

ipod, uPod, wePod...

Doubling Your Client Support and Strengthening Team Ties With Virtually No Extra Resources

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ABSTRACT

It's a Wednesday afternoon at the Princeton University OIT Help Desk phone room. An undergraduate calls in a panic. Their Windows 2000 laptop, which contains all their work for a paper due that Friday, is displaying a blue screen that reads: "Inaccessible Boot Device." Their comp sci roommate has already worked on the computer, but can't get it to boot.

What's the best way to handle a situation like this - one that needs immediate hands-on consulting? For Princeton, the answer was to provide an accessible open-lab environment that allowed students to work with consultants at their convenience.

The Help Desk at Princeton University has restructured their no-charge, in-person support room from a "By-Appointment Only" service to a "Walk-In Lab" service. This environment allows the client to back-up data to an iPod (to protect their intellectual property), be directly involved in the diagnosis and resolution of their computer problem, and walk away with a working computer. The open-lab has allowed us to double the clients we service, with no increase in assigned staff.

This paper will discuss how our restructuring increased services to the campus community, allowed us to empower our clients by instructing them on basic computer maintenance and usage, cross-train our staff members, and build stronger ties with other support teams on campus. We will also detail the tools (software and hardware) we use in the lab environment.

Categories & Subject Descriptors: K.8.3 Management/Maintenance.

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Keywords: Lab, Consulting.

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1. HISTORY

The Princeton University community has many support resources to turn to when facing a computer problem. Everyone has access to 24/5 phone and email support, an on-line searchable knowledge base, and hardware and software support groups on-campus. In addition to these resources, most faculty and staff are assigned an on-site support person, while all student dorms have at least one trained student hired as a residential computer consultant. However, there are still many software issues that for various reasons cannot be addressed by these avenues of support. For these cases a special consultation room was created, initially as an appointment-only service, staffed by one to two staff members. Any member of the university community could schedule an appointment via phone and be helped by a full time professional computer support person.

Due to increases in the amount of clients requiring assistance, and limitations encountered with the appointment-only system, it was decided the service needed to be restructured.

2. DRAWBACKS

One of first drawbacks that we experienced running an appointment-only service as demand for the service grew, was the limited amount of available time slots per day. If more clients needed help than the allotted number of slots, the system, and consultants, became backlogged. Alternatively, if a client couldn't make a scheduled appointment that slot went to waste.

Another frequent occurrence was exceeding the allotted time frame. If a client was initially scheduled for 30 minutes, but the issue escalated into needing 90 minutes, the client would leave the computer with the consultant and wait to be contacted when the job was complete. Meanwhile the next client would arrive and the consultant became backlogged.

Aside from this delaying the resolution of the issue, this "hands-off" approach also pulled the client out the process considerably, and often left them unawares as to what caused or contributed to the problem. It was not unusual to see the same person return several times with the same problem.

3. REDESIGN

These were some initial key points we wanted to address with the redesign:

- Empower the clients by involving them in the diagnosis and resolution of their problems
- Maximize available staff to handle current client load
- Reduce time needed for issue resolution

When we redesigned our consultation service it was initially envisioned as a classroom environment where a group of clients would be lead by a consultant on how to clean a virus from their machine, setup email, or re-install their operating system. However, this design was too rigid to allow for the potential variety of problems seen on a day-to-day and client-to-client basis. Instead it was decided to blend something of the style of the previous appointment-only service in with the classroom environment.

With the re-designed service the client no longer needs an appointment. Once the client arrives at the Lab they meet with a consultant to determine, or “triage,” their problem. Once this has been determined the consultant gives the client an estimate of time for resolution, and then begins to guide them through the process of resolving the issue.

Now, instead of a consultant working on the single client’s machine, they are able to work with multiple clients at a time, each with completely different issues. This has allowed us to jump from handling one to one ratio up to a one to nine ratio.

4. RESULTS

One of the biggest improvements we have had is in the turnaround time for client issue resolution. Since the Lab can only address software issues this is apparent when dealing with hardware issues, which must be escalated to Hardware Support. What might have taken a day or longer to resolve is now sometimes no more than a matter of hours. This ability to work “in real time” with other departments, such as Hardware Support, has helped us to work closer with colleges to resolve problems faster.

Allowing clients to have a hand in fixing their own computers has helped to broaden their understanding of the system they rely on. It has also helped them to manage and maintain it more efficiently by introducing them to good computing practices.

The appointment-only system could handle up to a maximum of 12 clients a day, split between one and half employees. This actually averaged out to about 8-10 per day, depending on the time of the academic year. The Lab service has had its attendance climb by 50-100%, and this only continues to increase, again, reflective of the academic calendar. The only additional staff has been the addition of a member of a phone consultant for a half-day.

5. TOOLS

Data recovery and virus removal are two of the most common issues to come to the Lab. Even though these are time-consuming

processes that can take over an hour, they are perfectly addressed in the one-consultant-to-many clients system.

Under the appointment-only system when data needed to be recovered or backed up, the consultant would sit with a client and copy the data as requested for them to one of two external firewire drives, or an assortment of USB disks. This process worked well for a one on one system, but as the client volume has increased, and one consultant now needs to work with multiple clients, we needed something that would be able to back up potentially gigs of data quickly, but be durable enough to withstand constant daily use. iPods were chosen because of the speed of the firewire connection, and the durable design. It was decided if an iPod could sustain repeated falls from a climbing wall, it should be able to sustain most of what the Lab put it through. Now the consultant can simply hand the client an iPod and in a few minutes any crucial data is safely stored. Even if the computer cannot boot we can still attempt data retrieval by booting the system with Winternals ERD Commander 2002 and copy data to the iPod.

By combining Winternals software with batch files and virus definitions we have been able to create a bootable CD that can scan both FAT and NTFS drives. This has streamlined the cleaning of a virus-infected machine to simply having the client boot from a CD and running two batch commands. The scan is still time intensive, but the consultant is free to assist other clients while it is continuing.

We have also built a consultant “tool belt” by consolidating all frequently used applications and programs into a CD we call the “Lab disk.” Each consultant has a copy which contains programs such as SpyBot or Ad-Aware for removing spyware; all the updated drivers for laptops sold through the Student Computer Initiative; common Windows patches such as Installer update, MSConfig for 2000, Baseline Analyzer for hardening the security settings; and also the installer for the University License of Norton Antivirus

6. TRAINING

The Lab service needs to be flexible enough that if the primary staff members were unable to operate it, the service can continue with temporary staff fill-ins, causing as little disruption to, or degradation of service offered to the clients.

We accomplished this by cross training full time staff and student staff from our phone support group. Although they might not work in the Lab on a regular basis, they now have the familiarity with the procedures and tools used that they can now cover when needed. While keeping the need for hiring extra personnel down this has helped free up the core staff members for several projects, including planning for an upcoming relocation of the Lab to the campus center, developing new troubleshooting tools, and creating a staff training manual for the Lab.