

April 14, 2006

To: Gina Sapiro

Subj: CTIG Response to the Internal Campus Technology Review

Thank you for inviting us to participate in the internal campus technology review. This is CTIG's response. The external and internal reviews have been quite interesting processes that spurred some intense discussions within CTIG. Most members had already participated in one forum or another in the external review process. While we have individual reactions to that panel's conclusions (in broad terms we support it), CTIG has taken your direction, to let your four questions guide our report, to heart.

If our report raises any questions we would be happy to respond in whatever form you prefer.

Jurgen Patau

Chair, CTIG
Senior Information Processing Consultant
Office of the Vice Chancellor for
Administration

Rob Kohlhepp

Director of Academic Computing
College of Engineering

Beth Wiebusch

Secretary, CTIG
Director of Computing Services
School of Business

Rick Konopacki

Network Manager, and HIPAA Security
Coordinator
School of Medicine and Public Health

Tyler Schultz

Communications Director, CTIG
IT Manager
L&S Administration

Mitch Lundquist

Manager of Computer Operations
Library Technology Group
General Library

Bobby Burrow

Director of Information Technology
Facilities, Planning & Management

Yvonne Nagel

Senior Information Processing Consultant
Mathematics Department

Steve Hahn

Director, Office of Information Technology
The Graduate School

Jim Roberts

Director of Technical Services
Athletics

Karen Hanson

Assistant Registrar – Enrollment Services
Office of the Registrar

CTIG Response to the Provost's IT Internal Review Process

In the roughly 15 years since three organizations¹ were merged to form DoIT, UW-Madison campus information technology (IT) has changed dramatically. DoIT was conceived in an era of mainframe dominance, centralized systems, limited (albeit very useful) email, minimal use of PCs, standalone islands of departmental IT, only rudimentary use of the Internet, and no World Wide Web. Today's campus IT is much more about pervasive email, service delivery through the web, and systems and applications built locally that may have to interact efficiently with larger service-delivery 'clouds', which include the major central systems providing infrastructure services to campus, applications in other units, and off-campus services and applications.

Aggregate campus IT spending on all forms of IT (including personnel, administrative systems, academic support and research), across all campus IT units, is well over \$100 million per year. Yet we have no one on campus tasked with making sure these resources are used in an efficient and an effective manner. This should be the role of a CIO, despite the fact that a large proportion of those resources are not under the CIO's direct control. While the CIO will be the point-person in IT issues, senior campus leadership also must be involved in IT decisions because of the impact those decisions will have in their own divisions, and because those decisions affect how smoothly the entire university functions.

We recommend that the positions of CIO and director(s) of central IT be separated. We believe that combining them is simply too much for one person to do effectively. We also believe that there is an inevitable 'conflict of interest' when those positions are filled by one person, and that conflict degrades the authority and credibility of the CIO. The balance of this paper addresses the issues that flow from this recommendation, including organizational structure and duties and responsibilities, not only of the CIO and central IT, but also of other campus IT components. Divisional and departmental IT should remain independent of central management (they fill specific roles within their units), but should be included (1) in defining the IT components of campus strategic plans and related issues; (2) in developing the implementation plans; and (3) in implementing the resulting plans.

We are looking for a very special person as CIO. The CIO must:

- Understand the limits that campus culture imposes on what is possible;
- Understand that technology serves to further the goals of the university;
- Build sensible coalitions and engage in creating collaborations that involve central IT, as well as units not under the CIO's control;
- Understand that administrative, academic and research computing each have their own needs and sometimes have externally-imposed reasons for doing things the way they do;
- Communicate effectively;
- Provide visionary leadership in coordinating the creation and implementation of the IT component of the campus strategic plan, which becomes a technology roadmap for our campus.

The CIO fills a senior leadership role, and because Madison has key relationships with UW-System, with state government, and with various educational organizations, the CIO must be a technology leader and have effective political skills. This is not a management or technical position that dwells on accomplishing the nuts and bolts of getting projects done, although oversight of that process is a crucial part of the CIO's portfolio. This should be a very inviting **leadership** position if it is structured in a way that offers the possibility of success, and if campus buys in to the CIO's defined role. The three looming questions, as always, are: (1) can the

¹ Telecommunications; MACC (Madison Academic Computing Center), under the Dean of the Graduate School; and ADP (Administrative Data Processing), under the Vice Chancellor for Administration.

position be defined as one that can succeed; (2) will we be able to afford the ideal applicant; and (3) will the applicant pool be exhausted by searches at other institutions.

The CIO should have one or more reporting units. These units must have leaders who possess strong **management** and **communications** skills and who can direct the **technical** aspects of the units. Their leadership skills will be used to craft the implementation plans that carry out their responsibilities under the campus IT strategic plan.

We believe the PVL that will be written for the CIO will be one of the most important documents written by campus this year because of the choices that will have been made before it is written. Similarly, the person hired as CIO will be one of the most important hires on campus because of the new path he or she will chart for campus, UW-System and the state.

Campus has a number of strengths that must be retained. They include:

- 21st Century Network network management and deployment
- Creativity at the fringes of campus, outside central IT
- Significant IT resources located near the end user.
- Campus IT administrators at all levels understand the importance of IT on campus
- Significant aggregate IT expertise on campus

Notes: (1) Because there is no certainty that DoIT will remain as a discrete organization, we use the term “central IT” rather than “DoIT” in the following discussion. (2) The paragraph numbers below are a convenience feature only; they are not intended to function as a “to-do” list.

Discussion

1. CIO Overview This campus needs a CIO at a senior administrative level, quite possibly at the Vice Chancellor level. IT is too large, too decentralized, consumes too many resources, and is too important to continue to function as it has. It needs someone at a very senior level who can deal with senior campus leadership as a peer. And it needs someone who has credibility, impartiality, independence and objectivity.

2. Direct CIO Responsibilities The CIO must be directly responsible for a number of very important areas that must be directed and accomplished within the CIO’s office, not by central IT. These areas currently include such topics as security, standards (including technical and project-management), architecture, IT strategic planning, campus IT vision, and campus information policies. The CIO must have the staff and resources to accomplish and manage these activities. Most of these will require deep and meaningful consultation with all of campus.

3. Campus IT Governance/Oversight The CIO and central IT need an effective set of advisory and oversight groups to help guide their efforts. The members of all committees must understand that their allegiance on the committees must be to betterment of the university. The current ITC may need to have its structure, membership and duties altered to become even more effective. A CIO Council should be created to help set priorities and to function as a consultative body. Other bodies may be needed.

The CIO council should be created as a peer organization to the central IT's executive team. This team would include fully engaged leaders from the larger campus IT community and would help the CIO tap the departmental and divisional IT resources and expertise. This group would also participate in IT strategic planning, represent more constituencies and coordinate technology

across campus. The membership of this group is critical to the cross-campus participation in and acceptance of any strategic IT plan.

As to examples of other possible committees or councils, note that campus IT has three very broad constituencies: academic/instructional, research and administration. To help address their issues, each could have its own advocacy or issues group. These could be created either within the CIO council or as separate entities:

- **Academic and Instructional Computing** Faculty and instructional staff must have a greater role in allocating resources for academic computing. They must also be involved in defining academic and instructional computing and how it must be supported. The CIO should have an academic/instructional advisory council to help in dealing with such topics as infolabs (including location, access and provisioning), software for students (identifying and making available what students actually need), computer literacy, and instructional software and associated pedagogical issues, and other issues it may identify.
- **Research Computing** Research computing and support for research computing (two distinct issues) are both hard to define and change rapidly. If campus and researchers believe that there is a role for central IT in those areas, then a research computing advisory council should be formed specifically to define that role and nurture its evolution without blocking innovation as the research computing landscape changes. At a minimum, such a council could act as a bridge between the various research communities that already exist.
- **Administrative Computing** The CIO and central IT have a definite role in this area. However there are many issues that are more pronounced in this area than in others, such as service delivery standards, accountability, major projects, shadow systems, departmental needs, costs and many more. An administrative computing council would help define the issues and generally help advise the CIO and central IT as they deal with these topics.

4. CIO Non-campus Responsibilities The CIO has significant responsibilities to both UW-System and to the state for reasons outside the control of campus. The CIO must establish an effective way of dealing with outside constituencies in a way that does not slight the needs of the Madison campus, to which the CIO must owe primary allegiance. UW-Madison should continue to actively pursue collaborative relationships with UW-System and state agencies when efficient and effective service levels can be achieved; however, a CIO must be cognizant of the many differences between Madison and other groups in the areas of project scale and service expectations and needs.

5. Campus IT Plan Campus does not have an IT strategic plan whose creation involved broad campus input. Further, it is not clear if an IT strategic plan should be separate from the campus strategic plan. However what **is** clear is that because of IT's pervasive involvement in everything campus does, there must be either an IT component in the campus strategic plan, or a separate IT strategic plan that is specifically linked to the campus strategic plan. A crucial role of the CIO must be to oversee the creation of this plan in a way that there is a general buy-in to its objectives, and that the plan forms a comprehensible and concrete roadmap from which implementation teams can work.

6. Constituencies and Stakeholders Because of IT's pervasive campus presence, everyone is an IT stakeholder. But stakeholders align themselves into shifting issues-based constituencies that will often have competing needs. This will tax the political and communications skills of the CIO; however, how these competing needs are prioritized, how they are met and what choices are made (and how fair the process of making choices is perceived to be), will ultimately determine how effective the CIO is, and how smoothly campus IT works.

7. Central IT Definition Central IT should report to the CIO, who should also be responsible for its budget. Just what central IT (through the CIO's office) would be responsible for must be decided and must be accepted by campus in general. This may mean that central IT no longer functions as the 'court of last resort', that is, being willing to take on any and all work. Central IT needs a clear mission and clear operational guidelines. Campus must also have a discussion about what should be done centrally and what should be left to the divisions and departments.

8. Campus Choice Many campus units identify central IT as a consultancy or as a vendor. For many reasons this is a logical response to the specific business needs those units have. Further, units currently can "opt out" of many central initiatives, especially when they conflict with external mandates and requirements or when they constitute an undue (perhaps unfunded) burden. The CIO must accommodate to those realities, yet must work with and engage those units in other areas. Working to minimize these tendencies, especially through better planning, should be a long-term goal, but it should be done with a gentle touch to avoid unnecessary disruptions.

9. Core services Campus should implement the notion of "core" services. Unlike other services, "core" services would be paid for centrally, or by some sort of neutral chargeback mechanism. Candidate "core" services would be those that, for example, are used by some significant fraction of campus, or which are agreed to be mission-critical. Creating an actual list of core services will be an important and sensitive task. However, network services, certain email services (different constituencies have different needs), some administrative systems, authentication services, and possibly web services would be some candidates for being considered to be core services.

10. IT Implementation Groups The CIO must not view central IT as the sole IT implementation arm. Because IT implementations can be done at three levels – within individual units, through a collaborative consortium or by central IT – the CIO must seek to harness that diversity when projects are implemented. Campus-wide projects and core services should be implemented by the most logical collection of implementation arms. It should be noted that centrally-funded campus-wide projects do **not** have to be managed by central IT, nor do they have to be implemented solely by central IT.

11. Size of Central IT: Resources available to the CIO We note that divisional and departmental IT has about twice as many IT staff as does central IT. If the staff time in central IT that is devoted to non-Madison activities is taken into account, the departmental and divisional staff may outnumber central IT staff by closer to three to one. This 'shrinking campus IT resource' means it will be ever more important to work collaboratively with campus, and the CIO must pick and choose more carefully what the CIO and central IT agrees to do.

12. Central IT Internal Structure The future organization of central IT will have to be determined. Does it make sense to break it into constituency-based groups (academic, administrative, research)? What are the "administrative" constituencies? What does "research" want from central IT? Should some areas be removed from central IT and dispersed to the divisions to be closer to their clients and serve their business needs more effectively? Will any sort of break-up cause inefficiencies due to duplication of services? In these areas, we have no consensus.

13. Involving Fragmented Departmental/Divisional IT The CIO should not have direct control of divisional and departmental IT. However, to function effectively the CIO must incorporate the diversity of departmental IT into campus plans and must engage departmental IT in logical and cost-effective collaborations and planning. Since departmental IT does not speak with one voice on campus (nor will it ever), finding a way to do this will undoubtedly be a challenge. The more

harmoniously that the CIO and central IT and divisional and departmental IT work together, the more smoothly and efficiently campus IT will function. Campus and the CIO may want to consider urging divisions to have their own CIOs to help coordinate their own internal IT efforts with larger campus efforts.

14. Conflicting Needs of Different Service Providers The CIO must understand that there are fundamental differences between the needs of the business providers and the needs of the academic and research providers, must understand what they are, and must ensure that the specific needs of each are met. A primary difference is that the business providers must build solid systems that provide continuing and stable levels of service over long periods, while academic and research providers may change how they deliver services in each academic term or with each new research project.

15. Quality of Service and Consequences We expect that all services, especially campus wide projects and core services, will be delivered in a professional manner. However, they will be used by units that depend absolutely on them being provided on time, on budget and on target. Whatever the source of those services, for those rare times when that doesn't happen, there must be well-understood consequences. Whether they appear as parts of service contracts or in some other manner, consequences lend credibility to service delivery promises.

16. Metrics Campus should implement metrics to measure service delivery and quality of service. However it should be noted that metrics must be implemented properly, monitored carefully, and the results used appropriately to better the organization. Otherwise units might work to perform well on measurements rather than to deliver services well, and the metrics themselves may ask the wrong questions. Metrics should be developed with the active involvement of all appropriate campus organizations. An important question will be, who designs the metrics and oversees them and modifies them as necessary?

17. Restructuring Ripple Effects While the provost's IT internal review focuses on the CIO and central IT, it must be noted that the changes that come with a CIO and with a collaborative campus IT model will force some changes in how divisions and departments run their own affairs. Campus leadership must buy into this model and must effectively communicate their embracing of this model to their own divisions. Without a general campus buy-in, this model will face daunting challenges.

18. Funding Model The current campus and central IT funding model is, if not broken, at least seriously dysfunctional. All funding sources – including 101 money, SITI, shadow budget, other grants, cost-recovery, direct charges and any other resources – must be examined to see how they can be most efficiently invested in supporting campus IT missions. This doesn't have to mean that funding for central IT changes. But it does mean that decisions on how allocations are made and how funding is distributed must be examined afresh. Campus must also make sure all units understand the importance of their own IT and the value of funding it adequately.