plan, reporting such items as trend analysis of volume growth in core service areas, ranging from e-mail to the service desk, and the use of ITS’s workflow business applications. Incorporated into a narrative explaining the causes of variations in performance, these metrics illustrated the positive impact of service improvement initiatives. In so doing, they subsequently informed and undergirded ITS’s requests for needed resources.

**Bearing Fruit: Initiatives in Support of ITIL Adoption**

In recent EDUCAUSE presentations, Maddox provided a comprehensive list of initiatives ITS has undertaken in each of the ITIL process areas. The following discussion highlights just a few of them.

**Change Management with Remedy and Beyond**

Change management has been an accepted best practice in IT service management for decades and has been in place in various forms at NYU. In applying the ITIL
change management process, ITS has leveraged internal skills to develop a workflow and change management tool, called ModTrak, and, more recently, has purchased the change module for the Remedy trouble ticket system. In tandem with Remedy, ITS ECOMS, of which Client Services is a part, operates ModTrak, which enables ITS staff and its service partners to request, track, and obtain reports of system changes. A special development project completed last year allows change requests to be passed between the two systems to support ease of use and continuity.

**SLAs and OLAs**

Service level agreements and operating level agreements are both derived from the ITIL service level management process. As noted earlier, difficulties experienced by the Desktop Support subscription service in the collection of service fees were resolved by applying SLA management techniques. Recognizing the importance of effective SLA management, ITS is undertaking the creation of a broader and more coherent, formalized ITIL-based SLA structure to inject more uniformity into its dealings with its customers. Addenda to a base SLA will address requirements unique to each client. Remedy will enable the Desktop Support unit to track and send reminders, if necessary, to internal service partners about their performance against negotiated SLA goals. ITS is exploring, too, the creation of a single searchable SLA service catalog to bring the SLAs into one location, with a PDF link to each SLA. The ultimate goal is to provide clients with the ability to review a comprehensive list of SLA-negotiated services and to understand the service levels they can expect. The SLA catalog will be part of the AskITS online searchable service catalog and knowledge base.

In concert with its SLAs initiatives, ITS has pursued OLAs to define how multiple ITS service areas will collaborate to deliver specific services. “OLAs have enabled the parties to define the ways they work together, to communicate well, and to put a lot of improvements into place,” states de Leon.

Elizabeth Duke, a system administrator and Remedy developer, has observed the growing popularity of OLAs with other ITS units. “Other service areas have realized that Client Services is a resource for them,” she says. “One example is new partnerships with ITS .edu Services. The two areas continue to develop OLAs specifying that Client Services handles tier 1 service calls, while the .edu group addresses the escalated issues.” Even when a unit hasn’t yet developed an OLA, ITS staff believe that the interaction represents a step forward. “In a way,” de Leon says, “the information exchange about each area’s operations and expectations creates an undocumented OLA,” which can serve as a basis for any future OLA discussions.

OLAs entered the NYU lexicon when the New York City campus created an OLA for the management of the Ghana campus’s network. “Support of global sites was an opportunity to work across institutional islands, to build bridges, to cross-train people and have them enter into the operations of the various ITS units they rely on,” states Christian Grewell, team leader, Client Relations and Quality Assurance. To date at NYU, OLAs are not signed documents, but they are documented.

“Each time a new service is rolled out, there’s an opportunity to develop an explicit OLA,” continues Grewell. An example of this is an OLA ITS created across three service areas to more effectively manage support for Blackboard, a high-demand course management system at NYU. The Blackboard support approach created tiered levels of service requests, delineating which NYU group will support which types of request and defining how the requests will be routed. Again, in this
OLA, Client Services agreed to respond to the bulk of tier 1 requests, which are routed via Remedy’s online smart forms. All Blackboard service partners will track requests via Remedy, too.

Self-Help Tools
To enhance its Client Services Center’s efficiency, ITS has focused on self-help tool development for individuals to resolve routine problems for themselves, most especially with its Remedy-integrated knowledge base. (One of ECAR’s case studies, University of Alberta: Using Online Help Desk Tools to Enhance Client Service and Department Operations, offers an in-depth look at this topic.) Because an online knowledge base is available to supplement more personal service desk interactions at any time, this one serves ITIL’s availability management process within the overarching service desk management function.

Making the ITS knowledge base available online was a natural step for NYU because, as McMillan observes, “New Yorkers generally expect to be able to be self-sufficient.” The expectation for higher-touch services may be greater at the global campuses (for example, when assisting new faculty to settle into a new country and teaching environment), but overall the service desk’s job is to help its clients locate the appropriate party to resolve problems and to minimize points of ITS contact before problem resolution. A knowledge base does this in a highly available way.

Members of the NYU community log on to the ITS knowledge base either from the Remedy interface within a Remedy ticket or directly via NYU’s AskITS service portal. Robyn Berland, a manager in ITS Student Technology Services, likes the knowledge base because “consulting it allows an ITS support staffer without strong technical knowledge in a particular service area to provide clients with solid technical support.”

Identity Management
Identity management (IdM) is a high-priority activity in the ITS organization. One reason is NYU’s increasingly global orientation. “Students in Singapore, for example, may never set foot in New York City,” states Fauerbach. “Providing access to services for them may not always be easy, and managing those credentials manually over long distances wouldn’t be feasible.” Consequently, NYU is automating its IdM processes in two ways. It is currently in the pilot phase of a Microsoft Active Directory implementation, and it is piloting Sun Microsystems’ Access Manager and Identity Manager solutions. The ITS IdM initiative is in tune with two ITIL processes, configuration management and availability management. “Implementation of these processes will help us look at which systems are available and will help us find and manage the interactions among the systems our clients use,” states Maddox. “Identity management will be a core piece, defining roles and access to each system and identifying who’s impacted by each service interruption or outage.”

Costs and Benefits
Any organizational change as sweeping as implementation of the ITIL framework will have costs as well as benefits. Among the ITIL processes is one for financial management, which brings method to the tracking of service costs, including the costs of ITIL implementation. For tracking ITIL’s benefits, the IT service management literature includes excellent resources for establishing, analyzing, and reporting metrics.

Costs
Given ITIL’s wide-ranging nature, tracking implementation costs may be difficult, even by higher education standards. As a starting place, Maddox says NYU has looked at the purchase and/or development costs of
products and services associated with ITIL initiatives. He identified several ITIL-related projects with fairly clear price tags including training and the purchases of a knowledge base engine and a configuration management system. One cost-saving measure, Maddox observes, was “to bring training to us. Our investment was much less costly than sending individuals away for off-site ITIL Essentials training.”

Maddox warns that “long-term [ITIL] gains may have short-term prices, but it’s important to pay them.” For example, in 2007, NYU experienced a dramatic 35% spike in documented service requests, reaching almost 71,000 cases. “Consequently, performance against our single-day-resolution service goal took a hit, even with web services,” he continues. “The capacity we have to devote to meeting that level of demand doesn’t leave much capacity for innovation. With fewer than 300 people working in central IT services in a community of 70,000 people, the price of process improvement is either working extra hours or accepting that between 9:00 a.m. and 5:00 p.m. you will be compromised due to limited resources. ITIL activities take staff off of day-to-day services, but investing in the knowledge base, for example, to get a service catalog out is a short-term price to pay for longer-term reward.”

One of the less obvious costs of ITIL in a limited-resource environment is that the formal processes and new methods of communication and management may initially or even generally increase a project’s duration. The service scope expands, involving more decision makers and resulting in more opportunities for discussion. The benefit, however, is a more supportable, scalable service. Maddox also points to improved client satisfaction in survey results, which he attributes to ITIL-related activities.

Benefits

Over time, NYU has realized several organizational benefits from adopting ITIL practices. The framework has enriched communication in support of services that ITS provides to the large and diverse university. “ITIL has promoted people’s agreement to do things in a consistent way using consistent tools, as opposed to using idiosyncratic tools whose data couldn’t be merged. ITIL has provided a way to get away from thinking about the tool,” states Vincent Doogan, director, Student Technology Services. Maddox adds that “ITIL allowed NYU to think about service management at a higher level, elevating the conversation.”

De Leon believes that ITIL processes have “brought structural changes, creating a more hierarchical organization.” For example, ITS added more service request escalation points by establishing a tier of team leaders within the organization to focus on certain aspects of the service desk and to oversee the accomplishment of service goals; these leadership positions did not exist pre-ITIL.

Adoption of ITIL processes has heightened staff awareness of the importance of meeting client expectations, too. “We now work toward providing seamless service from the customer’s point of view,” states Steinberg. ITIL made him more aware that in his role as team leader for the Client Services Center, he is a broker for the whole suite of ITS services.

ITIL-enhanced tools have facilitated Client Services Center operations as well. Carlos Garcia, global services manager, notes that “seeing Remedy in the context of its place in the ITIL framework was revealing. ITIL provides a language and a logic. When one is reflecting on why something went wrong, a knowledge of ITIL suggests places to look for causes and for fixes.”

The service improvements ITS has implemented in its adoption of ITIL practices have broadly enhanced its credibility throughout the NYU community. For
example, the organization’s reputation for innovation and its documented service effectiveness have positioned ITS as a key player in successfully carrying out NYU’s highly strategic global initiatives and in engaging members of the NYU University Leadership Team earlier than ever before in considering the IT implications of the institution’s strategic aspirations.

ITIL has gone a long way toward improving relations with the IT service organizations outside ITS, enabling ITS to move from a position of silo support to one of collaboration and community. ITIL principles now “spill over” to new ITS-related areas and activities, according to Maddox. For example, he observes, “When the central human resources group upgraded their computing and e-mail system at the end of November 2006, the footprint of their whole services management system changed dramatically. As a result of our ITIL-inspired learning, we are more self-aware in our outreach efforts. HR perceived ITS as a service partner and involved us early in making sure the transition was carried out gracefully.”

Enhanced Remedy-based tools and extended hours of operation make it attractive now for help desks in units outside ITS to work with the Client Services Center, even to the point where some units have repurposed their staff for second-tier support only, leaving first-tier calls to Client Services.

Compliance with auditing, governance, and state and federal policies has put more emphasis on change management at NYU. ITS is trying to share access to relevant ITIL-related training resources with others on campus, which in turn has helped validate the ITIL implementation.

During a round of ITIL-inspired interviews in 2006, stakeholders in ITS online services shared their hopes for those services with the ITS administration. Improvements ITS made in 2007 directly responded to that input, including a single point of contact for service support, a detailed service catalog, and a web-based calendar service. “We’ve really enhanced our relationships with our stakeholders based on our response to their feedback,” states Maddox. He hopes to extend that progress by organizing further conversations with additional stakeholder groups.

Students, too, see benefits from ITIL processes. ITIL-inspired enhancements in student services, for example, have accelerated the process of registering their computers on campus. This has benefited both students and their families. In particular, new service efforts have improved the resolution of registration-related problems. In 2006, after extensive improvements by network teams in collaboration with Client Services, ITS metrics indicated a decline in the number of help desk calls on opening day of registration and in the average length of time to register. Phone calls decreased because ITS began posting more timely and more complete information about registration and created a web front end to a computer registration page. Also, new ITS processes have made it easier for students to use self-help tools, allowing Service Center staff to spend more time with those who need personalized help.

Finally, ITIL practices have brought coordination improvements to new system rollouts. Previously, ITS used fewer common business processes to identify and initiate projects; that situation has changed. For example, with NYU’s implementation of ALEX, a new open source learning management system, the whole team thought about how the ITIL framework could facilitate the process. “Previously, we lacked common language and/or practices to manage such projects,” states Kelvin Shivers, a team leader in access management. “Now we look for ways to map projects to the ITIL structure. This represents a culture change; it affects everybody.”
**Lessons Learned**

Following are some of the lessons NYU learned during its ITIL implementation. Although some, inevitably, are general truisms, others relate specifically to ITIL activities.

**ITIL's comprehensiveness requires a strong champion.** All IT initiatives require an advocate to nurture them to fruition, but the overarching nature of ITIL practices requires especially dedicated encouragement. In addition to education and organizational commitment, an ITIL implementation requires evangelistic champions who are “repetitively enthusiastic,” as McMillan terms it, to remind staff members that perceived roadblocks are actually opportunities to create innovative ways to surmount difficulties. McMillan acknowledges that “progressive work on ITIL is hard to champion when most of the service desk’s work ends up in the ‘urgent quadrant.’” But ITIL work is important, too, and the evangelist has to find ways to make ITIL urgent so that it competes for mind-share with other imperatives. “Ben [Maddox] and his management team have been very effective, and I count on that,” McMillan says, “because the time I can devote to pushing it myself is limited.” Another challenge is that technology problems historically only get more complex and overall demand for services never lessens, making it difficult to predict how demand will map to the next level of ITIL implementation.

*A rose by any other name would smell as sweet.*

The term *ITIL* is foreign to most IT clients. ITS understood that to its clients, it would be just another example of IT’s baffling alphabet of acronyms. Consequently, ITS tends to avoid using the term with its constituents in discussions and training about ITIL concepts. For example, in its weekly orientation for new university employees, ITS discusses processes and services that are ITIL based but doesn’t mention ITIL by name. “ITS’s job is for the campus to experience us as good service providers. They may not know or care whether that comes from ITIL or from XYZ,” states McMillan.

**ITIL is not a short-term project.** This case study has demonstrated the long-term nature of an ITIL implementation. As mentioned earlier, most ITIL implementations are incremental, often with the adoption of one or two processes at a time, spreading full adoption over several years. Maddox suggests using a planning framework to “connect the dots” of various ITIL-related initiatives and show how they fit into an overarching ITIL portfolio. Finally, he observes that resource limitations may impact implementers’ timelines and emphasizes the need to be flexible.

**Don’t underestimate ITIL’s organizational impact.** Maddox observes that “Organizational change and the introduction of an intentional approach to change can create tension, and one has to figure out how to manage it.” Not all staff will respond in the same way to the challenges that change presents, and not all organizations will proceed at the same pace toward the kind of change ITIL brings. To organizations that aspire to an ITIL-based service improvement, Maddox urges patience: “Understand that some things are going to give way under your feet and other things are going to grow.”

**Weave ITIL into the IT production cycle to broaden its impact.** At the front end of the development cycle, ITS found that by integrating support planning earlier in its product and service development cycles, its released products became easier to use and support. On the
back end, a more intensive use of metrics allowed ITS to evaluate the effects of improvement measures and use that analysis to guide future improvements.

Effective ITIL-defined service level management can become an important organizational booster.

Taking a more formal approach to service level management is empowering. For example, formalizing its SLAs allowed ITS’s Desktop Support unit to collect more revenue, which they reinvested into the service, thereby increasing client satisfaction. Developing stronger communication across service areas relating to desktop support allowed ITS to integrate some functions that had been dispersed across teams, adding strength to the desktop team and collapsing redundant services previously spread across ITS.

Engage the community in the process.

The NYU community may be unfamiliar with the ITIL acronym, but a variety of constituents have participated with ITS in ITIL implementation. To increase ITIL’s benefits to clients, ITS strived to make noticeable improvements in logon procedures for ITS services and mitigated the impact of related service disruptions by using innovative notification approaches. More generally, ITS has begun working with other IT service provider groups at NYU to coordinate services more effectively. It has also solicited input from client communities about what would support their business processes and has leveraged ITIL to prioritize ITS initiatives accordingly.

Change is coming to ITIL, so prepare for ITIL v3.

The May 2007 publication of ITIL version 3 represents the first refresh of the ITIL standards since 2000. “A key change to ITIL under version 3 has been a focus on the alignment of IT and ‘the business’ and on the management of IT throughout the complete life cycle...it will reflect the major changes in the way businesses buy and utilize IT services,” Maddox says. An IT organization embarking on an ITIL implementation today will need to consider how version 3 will impact that project.

Future Plans

Now that the ITIL implementation has begun to bear fruit, ITS is looking at how to take it to the next level. One focal point, as discussed earlier, is to forge a link between ITIL’s configuration management process and NYU’s IdM initiative.

NYU’s institution-wide focus on global services prompted some teams in ITS to create an initiative called “Service without Boundaries.” This initiative focuses on services that are readily available and consistent across NYU’s many international sites and campuses. One component of the plan is a service framework for aligning New York–based ITS services with the needs and circumstances of ITS clients at the widely scattered NYU campuses around the world. ITS is relying heavily on experience gained from the local implementation of ITIL to ensure its effective participation in this strategic initiative.

Internally, ITS plans a “booster shot” of ITIL training to foster continued communication about ITIL throughout ITS and NYU. Although de Leon reports that “Client Services’ behavior is gradually being transmitted to other units ‘by osmosis,’” there is a general consensus about the need to encourage adoption of ITIL’s common language and approach by ITS areas outside of Client Services and by non-ITS service partners.

Looking at the range of ITIL processes ITS has considered implementing so far, Maddox identifies three processes whose adoption he would like to hasten: configuration management, availability management, and capacity management. “All three involve increased interaction around ITIL activities between Client Services and the ITS technical areas,” an area of cooperation that he believes is essential to fulfilling the SLAs ITS publishes
for basic services such as e-mail. For example, he explains, “If a client is understandably frustrated by a certain outage, we want to listen and learn from that. At the same time, because we publish metrics that a service such as e-mail is available 99.9% of the time, clients know that unscheduled downtime for us is the exception, not the rule. It’s important to have credible, publicly accessible statistics associated with our services.” By developing organizationally shared configuration management, capacity management, and availability management service processes, Maddox hopes to bring the needed visibility to ITS service performance statistics.

Another initiative planned for the near future is refinement of the ITS service delivery cycle. If a client organization is highly involved in the identification of relevant support areas at the beginning of a service’s development, it is more likely that the Client Services Center will be able to handle the bulk of support issues on its own, freeing the developers to put their energy into the next new service. This need motivates greater collaboration between ITS and the client, but unfortunately ITIL offers little guidance in this area.

Finally, following Client Services’ implementation of mature incident management processes, the need has emerged for a formal problem management process, which ITIL defines as the identification and solution of the problems underlying a cluster of similar service incidents. One objective of ITIL’s problem management process involves the service desk’s sharing incident information with its service partners in the central IT organization so that they can implement fixes to failing systems and prevent further incidents.

ITIL’s problem management process will provide a basis from which to discuss shortcomings in existing services, which of course is the first step in resolving them. Remedy offers components of a problem management approach; its use of the ITIL framework requires a “process” to identify and act on a service problem. But inputting problems into Remedy does not necessarily guarantee that the resources to resolve them will be available or even identifiable. As Maddox observes, “That’s one of the points of having metrics—using them to tell a story,” in this case to point out needs for which no resources have been identified. The problem management process will enable staff to talk more effectively to management about the investments needed to achieve lasting problem resolution.

**Conclusion**

ITS has found that the greatest value of the ITIL framework is in facilitating communication both inside and outside the organization. “Our adoption of ITIL isn’t a commitment to a framework or to behavior that is in or out of the box,” states Maddox. “It’s a discussion about service improvement that is guided by ITIL best practices.” This is a philosophy that ITS has taken to heart, and the result has been improved service across its portfolio. Although much remains to be accomplished, the results ITS has seen to date have inspired a growing confidence in the ITIL framework. As McMillan observes, “ITIL has helped us find common language and set service goals across service partner teams. We’ve made great progress toward our service improvement goals, which include highlighting the services we do well and enriching the ones that are growing or need special attention. Additionally, by unearthing metrics of success and more efficient practices, we keep finding things to celebrate—service changes, new services, and unsolicited e-mails from clients and service partners—about great service. The more complete our adoption of smart service practices and communication across teams, then, the further we have been able to extend that progress. As we look to the future, to the new challenges we face, our ITIL experience moves forward with us, supporting our growth and goals.”
Endnotes
6. SWOT stands for strengths, weaknesses, opportunities, and threats. Strengths and weaknesses are generally internal to the organization; opportunities and threats are generally external. SWOT analysis is a common early element in strategic planning exercises.

Citation for This Work