Reengineering Customer Assistance: the Good, the Bad, and the Ugly

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Abstract

In 1995, the Massachusetts Institute of Technology (MIT) initiated a process to reengineer many of its business functions. Information Systems (IS), the primary unit focused on general computing and networking at MIT, began to migrate toward becoming a process-oriented, customer-focused organization. Perhaps the most visible change for end-users at MIT is a reengineered customer assistance approach including self-help resources, customer training and online documentation, an I/T Partners program, and a consolidated Help Desk that combined four separate help desks into a single unit -- now receiving some 60-thousand contacts per year from a technically heterogeneous and demanding user community.

This presentation will be a candid overview of what IS has learned about customer assistance during two-plus years of reengineering. The presentation will have three parts:

- a summary of the history and current functions of IS's customer assistance approach;
- a focus on the activities of the Help Desk itself, including a review of technical tools, staff issues, and outreach efforts to customers; and,
- a demonstration of automated help tools.

In March, 1995, MIT announced the beginning of an initiative to transform its approach to the development, maintenance, and support of its information technology infrastructure. An important piece of this transformation was the reengineering of Information Systems (IS), the primary unit focused on general computing and networking at the Institute. One important objective of reengineering was for IS to move toward becoming a more process-oriented, customer-focused organization.

Six months later, IS emerged with a new structure to help reflect this transformation. By early 1996, the structure included three practices, six processes, and a competency group focused on the development of staff technical and behavioral competencies. Administration and Finance, responsible for support within IS, was viewed as an “enabling” process, as was the Competency Group; neither of these entities will be discussed further in this presentation.

The practices include Academic Computing; Office Computing; and Voice, Data, and Imaging Networking. In general, the purpose of practices is to focus on customers through advocacy, strategic planning, and realizing value from information technology. The director of each practice works closely with both customers and directors of processes.

The processes include Discovery, Delivery, Integration, Service, and Support. In general, the processes are viewed as the places where “work gets done for customers” -- sometimes within a single process, sometimes across processes, and sometimes in project teams composed of members from several processes and/or including customers. The focus of each process is as follows:

- **Discovery** -- Builds relationships with customers that ensure the provision of information technology solutions that support MIT’s mission and goals. Establishes shared work approaches and assignments to attempt to provide increased productivity and integration of services to customers.
- **Delivery** -- Realizes value as rapidly as possible by implementing new I/T products and services.
- **Integration** -- Investigates, recommends, and creates an effective technology infrastructure for MIT that is cohesive, responsive to changing needs, and maximizes the value of investments through the application of technology.
- **Service** -- Keeps I/T running by operating and maintaining I/T assets; promotes and capitalizes on opportunities to improve efficiency and customer service; and prepares to handle increased demands efficiently.
- **Support** -- Promotes the effective use of recommended products and services by the community; provides help to customers; and coordinates complex projects for customers.

IS consists of approximately 240 full-time equivalent professional staff and perhaps 200 part-time student staff. The Support Process currently has about 80 full-time equivalent
professional staff and over 100 part-time student staff. The Support Process has a variety of standing teams whose responsibilities are as follows:

- **Desktop Products:** Promotes the use of supported and recommended products and services for the desktop through product evaluations for desktop hardware, software, and peripherals; by maintenance and promotion of the list of recommended and supported products; and by making products easy to acquire through targeted site licenses, network distribution of software, and establishing relationships with vendors.

- **MCC/NECX Online:** The MIT Computer Connection Online, in partnership with the vendor NECX, provides pre-sales consulting and supports Web-based electronic purchase of hardware and software for MIT customers.

- **Training and Publications:** Promotes effective use of existing I/T products and services by educating customers, encouraging self-help, and empowering user groups, local experts and other I/T support providers through documents, newsletters, training classes, workshops, self-paced materials, brochures, awareness campaigns, and referrals to outside training resources.

- **5ESS Telephone Operators and Support:** Provides a central point of contact for individuals internal and external to MIT who are trying to contact members of the MIT community, and coordinates rapid response and resolution for customer inquiries and requests related to MIT's 5ESS and voice mail systems.

- **Departmental Computing Support:** Coordinates complex customer projects, including assisting departments in planning, selection, acquisition, installation, and ongoing use of desktop hardware, software and/or networking through use of requirements analyses, design services, cost/benefit assessments, written proposals, and project management.

- **Academic Computing Support:** Promotes the effective use of educational computing resources among faculty by providing assistance, information, third party software, access to electronic classrooms, and planning assistance for new academic computing facilities.

- **CWIS/Publishing Support:** Promotes the effective use of electronic publishing tools and campus-wide information systems, particularly the Web, by providing assistance, information, and access to third party software.

- **Adaptive Technology Support:** Provides technology-related assistance to all members of the MIT community who have disabilities, to the people who work with them, and to departments and groups. This includes information and assistance about adaptive technology solutions for classroom, laboratory, office, and home computing environments.
• **Athena/RCC Help:** Primarily to support students, this team provides a single point of contact for inquiries and requests from Athena and residential network users and coordinates rapid response and resolution through consulting, user accounts, and residential computing support functions.

• **I/T Help Desk:** Provides clear points of contact and timely response and resolution to both simple and complex computing problems for (primarily) faculty and staff seeking assistance in the use of MIT recommended and supported computing products. Customer inquiries and requests may be handled by telephone, electronically, and in person. Areas of expertise for this team include: MIT network, microcomputing hardware and software, MIT mainframe connectivity and applications, administrative applications and UNIX/VMS software library products.

The interplay among these Support Process teams, teams in other processes, and customers is far too complex to describe in a short written document. The presentation will include additional observations about the advantages and disadvantages of MIT’s reengineering approach, and then will transition to a specific focus on the Help Desk.

**Part II -- The Help Desk.**

The current customer assistance model relies heavily on the use of student staff to handle some 60-thousand customer contacts per year. Consequently, the number of people involved in the Help Desk is quite large: 16 professional staff and approximately 60 students. Since any one of these 75-80 staff could handle any given customer contact, it is important that all staff have some understanding of the complete range of supported core products -- as well as the idiosyncratic features of the MIT computing and networking environment. Keeping such a large staff knowledgeable about a core set of support issues is difficult but necessary in order to provide timely response to customer problems. Success also depends upon keeping the core set of supported items to a manageable size.

Given this model, certain products are more supportable than others. The Help Desk generally responds most authoritatively when most or all of the following conditions are met:

- the product is in wide-spread use;
- all Help Desk staff have been trained and have authority to use a particular product;
- training is available for customers;
- user documentation and online resources in the form of Web pages, FAQ's, and stock answers have been developed;
- the product operates fairly reliably within the MIT infrastructure;
- Integration, Delivery, or Service resources continue to be focused on maintaining and/or improving the product.

Beyond answering customer queries about recommended products, Help Desk activities include
• walk-in customer support;
• housecalls to offices on campus;
• VIP support;
• network site surveys;
• account administration and billing for remote dialup service;
• administration of ADSM, the file backup system;
• installation and billing for network drops;
• assistance in administering a UNIX software library;
• providing custom desktop solutions;
• ongoing hiring, training, and scheduling of student staff;
• continuous improvement of help desk tools including auto call distribution, the tracking database, server maintenance;
• involvement in other projects: IT Partners, SAP development, NT rollout, Data Warehouse, and development of other enterprise-wide applications;
• quasi-development work;
• serving as an IS testbed for new products.

Within this context, the remainder of the presentation will focus on:

1. describing the overall technical environment at MIT;
2. providing a few metrics -- what kind of questions are fielded, how frequently, and how successfully;
3. describing the environment for staff, including desktop tools and the Automatic Call Distribution system (ACD);
4. describing an ideal staff skill mix, and describing what Help Desk staff really do with their time;
5. staff training and professional development;
6. keeping people motivated -- morale-boosting techniques;
7. what to do when student staff vaporize at peak business periods;
8. using brief case studies to illustrate how things can work well and how things sometimes definitely do not go according to plan;
9. the importance of an overall Help Process, and an impending review of that process as a next step toward improvement.

The presentation is intended as a summary. The presenters are willing to participate in followup discussions (such as BoF sessions) with those who would like to explore particular aspects of help desk operation in depth. Presentation slides on particular aspects of the presentation are available upon request.

**Part III -- Demonstration of Help Tools.**

The final segment of the presentation will be a demonstration of a set of tools for use by IT staff and customers involved in the computing help process.
As currently defined, help tools consist of four major pieces: an Oracle database, a Web and an email interface to that Oracle database, and the Scopus GUI. These tools will have been in use for less than a month at the time of the CAUSE presentation, so there will be an opportunity to describe very current experience concerning file conversion and Help Desk procedural changes.