

Teamwork is the Heart of Technology

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ABSTRACT

IAT Services, the central Information Technology group at the University of Missouri-Columbia, operates computing sites in general access, classroom, and residence hall settings. The computing sites are supported by various methods including on-site Consultants, roaming Support Specialists, and a call-in Support Center designed specifically for supporting the sites. In the past year, various services have helped to provide better customer service and employee satisfaction. Student employee training, incentives, and evaluation programs have been very successful in improving customer support, while new methods of distributing software has been a success in administering the sites.

Site Operations and Site Productions function as a team to meet the needs of our internal and external customers.

Site Operations coordinates daily computing site operations as well as hiring, retention, and evaluation for approximately 150 student employees (of which 32 are senior level positions).

Site Coordinators supervise student employees who are hired with an emphasis on their ability to communicate with people in a customer service role. Senior level positions require not only excellence in customer service, but leadership skills and technical ability as well. Raise incentives and flexible schedules promote employee retention. Evaluations assure that employees meet performance requirements and mandatory guidelines.

A Training Coordinator maintains a well-rounded training program, serves as Activity Director, acts as a go-between for faculty members reserving technology classrooms, maintains the Web pages, and supervises the Support Center.

A Technology Coordinator supervises the technical crew who are responsible for advanced troubleshooting issues on all sites machines, printing issues in the sites, and departmental printing issues across campus.

All Coordinators maintain the Computing Sites Information System (CSIS) database that provides "one stop shopping" for our student employees. They can communicate, research hardware and software used in the sites, check availability of classroom sites, manage their timesheets, and much more from one online location.

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Site Productions creates a distributed software environment for more than 1000 machines and a hundred pieces of software, merging technologies such as Novell ZenWorks, Norton Ghost, Microsoft Active Directory, and Windows 2000 into a manageable computer support infrastructure for over 42 campus computing sites. The production crew for Netware, PC and Macintosh work together to maintain hardware and software stability and attempt to sustain the pace of technology.

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Organizational Impacts

Computer-supported collaborative work

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1. INTRODUCTION

In order to achieve a successful team, a lot of work and devotion was necessary from senior management down to student employees. It started with a broad vision of a new manager who had a goal of improving customer service by providing consistency of service. Her dedication, though challenged by budget concerns, remained unwavering to provide an environment where employees work together to find solutions. This teamwork methodology has proven successful, particularly in the area of customer service. It turns out that all employees, though their job duties may vary, working together toward a common goal (providing consistency of service) directly increased customer satisfaction. In short, we got our act together and it showed. For this technology team, teamwork is truly the heart of customer service.

2. THE HEART OF THE MATTER

Reorganization was unavoidable. Work began quickly to restructure the sites group.

Through a couple of trial-and-error phases, it was decided that two workgroups needed to be created. These two groups would work very closely within their group, but emphasis was placed on the two groups realizing that they were all still one team and must work together. Site Operations was created to take care of

“minding the store” and all that it entailed. This group consists of four full-time coordinators and approximately 150 student employees. Sites Production was created to handle the “back-end” technology. This group consists of three full-time technology coordinators challenged with providing a product to the Operations group.

Each workgroup was given the task of brainstorming, creating, and documenting the procedures and processes by which they wanted to operate. Though several variations have taken place, what is described in the following pages shows the end-results of the hard work and dedication of a very functional IAT Services Computing Sites team. Though technology is always evolving, and improvement is always necessary, this group has achieved teamwork. Consistency and excellent customer service are now a part of daily life.

3. SITE OPERATIONS

Site Operations coordinates daily computing sites operations as well as hiring, retention, and evaluation for approximately 150 student employees (of which 32 are senior level positions). We have four levels of student employees: Consultants, Support Specialists, Technical Support, and Coordinator Support.

Consultants hold entry-level positions, which oversee the basic operations of the IAT Services Computing Sites. Their duties include providing excellent customer service, assisting customers with a wide variety of questions ranging from software to site hours, escalating machine problems, and helping with special projects as they may arise. The ideal candidates would be friendly, willing to learn, and exhibit familiarity with a computer. Previous experience in customer service or computer support is desired. Consultants are required to work a minimum of 9 hours a week.

Support Specialists hold senior level positions, supervising customer service in the IAT Services Computing Sites. Their duties include providing assistance to Consultants on duty, training and mentoring Consultants, supervising site upkeep, reporting policy infractions, covering unassigned shifts, working in the Sites Support Center, helping customers, and collaborating with management to develop better policy in an effort to provide better service to our customers. In addition, Support Specialists handle technical problems concerning the machines and peripherals in the sites: rebuilding Windows 2000 and Macintosh machines, setting up new computers and printers, configuring desktop machines for use on the campus network, and troubleshooting everything from disks stuck in their drives to projector malfunctions. The ideal candidates would be innovative, flexible, friendly, and willing to learn new technologies as they are unveiled. Support Specialists are required to work a minimum of 18 hours a week.

The Technical Support crew holds senior level positions, maintaining all machines in the IAT Services Computing Sites. Their duties include advanced troubleshooting of PC, Macintosh, SGI, Unix, Linux, Netware, and PrintSmart issues. This crew is also responsible for maintaining several departmental printers across campus.

The Coordinator Support senior level positions provide assistance to the Site Coordinators including, but not limited to: scheduling shifts for approximately 150 employees, site maintenance,

mentoring Consultants and Support Specialists, and developing new ideas and procedures for the Sites team.

The sites team is definitely proactive in its effort to promote employee retention. We offer flexible schedules, continuing education opportunities, and raise incentives (just to name a few). The student employees are offered a wide range of scheduled hours from 1-½ hours up, with shifts ranging from 7:00 a.m. – 4:00 a.m. Their schedules are tracked in our employee database (CSIS), which allows them to manage their shifts (clock in/clock out, timesheets, even post shifts that they are unable to work thus allowing other student employees to pick up additional shifts). CSIS is also used as a valuable resource to employees as it contains e-mail capability, site information, hardware and software inventory, and various reporting features.

Site Operations also encompasses site Web pages and training. To encourage knowledgeable employees, both new hires and veterans are trained in customer service and technical troubleshooting. The training program utilizes some good old-fashioned hands-on techniques, web based training, guest speakers, custom courses, resources such as CSIS and Web pages, and Web based testing.

At the beginning of every semester, the veterans are trained on updates in the sites to keep them informed of new policies and new technologies being implemented. The new hires attend mandatory training, on a variety of topics:

- Consultants - Site Operations, PC, Macintosh, SGI, Peripherals, Adaptive Workstations, and WebCT.
- Support Specialists – more in-depth and technical training on Site Operations, PC, Macintosh, SGI, Networking, Peripherals, Support Center, Adaptive Workstations, and WebCT.

In addition to mandatory training, we encourage the student employees to take advantage of the continuing education opportunities that WBT modules provide. Suggested module topics include: Microsoft Office 2000 titles, Netscape, Unix, organizational behavior, Internet programs, and customer service soft skills. The senior level positions also have options such as networking essentials and technical support titles. Raise incentives are tied in with completion of 5 WBT modules per semester, granting them a 25-cent raise if successful.

To round out the training program, we make sure to provide the student employees with a wealth of resources: CSIS, informational web pages, print documentation, peer assistance, Support Center assistance, custom courses, and guest speakers.

All Coordinators work closely together to ensure that employees meet performance requirements and mandatory guidelines. The Training Coordinator provides the Site Coordinators with training attendance and course completion records. These records, in addition to employee performance reports, factor in during evaluations. Evaluations are performed every semester. An overall positive evaluation earns them a 25-cent raise, and as mentioned previously, successful completion of extracurricular training will earn them an additional 25-cent raise.

4. SITES PRODUCTION

Sites Production is comprised of three skilled professionals each responsible for the technology in his or her area of specialty

(Windows and Macintosh). The team as a whole is accountable for all of the technology employed to create a distributed computing environment in our general access, classroom, and residence hall computing sites.

The goal of Sites Production is to create an image for all of the computers in the campus computing sites – an image in the form of user login, software-makeup, and ease-of-use. It is their goal that a customer should be able to sit down at any one of the 1000+ machines in the computing sites, be it a machine running the Macintosh Operating System or Windows 2000, and be familiar with what he or she finds. In this vein a very specific set of procedures and policies have been put in place to help the Macintosh specialist and the Windows specialist maintain conformity between both desktops and platforms.

Using different technologies to accomplish similar goals, a desktop has been put in place that allows customers to easily find programs such as Microsoft Office, SPSS, Netscape, Minitab, Adobe Photoshop, Internet Explorer, and several other applications from platform-to-platform. As a rule, application packages have been kept the same on both platforms whenever it is possible. (If the Macintosh desktops use Microsoft Word as the word processor, the Windows machines don't use WordPerfect; because it is confusing to the customer.) Conformity is the goal.

The Macintosh Technology Coordinator uses several tools to create and maintain the consistency required of that goal. Chief among those tools is Mac Administrator, made by Hi-Resolution. Mac Administrator forces a customer to authenticate to all of the three hundred Mac OS machines using the campus Kerberos and Netware servers. This ensures that only registered students and active faculty or staff members are using University funded equipment and software.

In addition to providing a means of authenticating customers, Mac Administrator also provides the ability to distribute software remotely to the desktop. This is a crucial necessity in a large University; with computing sites spread throughout 42 rooms and faculty that are eager to jump aboard the technology bandwagon. Software packages must be able to be quickly and easily deployed to a number of machines without wasting valuable staff time installing the software on a machine-by-machine basis. Mac Administrator circumvents this vexing problem by enabling staff to distribute software packages over the network to each desktop without ever leaving the confines of his or her office.

In addition to using Mac Administrator for software deployment, Stairway's Assimilator is employed as a tool to rebuild the software image on the machines. Assimilator requires only a short series of steps to clone a Macintosh from a network-stored copy of the hard drive, allowing the use of trained student employees as the front-line of software support.

On the Windows side of technology, a PC Technology Coordinator manages and maintains several software images using Norton Ghost. These software images, which include Windows 2000 and the most used, largest applications such as Microsoft Office and AutoCAD, are stored on a Novell Netware Server and are deployed to the desktop by student employees, much in the same way Assimilator is used to rebuild Macintoshes.

Because the breadth and scope of faculty-requested software on the Windows platform is enormous, Novell ZenWorks has been in use for many years as a method of distributing and deploying software to the desktop. ZenWorks, which uses Novell Directory Services (NDS), can also be used for applying desktop policy; however, after a recent migration to Windows 2000, the PC Technology Coordinator replaced the policy application piece of ZenWorks with Microsoft's new Active Directory. Through Active Directory, security, desktop look, and network configurations can be controlled remotely.

To utilize both of these technologies requires the customer to log into the computer. While it is only required of the customer to use one ID and one password, it has been setup so that he or she is authenticated to two directory services: Active Directory and NDS. The accounts for both of these services are created upon enrollment or employment with the University, ensuring that only authorized individuals have access to the machine.

The Netware Technology Coordinator is responsible for maintaining the servers required to run Novell ZenWorks and Microsoft Active Directory. Helping tie together the two platforms, Novell is also used as the primary means of printing to the network printer in all of the campus computing sites.

Also linking the two platforms is a piece of technology by the Sassafras company called Keyserver. There are two components to Keyserver: a server component that runs as a service on a Windows 2000 Server and a client component that is launched at startup on both the Macintosh and Windows desktop. Keyserver is a program that is used to manage and enforce software licensing. The idea behind it is to spread out the number of licenses of a particular application to more machines than licenses owned. Upon launching of the program, the executable checks-in with the Keyserver to see if any licenses are available. (So, if the campus owned 200 copies of Microsoft Word, it can be installed on 1000 machines, but only 200 can be launched concurrently.) Keyserver is an exceptional tool for leveraging the high-costs of desktop software in the low-budget world of educational computing.

With the assistance of these technologies, some new, some old, the Technology Coordinators that make up Sites Production have the daunting task of creating a distributed computing environment – a world where desktops can be manipulated from across a campus – that bends to the needs of demanding faculty and computer driven students. Technology makes it possible, but dedication, training, and commitment to a common goal makes it a reality.

5. CONCLUSION

In conclusion, the Information and Access Technology (IAT) Services Computing Sites group functions together as a team to bridge the gap between technology in the sites and the customers who utilize it. Two workgroups support this team: Site Operations and Sites Production. Each group absorbs the stresses of new technologies, new policies and new employees.

Teamwork maintains a unified effort to help customers "get to the heart of technology".