

Memorandum

Date: April 14, 2008

To: Chancellor Harvey Perlman

From: David Brooks,  
Chair, Faculty Senate Computational Services & Facilities Committee

Subject: Final Report

The Faculty Senate Computational Services & Facilities Committee has continued to work on its principal issues, namely the appointment of a UNL Campus Chief Information Officer and substantial enhancement of UNL infrastructure for research involving computing. The report that our subcommittee made to you on February 27, 2008 was the unanimous view of the committee. We have reported to the Faculty Senate and to UNL campus administrators at the Vice Chancellor and Dean level. Generally, the need for effort in these areas has been universally accepted.

During the time since a subgroup of CS&F met with you, we have met with numerous other campus entities including most deans and vice chancellors. On the one hand, it is clear that the need for change is accepted. On the other, some failures will not be tolerated. For example, any effort to coordinate repair services must lead to an immediate enhancement of service. Any real or perceived diminution in desktop computer repair services will be met with great angst.

Our visits with campus administrators led us to this view: there is unanimity about the need for something like a CIO, but all are concerned with the details. The committee does share the need to weigh in on the issue of implementation of any reorganization, but this is an area in which we are far from unanimous. We have decided to present three different documents that relate to implementation for your consideration. These plans can be implemented separately or sequentially.

One plan is a job description for a UNL CIO. Everyone on CS&F recognized that the person selected for the CIO appointment would be key to the success of any substantive changes in this area. This same view emerged in nearly every one of our conversations with administrators. There are two issues. One is "the vision thing" wherein a CIO will be responsible for positioning UNL in terms of technology so as to enable best possible outcomes in teaching research, and service. There also is the management leadership dimension as we try to work through those issues connected with reallocating resources to achieve these

goals. One person expressed this using a metaphor from athletics: do we seek a position player or a star athlete?

A second plan is an enumeration of those services that faculty (and students) expect to have from UNL delivered to their desktops. Examination of this list illuminates the complexity of the issue. Few of these items are new; most are currently provided to at least some faculty. Some services are handled by colleges, some by IS, and some by both. A clear goal of any CIO will be to bring better definition to the backend end of this list, namely, how UNL provides this support.

The last plan is the most controversial of the three. It is an action plan for gathering all of the resources currently allocated to technology support at UNL under the auspices of the UNL CIO. It does so in a way that recognizes the history of the allocation and “grandfathers” that allocation. Evolution in technology being what it is, this plan would inevitably lead to complete resource consolidation. This plan will lead to the most rapid realization of financial gains to be enjoyed through collaboration. At the same time, it might lead to significant faculty and administrator resistance.

The committee offers these plans to provide insights about our discussions as to what we see are the issues facing UNL in the IS area.

## **Position description**

Chief Information Officer (CIO) or Chief Information Architect (CIA) or Chief Technology Officer (CTO)

The CIO provides leadership and management for campus infrastructure development, maintenance and networking; voice, video, and data communications; computing services; academic applications development; and information and computer security. This person will be responsible for the development for both short and long term information technology strategies including overall vision, enterprise architecture, vendor-contract management, and outsourcing. They will be responsible for the evaluation, planning, and implementation of effective, cost beneficial, leading edge technologies, solutions and knowledge environments for the general campus. Being able to effectively collaborate and communicate with the campus community on IT initiatives and issues is a critical aspect of this position. They will advise UNL on issues related to IT strategic planning, policies, and technology investments that support the universities strategic vision, goals and priorities.

The CIO must demonstrate knowledge of current information policies, practices, and technologies relevant in higher education recognizing the needs of academic and research computing. In addition, they must show experience in evaluating and promoting the adoption of new practices and technologies in developing appropriate IT solutions to new or emerging issues in higher education and in improving overall effectiveness of an IT program. Other essential attributes that the CIO must have are a demonstrated ability to work collaboratively, and to build consensus and coalitions with diverse groups and teams in order to implement technology solutions.

## **Desired Services to Desktop Inventory**

IS is expected to be a service provider. What is the range of services that might be expected? This is a list of services and/or facilities that an end-user might expect. It takes *no* account of the infrastructure, budget, or personnel required to support such a service. Several of these are quite difficult to specify but are listed for completeness. For example, library efforts are maintained by the library and involve bringing resources to desktops. Housing means that, as currently managed, IS is the ISP for housing.

## **Communications**

### **Telephony**

- Local
- Long distance US
- Long distance outside US
- VoIP (voice over IP)

### **eMail**

- Student
- Faculty/Staff

## **Desktop (Faculty)**

### **Computer**

- Hardware Upgrades
- Software
  - OS
  - Word Processing
  - Presentation Software
  - Databases
  - Disk Encryption
  - Antivirus
  - VPN
  - Spreadsheet
  - Software upgrades

### **IP address**

### **Repair**

### **Backup**

### **Training**

### **Ergonomics**

- Routine Consultations
- Special Needs Consultations and Support

## **Instruction**

### **Classroom**

- Computer
- SmartBoard
- Projector
  - Presentation Software
- Document Camera
- PRD (clicker)
- DVD
- CD-ROM

### **Course**

- Syllabus
- Course Management Systems/Learning Management Systems
- Course Readings
- Information
- Practice
  - Practice with feedback (EDU)
- Learning Assessment
  - EDU
  - ScanTron
- Media
  - Movies
  - DVD
  - Presentation
  - PodCast
    - Production
    - Delivery

### **Instructional Design**

- Asynchronous courses
- Synchronous courses
- Training

## **Business**

### **Student Information**

- Prospecting
- Admissions
- Financial Aid
- Course Inventory
- Registration
- Grades
- Degree Audit
- Housing
- Student Health

### **HR & Accounting**

- SAP
- FireFly
- PeopleAdmin

### **Purchasing**

- Orders
- Payments
- Bidding

### **Sales**

- Services
- Computer Sales
- Products (food)
- Tickets
- e-commerce

### **Employment**

- Record
- Salary
- Benefits

## **Library**

### **Electronic resources**

## **Research**

### **Intensive Computation**

#### **Grid computing**

#### **Statistical analysis**

- Data analysis
- Design and analysis consultation

#### **GIS**

#### **Instrumentation/Data collection**

**Housing – Student Access**  
**IS Research & Development (example)**  
System Initiatives  
Courseware

## **Budget Inventory**

A notion underpinning the overall proposal for collaborative cyberinfrastructure enhancement is that UNL has unnecessary duplication. We assume that the current state of affairs came about because various entities thought they needed computational services (technology services) that were not available through IS. These were acquired using budgets that were controlled elsewhere in the UNL consumer hierarchy (at the vice chancellor, college, department, individual faculty, or other level).

All CS&F committee members seem to believe that unnecessary duplication has resulted. Further, no entity has enough resources to make significant new investments.

If that is the case, then all such non-IS provided services/facilities can be described, and those persons connected with them identified in terms of budget and space.

To determine the extent of the total UNL technology investment, a UNL-wide inventory can be undertaken.

## **Inventory Proposal**

During the official annual planning meeting, every unit (each VC, dean, director, head, chair, and faculty member) provides the following:

- Enumeration of all of the expected services/facilities provided at that level.
- Identification of the personnel involved with providing those services
- Identification of all budget connected with these personnel and hardware/software acquisition over the past three years.

Since the budgets were controlled by the entities involved (to use academic parlance, it was "their" money), the philosophy of this approach is that they really didn't want space or hardware or people but, instead, some service. That is, they wanted to get a device fixed so that they could receive their e-mail, or have a Web page created so they could "advertise" their research. The goal of collaborative cyberinfrastructure enhancement becomes sustaining or enhancing these services.

## **Action Proposal**

The entire budget identified in the inventory is moved to IS. IS would bill projects for all soft money sources (meaning that soft money people still were on the IS budget). ALL of the expectations, reporting relationships, etc. would remain in place.

Every time either:

- a vacancy occurs, or
- a change in service is desired,

the original budget official enters into a new negotiation with the CIO (or vice versa).

To illustrate how this process might work, suppose the senior repair engineer at college X resigns. Repair is an important service, one that normally is provided locally. The CIO might wish to change the nature of the repair service. (Elsewhere in CS&F related materials we anticipate substantially enhanced collaboration to be in place with respect to sharing, covering during vacations, and training.) This might involve stronger collaboration, relocation, promotion, etc. The CIO would come to the cognizant dean and make the case. That dean can reject the CIO's proposal. The dean could launch the replacement search would be the case today thereby maintaining every attempt at one-for-one continuation of service. Should the dean accept the proposal, then nothing else need be done – since this already is within the CIO's budget. Middle ground might involve having the CIO manage the search, possibly determining who would receive the job offer.

### **Consequences**

The reason to adopt the inventory and action plan is that this approach gives UNL the fastest means of defining the scope of the problem and realizing both service enhancements and recovery of wasted resources. Although many universities similar to UNL have adopted organizations headed by a CIO, the initial state at UNL appears to be more decentralized than others were at the time reorganizations took place.

The reason not to do this is rooted in UNL history. The explanation for the current state of affairs is that the services provided are mission critical, the criticality was not realized by UNL administration in a timely fashion, and the various lower administrative entities used budgets under their control to provide those services. Although individual units do not have resources to move to the next levels of service, they are largely content with current service. Any action to re-capture budgets will be viewed as a threat to ongoing service. It also is clear that there is an excess of low skill personnel (such as Web masters) and middle managers.