

INFORMATION TECHNOLOGY
REVIEW COMMITTEE

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A report submitted in fulfillment of the
charge issued by the Provost,

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Michigan Technological University

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Submitted by

Chairperson of the IT Review Committee

Date _____

EXECUTIVE SUMMARY

The Committee is submitting several recommendations designed to save the University money and provide staffing reorganizations to better serve the campus community. The goals of these recommendations are to provide information technology services to our users in a friendly, efficient, and economic manner and to provide a challenging, exciting, and rewarding work environment for our technology professionals. Some recommendations have the potential for financial savings, while other recommendations will not necessarily save money, but will provide better information technology service on campus. Some of the recommendations can be implemented in the very near future while others may require more long-term efforts and additional study.

Summary of Recommendations:

- Develop a university data center supported by the general fund.
- Restructure information technology support.
- Provide funding to implement and maintain technology functions in lecture halls and classrooms across the university.
- Establish information technology customer forums to facilitate communication across campus.
- Expense one-time IT costs, so as to not include these costs in on-going fees, to the extent possible.
- Consolidate volume printing and copying, large format plotting, and mail services into one unit.
- Aggregate the purchasing of computer hardware and software.

- Review university billing functions and associated technologies.
- Initiate the process of providing *seamless access* to basic computing across campus.
- Establish adequate desktop computing for all academic faculty and staff.
- Continue support of the Computer Advisory Committee and the Senate Computing Committee.

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Chapter 1

The Committee Charge

The Provost formed this committee in October of 2002 with the following charge, “The Information Technology Review Committee is charged to study the organizational structures pertaining to information technology. This includes a study of the functional organizations pertaining to information technology, funding and revenue sources, and the expenditures of those funds to support information technology functions on campus. Functional responsibilities of positions in our widespread information technology applications will be studied as will organizational structures relating to centralized versus decentralized delivery of information technology”.

Introduction

The committee met on a regular basis, usually twice per week, from October 2002, through March 2003. Additionally, two extended working sessions were held to consolidate the findings of the committee and generate recommendations. There was also a considerable amount of time invested outside of meetings gathering information and in discussions with information technology professionals across campus.

The committee began its work by assembling organizational charts, reports produced by MTU’s Information Technology (IT) department, reports by external consultants, financial records, reports by the Computer Advisory Committee and a host of other data pertaining to information technology. The departmental system administration staff was invited to submit comments to the committee. Unit managers from IT were also invited to meet with the committee

and discuss their organizational structure and responsibilities (see Acknowledgements).

The committee found there is a general lack of trust between individuals/departments and IT, which appears to be the result of a lack of communication. There is also a lack of understanding among departmental systems personnel and end users as to the charging mechanisms for Telcom functions (phones and network connections). The campus community does not seem to understand most of the obscure functions pertaining to IT units, and rumors abound that eventually become perpetuated as fact.

A timely document in the Chronicle of Higher Education; *10 Ways Colleges Can Cut IT Costs* (October 4, 2002) recommends ways to trim information technology costs on college campuses (See Supporting Documents, 14). A number of the 10 suggestions have already been implemented on the MTU campus, while other suggestions reinforce the findings of the Committee and help to validate our recommendations.

Chapter 2

RECOMMENDATION DETAILS

Develop a University Data Center Supported by General Fund

Advantages: Minimize server room infrastructures across campus, financial savings, personnel growth and development, greater purchasing leverage.

The rationale behind this recommendation is to eliminate redundant costs for building server room infrastructures and to realize additional savings by standardization of servers, storage, rack systems, uninterruptible power supplies (UPS), and environmental and access control systems.

Servers require environmentally controlled surroundings, which generally includes air conditioning, electrical power conditioning, UPS's, and emergency backup (generators) for power interruptions. The committee recommends that a central data center be established to house servers on campus that will provide the proper environment. This would alleviate the need for departments to build server rooms and allow for additional benefits such as ease of interconnecting servers, more efficient and secure backups, and enhanced data storage capabilities.

A university data center would also expand the university's disaster recovery (DR) plan, which allows the administrative systems to include more of the academic systems.

The committee understands that it is possible to institute a university data center without restructuring information technology support (following

recommendation). The drawback is additional levels of coordination will be required between department systems personnel and the current IT units.

The committee strongly advises creating a university data center in conjunction with restructuring information technology support, but the two can stand alone if necessary.

Restructure Information Technology Support

Advantages: Consistent and quality customer service and support, increased systems personnel enrichment, enhanced server support, recruitment and retention of information technology professionals.

The committee recommends a restructuring of information technology on campus. We are *not* recommending complete centralization of information technology services. Customer service and some research support should remain in the departments. Currently, each department or group of departments provides information technology professionals, server infrastructure, faculty/staff/student computing infrastructure and support, application support, security, and web services. Because of this, the user base is restricted to computing in only certain areas, having a direct negative impact on collaborative work. The committee has identified three areas where change would reduce the redundant service provided to campus: customer service, application services, and system administration services.

The committee recognizes the importance of having customer support personnel in close proximity to their users and who have a thorough understanding of their users needs. The majority of customer service requests should continue to be handled by departmental personnel. In the proposed structure, departmental server infrastructures and some system administration would be moved to a central server infrastructure housed in the new university data center. This would

reduce server room infrastructures in the departments and encourage collaborative work by the departmental system administrators.

Roughly 25% of the departments on campus have a single systems staff member and student employees to cover everything relative to computing, from servers to desktop support. A result of this scenario is the systems personnel have very little chance for focused work and professional development. These departmental personnel have to rely on professionals from other departments to cover for them when they are sick or need vacation time. This sometimes adds stress to the staff member needing time off, the staff member covering, and the users in the departments. There needs to be depth in system administration and user support on campus, allowing for much greater flexibility and coverage. MTU is currently expending more resources than they should and getting less for their efforts. This recommendation would pool current resources; focus personnel work, and provide a higher level of service to the users.

MTU has a number of very talented information technology professionals; we need to work on creating an environment where they can excel and develop professionally, thereby improving recruitment and increasing retention.

Major Areas of Reorganization

1. Customer Service and Support

The committee recognizes the importance of having support personnel who are close in proximity and have a good understanding of their customer's needs therefore we recommend this continue, but with a more organized support structure. The customer service units are responsible for frontline support, as well as maintaining the important communications between the user community and the technology units within the IT organization. This should be a priority, *insuring*

a customer-driven focus in IT. The customer service units will be key in the information technology restructuring.

2. Applications Services

Currently, departments deploy and configure the same core set of applications needed for basic access, resulting in a great deal of duplicated effort across campus. The ability for departments to successfully deploy services and applications varies from department to department based on systems personnel expertise and the amount of time allotted for this activity. The recommended Applications Services organization would evaluate applications based on customer input from the Customer Service and Support organizations and prepare applications for deployment. Academic, administrative, and university-wide applications would be this organization's responsibility.

2. System Administration Services

A System Administration organization will be created by consolidating expertise from departmental and IT systems personnel. This organization will be responsible for server hardware infrastructure, operating systems, patching and security. Initially, this group will provide expertise in Windows, Unix/Linux, and Mac OS. This group will work with the Customer Service and Support and Applications Services groups to effectively deploy systems to support users and their applications across campus.

Provide Funding to Implement and Maintain Technology Functions in Lecture Halls and Classrooms

Advantages: Ease of use for those teaching with technology, faculty support, and training.

The committee strongly supports the recommendations made in the Educational Technology Center (see Supporting Documents, 5) proposal. This recommendation addresses support of teaching, learning, development, and

support of faculty in the classroom. Faculty must be provided the tools needed for classroom instruction independent of classroom assignment. They should have easy access to their home directory and to software packages for instruction. This should be accomplished without requiring faculty to contact systems personnel for accommodations. Further delay in addressing the adoption of such an initiative will severely impact the quality of education at Michigan Tech.

Establish Information Technology Forums to Facilitate Communication

Advantages: Creates “customer driven” atmosphere, affect communication to IT organizations, promotes communication across campus.

The committee recommends creation and support of customer forums to be used as vehicles for communication. A two-way communication flow between IT and its customers must be maintained. These forums would be the place for customers to suggest new strategies *with* IT units, such as Telcom. For example, customers would have an opportunity to present ideas about wireless, private networks, VPN's, etc., and Telcom could express concerns, and discuss financial and security impacts.

From many discussions with various people on campus, it is extremely apparent that the campus community needs to be informed concerning Telcom's charging structures. The recommended forums could be the avenues in which this happens. The committee strongly recommends Telcom initiate more thorough, regularly scheduled communication with their end users.

The CAC and Senate Computing Committee must continue to function as communication forums for campus, and should have an active role in any restructuring.

Expense One-time IT Costs

Advantages: Decreased disparity among departments, separate ongoing fee-based charging from one-time costs.

The committee spent several meetings listening to presentations on how Telcom charges for the services they provide, including the charging structure for the new phone system. In this model, one-time proposed costs for facilities charges and project temporary staff were amortized over the life of the project. The committee recommends that one-time project costs be paid out of the General Fund and that departments be billed for only on-going costs on an equitable basis.

Consolidate Volume Printing, Copying, and Mailroom Services

Advantages: Financial savings, personnel consolidation, more efficient space allocation, consistent customer service and expectations, elimination of redundancy across campus, economical maintenance agreements.

The committee heard presentations describing the organizational structure and areas of responsibility from both, Gary Marcotte, Manager of Data Solutions, and Bill Tembreull, Director of Design and Publications Services. The committee also studied a report by a printing consultant, C. Clint Bolte, from the National Association for Printing Leadership, who was brought to campus in 2001 to study high volume printing and associated costs. At that time, both of these units were involved in high volume printing and had duplicate equipment and software. Data Solutions was supported by the general fund and provided volume printing on a *no-fee* basis, while Design and Publication Services operated on a *fee-for-service* basis. At the time it was reported that both departments also supported mailroom functions.

The committee recommends that the redundancies in high volume printing and mailroom services be eliminated, equipment consolidated, and high volume

printing be made available over the campus network to departments that require this service. Additional cost savings will result if the combined unit negotiates and coordinates bulk paper and printing supply purchases for all units on campus. The committee also recommends that the additional service of bulk CD pressing be added to this organization and be made available for all units on campus.

Design and Publication Services has submitted a proposal to the Budget Director for assuming centralized printing functions that outlines many more opportunities for efficiencies (See Supporting Documents, 15).

Aggregate Purchasing of Hardware and Software

Advantages: Large financial savings, efficiencies in deployment of hardware, ease of software auditing, formation of vendor partnerships.

The committee recognizes the campus community has diverse needs and requirements. Because of this it would be limiting to suggest standardizing on one hardware vendor. But, we also recognize that standard hardware allows for greater financial savings and enhanced support management. This recommendation suggests defining a base hardware standard that all desktop computers must meet to eliminate extensive problems associated with configuring software to run on a vast array of hardware.

The recommendation is to identify and negotiate bulk purchasing with preferred hardware and software vendors. This includes establishing licensing agreements that are more cost effective and manageable.

The campus community must also recognize that disposal and recycling of computing equipment has become a serious issue (see Supporting Documents, 1). Departments *must* consider these costs in their purchase plans. The committee recommends a system for disposal and recycling be developed.

Review University Billing Functions and Associated Technologies

Advantages: Reduce the number of different billing processes, financial savings, standard billing processes, simplification for customers.

Various units within IT bill for services, examples might be network charges, telephone charges, and Educational Technology Services (ETS) charges. Academic departments also have billing mechanisms in place to charge for such services as, system administration time for entrepreneurial activities, poster printing, use of technology in classrooms or lecture halls, etc. In addition, Auxiliary Enterprises maintains a separate billing system. The committee believes a thorough review of campus-wide billing operations could result in a more uniform system and perhaps identify areas of potential cost savings.

Initiate the Process of Providing *Seamless Access to Basic Computing Across Campus*

Advantages: Provide computing to non-declared majors, collaborative environment for students, ease file access

Decentralization of computing has allowed departments to provide the specialized software and hardware required by their customer base. A side effect of this is students only have access to computing on campus through their departmental facilities.

The committee recommends the university develop a strategy to provide *seamless* basic access to computing. This would allow students, faculty, and staff to have access to departmental computing resources, primarily home directories, from any lab or classroom on campus. Seamless access to computing resources will require a change in philosophy for student labs. As part of this initiative, the committee recommends developing an open computing area as part of the Center for Integrated Learning and Technology.

Establish Adequate Desktop Computing for all Academic Faculty and Staff

Advantages: Quality hardware and software, vendor partnerships, some standardization, reduce support issues of outdated hardware and software

Funding for faculty and staff computing in the academic units has been sporadic and inadequate. It is vitally important that departments receive consistent, adequate budget allocations to support the purchase, maintenance, and upgrading of computer hardware and software. The current funding model for student computing allows for maintenance of a quality, student computing infrastructure; faculty and staff computing must also be part of a system that guarantees similar quality.

Continue Support of the Computer Advisory Committee and Senate Computing Committee

Advantages: Provides a discussion forum for a broad spectrum of computing users

The current Computer Advisory Committee was re-chartered during a time when the university was grappling with the change from a mainframe-based, centralized computing system, to a decentralized workstation-based system. The CAC has always provided a public forum for discussion of computing and technology issues and it has served the campus community well. In 2002, the Senate Computing Committee (SCC) was established to address technology issues that have direct implications for research and instruction, and to provide a link between faculty and staff, and the technology community.

The changes that have taken place in computer hardware and software have forced the university to once again face the centralization versus decentralization issue head on. This time the debate centers on the benefits and issues of increased centralization. The CAC and SCC should play a vital role in helping the campus community understand the issues and make informed decisions.

Chapter 3

IMPLEMENTATION

The committee recommends that for each of the recommendations made herein, a champion be identified to serve as the lead person with the responsibility to bring about the recommended changes. Many of the changes are intertwined and dependent on other recommendations so that a cross functional group will also be necessary to share information about changes in one area that are likely to impact the work in other areas.

In an effort to draw in broad participation, the committee suggests the Provost solicit committee membership from across campus, including information technology professionals, both departmental and central, interested faculty and staff, and researchers. The committee further suggests each group formed choose a champion from its membership to serve as the lead person with the responsibility to bring about the recommended changes. It is important to emphasize that end user involvement is *paramount* in successfully implementing these changes.

Many of the changes are intertwined and dependent on other recommendations so that a cross functional group will also be necessary to share information about changes in one area, that are likely to impact the work in other areas.

The role of the CAC and the SCC will be critical in this process. The CAC has been effective in crafting policies and procedures as technology changes on campus and as new information technology challenges arise. The SCC has been effective in recognizing and communicating issues related to teaching and

technology. The CAC and SCC will continue to be avenues for the voice of the user to be heard. IT must work closely with these committees to ensure new initiatives are well understood by both groups and that everyone understands the financial implications.

Chapter 4

CONCLUSION

Summary

It is the intent of this committee that our recommendations serve as a catalyst for changes that will benefit the University through reduced costs, and better service, in a structure that provides greater satisfaction for both the professional staff and customers.

The committee sees these recommendations, as being flexible enough to allow for specialized technology needs without encouraging all departments to become miniature IT organizations.

The committee has assembled a list of recommendations for improved economies and efficiencies that come from recommendations made by people who took the time to let their concerns be known to the committee, and from research conducted by the committee. Various reports and plans, many from consultants and groups, were also considered in preparing the recommendations of this report.

These recommendations will require that there be some restructuring of information technology personnel. This restructuring will touch persons in IT as well as those in departments and will take an extended period of time to plan and implement.

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