January 18, 2007

Position Paper - From Repositioning to TIER
Next Generation Infrastructure Services for Education and Research

Repositioning IT Initiative

The Repositioning IT initiative began as a campus effort to reduce costs and complexity in campus infrastructure services, consolidating a large number of independent physical networks, email systems, server rooms and data centers into fewer regions. As part of a response to the Chancellor’s 2003 request to reduce costs, the initiative emphasized the consolidation of infrastructure services primarily (but not exclusively) in administrative areas.

Efforts under the Repositioning Initiative aligned in three parallel tracks to:

1) Consolidate network and email infrastructure services within Business and Administrative Services (largely completed) and Murphy Hall (in planning with some consolidation).

2) Bring a diverse and distributed IT and governance community together to begin planning the next generation of infrastructure services. As part of the planning enable “proof of concept” projects that would help involve both design and campus standards.

3) Organize expertise, management and technical, to provide support to individual unit’s that wanted to improve, upgrade, or trouble-shoot problems under existing structures. Provide incentives through support and funding to units to adopt evolving next generation standards and designs.

A great deal has been accomplished under Repositioning that is foundational to our strategy for moving forward. Table 1 summarizes the achievements made and to be completed in the next six months under Repositioning IT. While an emphasis to create appropriate savings and efficiencies within administrative areas is generally a desired outcome, the Repositioning IT initiative (inc. its name) does not adequately define or reflect the efforts involved in designing IT infrastructure services for current and future educational and research requirements.

TIER (Technology Infrastructure for Education and Research) Program

The Tier program, also outlined in Table 1, focuses on the future as we now move to design the next generation of infrastructure IT services core to UCLA’s primary mission of education and research. While savings and consolidation opportunities are important under TIER, they are not the driving forces. As we move out to the greater academic campus to support its primary mission the TIER will respond to the requirements for sustaining UCLA as a leader in education and research. Some of the characteristics of this response include:

- balance University “openness” to facilitate scholarly collaboration and security concerns.
- optimize performance while maintaining secure systems.
- reduce infrastructure equipment duplication by facilitating natural partnerships and shared management models.
- facilitate and support infrastructure consolidation where overlap, functional similarities, and other opportunities exist (as example, a potential Medical School, Public Health, Dentistry, and Nursing network integration).
- create higher and more consistent standards of system and service performance for faculty and students (i.e. researchers should expect high performing networks independent of affiliation or location).
Table 1: Repositioning Achievements and Proposed Actions for the TIER program

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<td>• Campus Enterprise Messaging:</td>
<td>• Continue to support opt-in migrations for those units that want to take advantage of an integrated calendar and messaging environment.</td>
<td>• Investigate and develop rational the next generation of messaging products for students and faculty(^1).</td>
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<td>• 9 - B&amp;AS units.</td>
<td>• Build out, as requirements demand, capability for 15,000 user accounts.</td>
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<td>• 2 - Academic units (Nursing and School of Arts and Architecture (Arts only), OIT-ATS, Summer Sessions, and the Library.</td>
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<td>• Over 3000 user accounts migrated, with an additional 2,400 planned by end of 2007.</td>
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<td>• Existing FTE capacity to support up to 10,000 accounts.</td>
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<td>• Two Murphy Hall unit migrations (APB and Chancellor’s Office) under Student Affairs Active Directory and Exchange Structure – forming UCLAnet.</td>
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<td>• 10 B&amp;AS unit networks consolidated.</td>
<td>• Complete B&amp;AS consolidation (General Services) making up core of administrative region.</td>
<td>• Explore “clusters of activity” patterns (Appendix 2) from which a strategy and plan can follow.</td>
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<td>• 3 Murphy Hall networks integrated under single management group (Student Affairs, Chancellor’s Office, and Academic Planning and Budget).</td>
<td>• Begin a discovery process with External Affairs for potential inclusion into the administrative network region.</td>
<td>• Develop proposal for academic network build-outs and/or upgrades based upon evolving design principles:</td>
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<td>• Expansion of campus wireless under CTS managed services.</td>
<td>• Begin phased approach for consolidating Murphy Hall networks (from nine) to one physical infrastructure, non-duplicative building network.</td>
<td>• Dentistry, Nursing, Public Health, Medicine</td>
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<td>• Created a “next generation” network design team.</td>
<td>• Complete research units consolidation (ORA, OPRS, EFM) into one non-duplicative building network (Kinross) that also includes Library units.</td>
<td>• Physics &amp; Astronomy</td>
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<td>• Broad (funded)</td>
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<td>• CNSI (funded)</td>
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<td>• Complete and obtain governance endorsement of “next TIER” campus network design and standards.</td>
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<td>• Complete and obtain governance endorsement of “next Tier” network management model.</td>
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\(^1\) From the Task force on email and calendaring solutions - Recommendation 4: Standardize and Consolidate Exchange servers in Administration and Recommendation 5: Offer Exchange services to campus via consolidated platform. Recommendation 6: Pilot an academically focused e-mail/calendar solution
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<td>• Created rational and acquired funding to increase security and improve environmental quality of current campus data center (Math Science).</td>
<td>• Complete funded improvements for the Math Science facility.</td>
<td>• Create rational and options for the campus to acquire increased data center space (see growth chart in Appendix 3 as one example – on the research side – for dedicated data center space).</td>
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<td>• Created rational and achieved agreement to create a UCLA data center; managing existing Math Science and planned CNSI data centers from a campus perspective.</td>
<td>• Acquire funding to build out the CNSI data center facility.</td>
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<td><strong>Security</strong></td>
<td>• Established Applied Security Task Force (ASTF) using campus-wide expertise.</td>
<td>• Evaluate IT security application products.</td>
<td>• Working with the “next TIER” network design team complete and obtain governance endorsement of a campus security design and standards.</td>
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<td>• Initiated eEye software project for campus vulnerability scanning.</td>
<td>• Begin coordinated campus-wide vulnerability scanning.</td>
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<td>• Created process and eEye orientation for campus network coordinators</td>
<td>• Explore media encryption.</td>
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<td><strong>Funding</strong></td>
<td>• Established a 2.1 million annual pool (as part of the TIF) dedicated to infrastructure projects (current funding primarily towards networks). This amount will be known as TIER funding.</td>
<td>• Create a potential funding distribution model that includes an option for regionalization as an organizing and management framework.</td>
<td>• Begin a discussion with all appropriate governance groups (leading with ITFOC) on the gaps between infrastructure requirements and funding.</td>
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<td>• Initiated a process for funding requests (Appendix 4).</td>
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2 From the ITPB February 2005 Meeting – “The Repositioning IT Initiative leaves open the possibility of centralization AND regionalization of ‘common good’ services. If it is determined that some ‘common good’ services should be provisioned through a set of regions, the TIF will be applicable, i.e. the TIF can be applied to centralized or regionalized service delivery models.”
Appendix 1a – Email consolidations to the Campus Microsoft Enterprise Messaging System

Consolidation of B&AS Email Systems under CTS management

1. Communications Technology Services (CTS)
2. Campus Human Resources (CHR)
3. Events Management
4. Transportation Services
5. Administrative Information Systems (AIS)
6. Corporate Financial Services
7. Housing Services
8. General Services / Facilities Management
9. GS: University Police Department (UCPD)

Consolidation non B&AS Email Systems under CTS

1. Office of Information Technology (including Academic Technology Services)
2. Library
3. Nursing
4. School of Arts and Architecture (Arts only)
5. Summer Sessions
6. Society & Genetics
7. CNSI Administration

Appendix 1b – Networking Consolidations

Consolidated B&AS networks under CTS managed network services

1. Campus Service Enterprises
2. Corporate Financial Services
3. Housing and Hospitality Services
4. Office of Residential Life
5. Office of Research Administration
6. Extramural Fund Management
7. Transportation Services
8. Early Childcare and Education
9. CNSI Administration
10. Residential Networking - 3 unique BB connections plus a distinct "service" BB connection, servicing approximately 11,000 residents

Consolidated non B&AS networks under CTS managed network services

1. Student Affairs - Bradley Center
2. CTS Departmental Networking
3. Central Ticket Office
4. Faculty Center
5. Campus Human Resources
Appendix 1c – CTS managed campus wireless

1. University Guest House - wired plus full wireless coverage
2. Weyburn Terrace Graduate Housing
3. Levering Building - Faculty Housing
4. Hilgard Houses - Off Campus Undergraduate Housing
5. On Campus Housing - Undergraduate Residential Housing
6. Conference, Catering, and Meeting Rooms
7. Charles E Young Research Library
8. Powell Library
9. Southern Regional Library Facility
10. Public Policy – Arts Library
11. Young Hall – Chemistry Library
12. Geology Building – Geology Library
13. Schoenberg Hall – Music Library
14. CHS/Factor Building – BioMed Library
15. CSB1
16. 1001 Gayley
17. Wilshire Center (partial coverage)
18. Broad Art Center and Wight wing
19. Humanities Building
20. Campbell Hall
21. Bunche Hall
22. Ackerman Union
23. Kerckhoff Hall
24. North Campus Student Center
25. Neuroscience Research Building
26. James West Center - Central Ticket Office Only
27. Royce Hall (partial coverage)
28. MacGowan Hall
29. 700 Westwood Plaza (Med. Student Lounge)
30. CHS – Dental Student Lounge
31. School of Public Health (CHS)
32. Helios Building - School of Public Health
33. Strathmore Building
34. Faculty Center
Work in Progress - conceptual diagram
“Clusters of activity” (geographic, management, and function)
Appendix 3 – Using growth in computational research clusters as one indicator for the need to plan for additional campus data center space
Appendix 4 – TIER Fund User Principles and Process

WORKING DOCUMENT

Technology infrastructure for Education and Research (Tier)
TIER Fund Use Principles and Process
12/1/06

The ITFOC met to provide initial input on the following question:

“What are the considerations that should guide the most effective use of the TIER funds portion of the TIF for campus infrastructure implementation proposals that fall within TIER project objectives”

Based on the ITFOC input, the following are principles/process statements about how Next Generation Infrastructure for research and education (TIER) funds would be used:

TIER Fund Use Principles/Process

1. The Chancellor has assigned a portion of the Technology Infrastructure Fee (TIF), now being collected, to the TIER Project. The EVC and the Office of Finance and Budget have authority over the fund. Approximately $2.1 million per year is collected. The Office of Finance and Budget will determine the precise amount available for TIER for a given FY.

2. TIER funds will be used to further the goals of the TIER project and the criteria and models (when completed) for the next generation campus IT infrastructure for network, email, data center, and security resources and services.

3. TIER funds should be used to compliment an existing funding base. The corollary is that TIER funds should not be used as replacement funds for lost or reassigned funds in a capital project (as an example). Building upon and existing base, TIER funds should be used to position the project to align with the next generation network criteria and eventual architecture.

4. The allocation of TIER funds should be used as an incentive for units to move towards a campus infrastructure architecture that optimizes for both local and campus needs. The allocation of funds should, however, respect and accommodate the fact that individual units have needs that may be different than the needs of other units. OIT will work with departments to achieve balance for both institutional and local needs.

5. It is understood that the criteria and models for TIER are not deterministic but need to evolve and/or be developed as experiences build. In the short term, the TIER project director along with campus technical teams will develop, refine, evolve and publish criteria to which proposals must adhere. Ultimately, these teams will develop the next generation campus infrastructure model and strategies for implementation.

6. The evolving criteria and models will be vetted through the IT governance process, i.e. CSG, CITI, ITPB and other stakeholders with orchestration and oversight through the ITFOC.

7. The call letter for networking projects should come from the Chancellor’s annual strategic planning and budget process.

8. Funding proposals and needs from individual units will be assimilated by OIT into a FY TIER spending plan. Accordingly, proposals will have to demonstrate that any proposed expenditure is aligned to the goals of the TIER project and align with the next generation network criteria and model (when completed). In developing a FY proposal OIT will consult with the departments involved. When opportunities or urgent requirements are present, OIT will accommodate proposals outside of the FY plan. Funding proposals must also align with the goals of the TIER project and align with the next generation campus network criteria and model (when completed).
9. FY plans, and when appropriate proposals outside the FY plan, will be reviewed by the ITFOC with comments to the ITPB. Comments from the ITPB will be forwarded to the EVC and the Office of Finance and Budget for consideration. OIT will have the review and endorsement authority of a given FY plan or proposals outside the FY plan. The Office of Finance and Budget will make final decision and release TIER funding.

For FY 06/07 the early criteria for the next generation network model for which proposals for funding must align:

1. Funding must be consistent with the provision of a non-duplicative and/or non-overlapping networking service within a given geographical space. (i.e. TIER funds will not be used to install multiple, overlapping networks in a building when a simpler network structure would suffice).

2. Any department/group for which funding is being provided must commit to being part of the next generation network (NGN) model as it becomes established under the assumption that the unit is not negatively impacted.

3. A network design and configuration must be vetted by the NGN working group and the Campus Network Architect for technical compliance with the expected NGN model (this is an evolving process; standards that are approved in the beginning may not be the final standards six to twelve months later).

4. Any unit that has campus network responsibility should have appropriate visibility into campus networks.

5. Adherence of networks to evolving security standards should be auditable by the appropriate security office - currently that responsibility is with the OIT security Officer and the Applied security Task Force.

6. All network build-outs or upgrades, independent of funding source, should adhere to the campus network model.

7. Network equipment purchased through TIER funds, should, where appropriate, become available for redistribution. These exchanges should be facilitated to ensure that a local unit is not disadvantaged and that benefits of the exchange accrue to local units and the