

Creating a Technology Desk in an Information Commons

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ABSTRACT

Roughly three years ago, Bucknell University's Computer & Communication Services department (CCS) and the Library merged into a new department, called Information Services & Resources. One of the results of this collaboration was the decision to create an "Information Commons" on the first floor of the library—one place where people could go for assistance with all of their information needs whether computing, media, or content-related.

The Information Commons was built around three service desks in the Library: Reference, Circulation, and a new Technology Desk. The Technology Desk is a combination of the CCS Help Desk (previously located in the computer center) and Media Services (formerly located in a wing of the library building). These services were combined, expanded, and put in a prominent location on the first floor of the library with the other two service desks. The Technology Desk is now the front door to all technology services the organization provides, interfacing with seven or more different functional groups in the department.

Adjacent to the Technology Desk we created a Technology Courtyard, with 28 high-end multimedia stations with a large working space for each station. These stations are targeted for two audiences: those that need to do multimedia projects, and those who need space to work collaboratively. Multimedia and collaborative projects are receiving increasing emphasis from faculty in their assignments, and the Technology Courtyard is designed to facilitate this kind of work.

The Technology Desk and Courtyard have now been in existence for a little over one year. In our paper, we will address many aspects of the creation of the Technology Desk, including the philosophy behind the Technology Desk, the design of the physical layout, the services that the desk provides, the staffing issues, communication mechanisms, policies and procedures, and the use of student employees. We will also address what worked well in this process, and what we would do differently if we had the opportunity.

1. INTRODUCTION

Bucknell University is a private co-educational undergraduate university with a balance of professional and liberal arts programs and a limited graduate program. There are approximately 3400 undergraduates, 200 graduate students, and 360 faculty.

In 1997, Bucknell University's Computer & Communication Services department and the Library merged into a new department, called Information Services & Resources (ISR). Both departments were already successful, and it was important that the merger not create problems in services where none existed before. Because of that, the chosen approach toward the merger was one of "opportunistic evolution," rather than revolution: the organizations would look for areas where integration and collaboration made sense, and take advantage of those opportunities as they arose, rather than doing an instant top-down reorganization. The computing staff remained in the Computer Center, while the Media and Library staff remained in the Library building.

In discussions with our constituents, it became clear over time that we could improve how and where we offered our services. Some of the consistent needs we heard included the ability to go to one place to get assistance with anything information related; the availability of more areas where students could work on projects collaboratively; and more access to high-end media equipment, to name a few.

Therefore, a team was formed to discuss how we could move in the direction of creating an "Information Commons" on the first floor of the library—one place on campus where faculty, staff and students could go for assistance with all of their information needs, whether computing, media, or content-related. The Information Commons design team spent months discussing and re-designing the layout of the first floor of the Library. Construction was completed late in the summer of 1999. The result included:

- a re-designed Reference Desk
- a relocated and more attractive 24-hour study area
- two group video-viewing stations with wireless headsets
- a relocated video collection for easier browsing
- locations for students to network laptop computers
- a new Technology Desk
- a Technology Courtyard

This paper focuses on the creation of the Technology Desk and the Technology Courtyard, key components in the new Information Commons.

The Technology Desk is a merger of the Computer Center's Help Desk and the walk-up services formerly provided by the Library's Media Services area (formerly located in a wing of the library). These services were combined, expanded, and put in a prominent location on the first floor of the library with the other two service desks (Reference and Circulation). The Technology Desk is now the front door to all technology services ISR provides, interfacing with seven or more different functional groups in the department.

The Technology Courtyard is a collection of 28 high-end self-service multimedia stations, including fast computers, large monitors, scanners, document cameras, video and audio editing equipment, QuickCams, and other equipment. These stations are targeted for two audiences: those that need to do multimedia projects, and those who need space to work collaboratively. Multimedia and collaborative projects are receiving increasing emphasis from faculty in their assignments, and the Technology Courtyard is designed to facilitate this kind of work. The Courtyard also hosts the Technology Learning Center, a collection of books, royalty-free graphics and video clips, instructional materials, videos, and CD-ROM tutorials, all of which are available for use in the Courtyard or for checkout.

2. TECHNOLOGY DESK PHILOSOPHY

As the Information Commons design team began its discussions, four goals or ideals were outlined that eventually became the driving force behind the creation of the Technology Desk. In no particular order, they were:

- One-stop shopping whenever possible
- Increased visibility for service points
- Improved professionalism for the Help Desk
- A public manifestation of "ISR-ness"

Having one obvious place and one easy phone number for all technology-specific questions and services (both computing and media related) seemed to be right in line with the overall concept of the Information Commons, and one-stop shopping. Merging the computer center's Help Desk with the library's Media Services' walk-up services into a universal Technology Desk would also be an opportunity to address a shortcoming shared by those two groups, which was their lack of visibility on campus. Although located in the Library building, Media Services was fairly hidden. Indeed, except for the lettering on the door, it looked like private offices from the outside. The Help Desk was housed in the Computer Center, an annex of the Engineering building, and campus community members practically needed a map and a compass to find it. We hoped that making these service points more accessible would enable the campus community to make better use of them.

One option that we considered was combining not only Technology services but also Reference services, to create a single point of contact for all questions—a "Super Desk." Although on the surface this seemed to make some sense, after some thought we rejected this plan. The similarities between the Reference Desk services and the Technology Desk services were not great enough to take advantage of any real "synergy" between them. Although

Reference Desk staff do occasionally have to answer technical questions relating to online or database searching and the computers set aside for those purposes, most of their activities are of a very different kind than those of a computing and media help desk. Overall, the staffing needs and the skill sets required to provide good service was very different for each desk. Instead, we chose to emphasize appropriate referrals between all of the service desks (Technology, Reference, and Circulation).

Another ideal we wanted to strive for was a more professional environment for the computing Help Desk, in order to encourage confidence in the desk's abilities. Although the Help Desk was by no means a bad one, its location had encouraged a few difficulties in its management and operation. One of these was a deep culture of informality. It was quite common for student staff to listen to recorded music and engage in minor horseplay while on duty. In warm weather, shorts and bare feet were common attire. The difficulty was that this very casual tone often carried over into their interactions with clients, and in many cases such an approach was simply not appropriate. Moreover, the Help Desk area itself made maintaining a professional tone very difficult. The quarters were small and cramped, and the telephones were at the same physical desk that walk-in clients would approach, and so student staff were often in each other's way and unable to hear clearly. There were few enough computers that they quite commonly had no access to an example of the appropriate platform when trying to walk through a problem with a call-in client or to demonstrate a procedure to a walk-in. We made addressing these issues a priority in contemplating the design of the Technology Desk.

In many ways the last point, the manifestation of "ISR-ness," is the one thing that is not like the others. It is not a practical nor a quality-of-service consideration, and it was the last of the four points to come up in the Information Commons design team's discussions. However, "ISR-ness" was the consideration that stiffened our resolve to proceed with the creation of the Technology Desk when the many practical and strategic challenges of its creation brought us to the point of considering postponing the plan until some future round of projects. After much thought we decided that, since ISR as an organization would have existed for two years at the time the Information Commons would make its debut, it was a good time to make some visible move toward integration. Without such a move, the Information Commons project would merely have been a facelift for the main floor of the Library, and not an integration of services.

3. PHYSICAL LAYOUT

After it was decided to create the Technology Desk, a good deal of time was spent on designing its physical layout, as well as that of the Technology Courtyard. This was an interesting challenge, because we had to anticipate how we would work even though these services had never really existed before. We first drew up functional requirements, and then with the help of an architect, designed the physical layout. The Bertrand Library is the academic hub of the campus, with an attractive and inviting environment, so the aesthetics in the library are especially important. Our plan had to fit in with the overall look and feel of the building.

The Information Commons was meant to provide one place where our clients could find everything they needed pertaining to

information or technology services. This meant that we wanted the three service desks in the library—Reference, Circulation, and Technology—to be easily visible and welcoming to anyone entering the building. We also wanted the service desks to have a clear line of sight to each other, so that referrals could be made easily, simply by pointing. For the most part we accomplished this, although due to the Library’s central stairway, the Technology and Reference Desk’s view of each other is partially occluded.

It was important that those working in the Technology Courtyard have easy access to staff working at the Technology Desk. Just as a Reference Librarian might leave the Reference Desk in order to assist a patron with a more difficult research issue, we wanted the Technology Desk staff to be able to go out to the workstations and assist users there. Thus the Courtyard needed to be located near the Technology Desk. This meant that the Courtyard would have to be located in the back of the first floor, behind and adjacent to the Desk. We needed our desk to face in two opposite directions—towards the front of the library, and towards the Courtyard. We therefore designed a desk that curves to create three sides, and staff members are placed strategically along the desk. In this way, users can come up to the desk from any direction and feel like they’re approaching the front.

Patrons of the Technology Desk should be able to walk up to the desk and be face to face with staff members. However, the Desk also needed to be ADA compliant—low enough for persons in wheelchairs to approach the desk, or to work behind it. We also had to be able to hand heavy equipment out over the desk. We finally elected to have two sides of the desk at “bar” height (with the consultants on high stools) and one side lower for ADA compliance and for handing out equipment.

Since the Technology Desk was to be located in the library, we needed to be sensitive to the fact that noise would be a bigger issue than it was when the Help Desk was located in the Computer Center. We anticipated a large number of telephone calls coming in, and we wanted to minimize the disturbance that would create. We therefore created a wall behind the outer desk area, behind which telephone stations would be located. Walk ups would be handled at the outer desk, and telephone and email contacts would be handled behind the wall. We chose to have large windows put into the wall so that staff members working behind can see the outer desk and the Courtyard.

Another requirement was secure yet easily accessible storage space for the computing and media equipment that we were going to be lending out, as well as space to perform some of the services we would be offering, such as laminating and tape duplication. Space for the Technology Desk staff was also needed. We wanted our desk supervisor to be visible and available to student workers, and yet removed enough so that she could work on projects, consult with faculty, etc. At the same time, she needed to be able to see the telephone stations and the outer desk, since she would be closely supervising the activities there. We also needed space for one or two staff members who would be providing higher level technical support to the desk. When serving at the desk, they needed someplace to sit and work, and when not at the desk, they needed their own office space, somewhat more removed.

To meet these requirements, we designed a large office space behind the telephone stations, where lockable cabinets could store the equipment, and where the desk supervisor could work. In

addition, a counter in the back of that area provides space for performing tape duplication, laminating, and so on. In the telephone area, a workspace is available for the technical staff member on duty. Separate from the Desk area, but around the corner, is a double office for the Technology Desk technical staff members when they are not working at the desk.

As we stated earlier, the primary purpose of the Technology Courtyard was to provide high-end multimedia stations and collaborative workspaces to our students (as well as faculty and staff). We wanted enough room at each station of the 28 stations for at least three people to work together, with space for large monitors, scanning equipment, video cams, Jaz and CD-RW drives, VCRs, document cameras, and other multimedia equipment. We made both platforms available (roughly 2/3 Windows, 1/3 Macintosh). We designed custom workstations in an “L” shape, with barriers between the stations so that there was the sense of being private, but with glass on the top so that the area wouldn’t seem broken up and dark. We also needed a way for individuals to do video and sound editing in a quiet environment, without disturbing others or being disturbed. For this purpose we dedicated a former group study room to be the new video and sound editing room. Although it isn’t by any means acoustically perfect, the room gives students a place to work on video and sound projects in relative quiet. Finally, we made sure that each workstation at the Technology Desk had a similar level of computing hardware, so that the staff there would be able to effectively support the equipment out in the Courtyard.

4. SERVICES

As detailed above, the services that the Technology Desk provides include those formerly offered by either the Help Desk or Media Services. The Desk offers general computing and media support, media and computing equipment loans, color printing and transparencies, laminating, file and disk recovery, file transfer and conversion, virus disinfection, password resetting, video and audio tape duplication and format transfer, and multimedia assistance.

In addition, the Technology Desk is the contact point for technology services offered by other groups in the organization. If a technology problem or request cannot be resolved by the Desk, it is forwarded to an appropriate staff member. We receive and refer requests for desktop support, lab and classroom computing and media support (including answering a classroom emergency hotline), graphics and photography work, ResNet support, instructional technology assistance, personally and university-owned hardware repair, technology training, account management, UNIX and NT server support, and network support.

5. COMMUNICATIONS

5.1 Communication with other parts of ISR

Since the Technology Desk serves as the entry point for almost all computing and media requests to all of ISR, we had to spend a significant amount of time devising appropriate and effective means of communication between the Desk and other parts of the organization. In order for the Desk to be seen not as an impediment but a conduit, communication had to be one of our primary areas of concern.

Before the establishment of the Technology Desk, our Help Desk was part of our Client Services group, which is responsible for

desktop support, technology training, account management, the Software Service Clinic (a free service supporting personally-owned computers), and ResNet support. Client Services used a home-grown FileMaker application called Grand Central Station (GCS) for problem tracking and resolution. With the advent of the Technology Desk, it was agreed that GCS would be expanded to act as a communication tool among all of the technology groups in ISR. This includes all of the Client Services functions, plus all of the others mentioned in the services section above: all told, roughly 10 different working groups. 45 or more full-time employees depend upon GCS, as well as 45 Technology Desk student employees, 28 ResNet student consultants, ten student departmental consultants, six student trainers, six Software Service Clinic student consultants, five classroom support student employees, and three student technicians—almost 150 individuals.

A “ticket” is logged in GCS for every problem or request that comes to the Desk. All ticket referrals between staff are tracked as well. When staff members are assigned tickets, they get automated email alerting them to that fact.

A great deal of time was spent working with the different groups to design interfaces and functions within GCS that would help them perform their work. Because database development takes time (something we had very little of), these additions to GCS could not be in place by the grand opening of the Technology Desk. So at the outset, there was a great deal of confusion because each group the Desk interacted with had its own process for reporting requests and assigning them, and each group expected the Technology Desk to be able to follow their procedures. The new staff had enough to learn and adjust to without having to use several different ways to report problems, depending upon the problem type. The result was that initial communication between the groups was poor, and we received numerous complaints of requests falling through the cracks or being handled incorrectly. These issues were for the most part resolved in January of 2000 when a GCS upgrade was put into place.

Of course, GCS is not the only way we communicate within ISR. Our hardware technicians as well as our Learning Spaces (classroom and labs support) team carry radios, and the Technology Desk has radios so that members of those teams can be contacted directly and dispatched in the event of a time-critical issue.

Our desktop support staff carry alphanumeric pagers. There are also pagers for various services, such as the Network Pager, which can be beeped when a network problem arises. Staff can be sent a text page simply by sending them an email message. In GCS, the Technology Desk can send an emergency page with text just by clicking a single button.

5.2 Communication with Clients

The Technology Desk has to be concerned not only with communicating with other parts of ISR, but also communicating with our clients. Client communication is even more important to customer satisfaction than actually addressing the technical problem (hard as that may be to believe). Unfortunately, communicating with clients can be time-consuming and sometimes gets neglected while the technical problem is being focused on. For that reason we have put some features into GCS

to facilitate client communications. GCS can send automated emails when tickets are referred, letting users know their problems have been forwarded to an appropriate staff member. GCS will also automatically send an email letting a users know when their tickets are closed (and asking them to verify that the problems have indeed been resolved.) Finally, the classroom and labs support team can send an email confirming a request for classroom technology assistance simply by clicking a button. We hope to have these emails give even more detail in the future, and to expand the use of automated emails.

We also use GCS to keep a record of what client communications have taken place. The Technology Desk staff makes an entry in GCS every time we contact a client about a problem ticket. Copies of email sent and received are kept in the ticket, and even unsuccessful attempts to reach the client are logged. This information is invaluable when following up.

5.3 Internal Communication

On a separate but related issue, we learned that we also had to build effective communication mechanisms to be used internally among the Technology Desk staff, both students and full time employees. We put up a large white board where important short-term announcements are posted. As staff come on duty, they can see important announcements, such as a server being down for maintenance. We have a listserv for all Technology Desk staff, and messages are regularly sent out reminding everyone of procedures, etc., as necessary. GCS has been used as a mechanism for discussing technical problems, but we have learned that we need a more organized forum for ongoing technical discussions, requests for substitutes, discussions of policy, etc. We are currently looking into setting up a web-based bulletin board system for those working at the Technology Desk.

6. STAFFING

Our initial staffing plan was based on little more than speculation. We were providing services that had never been offered before, in a brand new location. What’s more, with the Desk now located in the heart of the library, we were also required to be open and staffed significantly more hours than either of the former groups; all service desks in the library are open whenever the library is open. We had two full-time staff members, two part-time staff members and about 40 students, and we distributed them throughout the week according to our best guess. We were confident that Friday evening and Saturday would be times of relatively low client demand, and we arranged the schedules of the professional staff members so that there was almost always at least one of them on duty at most other times. Our guesses turned out to be pretty much on target, although we often wished for simply more people than we actually had.

6.1 Training

ISR student employees who assist with computer and network support all attend a three-day training session immediately before the beginning of the fall semester. In addition, most of the student teams, including the Technology Desk team, hold weekly one-hour training sessions throughout the year, brushing up on especially important skills or covering topics that didn’t fit into the introductory training session. We made sure there was adequate training on computer-related topics, but initially there was little emphasis on media service subjects, partly because there had been no formal training in that area before. This led to a

number of students playing “catch-up” in those skills during the semester, so we added a greater amount of media material in the second year.

One way we determined training needs for the second year was by asking all staff, both students and professional members, to answer a survey of skills. This survey covered familiarity with all of the major software and specialized hardware supported by the Desk, as well as with the primary tasks involved with day-to-day operations. Areas in which a significant number of Technology Desk staff felt less than confident were regarded as priorities in planning the training topics for the second year.

6.2 Hiring

Hiring of all ISR student staff involved with technology training and support is handled as a single process (with the exception of the ResNet student consultants). Students previously or currently working with ISR must re-apply, although this is mostly a record-keeping formality. Student staff can choose the teams in which they are most interested, and their desires are accommodated as much as possible, according to seniority. With between 42 and 47 members at any time, the Technology Desk team is by far the largest student team and so, to be honest, many of the students at the Desk are not on their first-choice team, and are relatively inexperienced.

Application and interviews for summer positions take place early in the spring semester, followed shortly by application and interviews for the following fall semester. There is no mass hiring or training for the spring semester; turnover during the year is low, generally (so far) fewer than 10 departures for various reasons including travel abroad and December graduation, and applications by first-year students are sufficient to balance them.

Early in the process of hiring for the second year, it was noticed that there were not enough applications to fill positions for even our minimum needs. Investigation revealed that our pay rates had not increased in step with those offered by other departments on campus. Many of the more talented students were simply following the money. We moved very quickly to request an increase in our student payroll budget, which was granted; this has enabled us to attract more applicants and fill all of our planned positions.

7. POLICIES

Previous to the formation of the Technology Desk, Media Services student staff were few enough, and Media desk hours limited enough, that the department supervisor knew each of the students personally and was able to oversee their activities closely. There was little need for detailed documentation of the various procedures. Training of new students, and communicating changes in procedures, could be accomplished quickly face-to-face.

The Help Desk had a larger number of student employees, and a wider variety of activities, and so had some history of written procedures, but those procedures were documented in a number of different forms and locations.

After the formation of the Technology Desk, the number of student staff increased not only because of the merging of the two existing staffs, but additional hiring was required to cover the expanded hours. Suddenly there was a team of 45 students and four full-time staff members, some of whom worked hours that

never overlapped, and all of whom were trying to learn new procedures and responsibilities. Even experienced students and staff needed extensive cross-training in the activities and responsibilities of the “other desk.” It became very important to develop and document clear, detailed procedures for practically all duties at the Desk.

For the first few months—the first semester of the Desk’s existence, in fact—no one had time to approach this task. In addition, the Technology Desk turned out to be one of those things that is much more than the sum of its parts, and we found ourselves with newly-minted tasks that none of us had anticipated. Other tasks that we had thought were well understood took on new aspects when being carried out by dozens of people, rather than just five or ten.

Some examples of new tasks made necessary by the creation of the Desk, and of existing tasks made more complex, are:

- Media loaner equipment check-out and check-in
- Computer & projector loaner check-out and check-in
- Courtyard peripherals check-out and check-in
- Computer workstation reservation scheduling
- Handling lab and classroom special set up requests
- Classroom media emergency call processing
- Network emergency call processing
- Desktop computer emergency call processing
- Computer loaner re-imaging
- Video and audio tape duplication
- Client interaction protocols
- Telephone protocols
- Call tracking database conventions
- Monetary transactions
- Media material accounting
- Client inquiry referral
- Reservable and loaner equipment scheduling

All of these tasks, and more, had to be codified and documented. At the end of the fall 1999 semester we made doing so a high priority for the Desk’s full-time staff. The process is still ongoing, although most of the most important were in usable form and bound into a reference manual by the beginning of the fall 2000 semester. They have also been added to the knowledgebase currently under development for use by both the Technology Desk and the campus community.

In addition to documenting procedures, we discovered some decisions that were being made by the seats of our pants that needed to be set into consistent policy. These included such judgment calls as whether and when a student, rather than a faculty or staff member, could borrow high-end loaner equipment like notebook computers or digital cameras, how to account for materials used for non-chargeable work like poor quality copies, how to handle the cases of students abandoning coats, materials and open applications at computer workstations in the Courtyard when other students were waiting to use them, and the extent to which we are responsible for enforcing copyright in our area.

Whenever such a topic is noticed, we discuss it at our weekly staff meeting, and decide as best we can on a policy. (In the case of both the abandoned materials and copyright questions, we created small signs for display at each workstation in the Courtyard describing our policies—referring users to the Appropriate Usage Policy in the case of copyright questions, and explicitly setting a fifteen-minute limit on time away from the station if others are waiting to use it.)

8. CONCLUSION

In spite of a number of challenges that surprised even us, who were expecting many challenges, the first year of the Technology Desk's existence was a success. The increased visibility and approachability enabled us to increase our "mind share" on campus enormously. There were some significant bumps in our service the first semester, but none of them became disasters, and almost all were due to novelty and inexperience so that repeats can be prevented. Those who have availed themselves of our services really do appreciate having a single point of contact.

If we had our first year to do again, there are a few things we'd do differently. Allowing more time for cross-training the staff, both students and full-time employees, before the opening of school, would be a priority. Also, knowing what we know now, we would document procedures and formalize policies as much as possible before training begins. We would allow time for a single request tracking and communication mechanism to be put into place so requests wouldn't be mis-handled. Most of all, we would recruit more heavily among the students. Many of the ongoing stresses we have experienced can be traced back to being chronically short-handed.

From a personal perspective, the exhilaration and satisfaction of bringing together a new service area and improving service to the campus community has paid for the hard work and headaches many times over. Our greatest difficulty now is finding a way to raise the bar this much again for next year.

ISR's Technology and Media Desk is an asset to the Bucknell community, and we are very proud to have led its creation and first year of operation.