

Information Technology services at Cal State Northridge have become valuable, if not critical, to most operational units at Cal State Northridge. **The five divisions of the university collectively spend over \$27M annually on information technology;** of this, the IT division spends approximately \$10M.

As we respond to shrinking budgets and rising costs, we need to identify opportunities for information technology units throughout the institution to evaluate, change, eliminate or reprioritize our technology environment and resources to produce technology cost savings and efficiencies.

This document is an initial plan to be used for consultation and seek input from some technology staff and governance committees. Next steps to engage further consultation are outlined in the plan at the end of this document.

Key principles to use as we identify technology cost savings and efficiencies are:

- Minimize duplication while striving to retain quality services.
- Evaluate which services should be provided centrally as an “enterprise” campus-wide service versus those services that are best provided locally.
- Review technology services to identify those that align with university priorities and those which should be reduced or eliminated.

Additionally, the advent of **newer technologies** such as server and desktop virtualization, cloud computing, remote desktop support, online administrative services, service-oriented architecture and mobile computing services enable us to consider options for technology efficiencies and cost savings not previously possible.

The document outlines savings and efficiencies grouped into categories (classrooms and labs, servers, desktop computer management, etc.) each with a chart showing some examples of potential technology cost savings, technology efficiencies and staffing efficiencies.

Other opportunities for technology cost savings and efficiencies may exist. This document is a framework to begin discussing these strategies. Comments and additional ideas are welcome.

Technology Service Prioritization

Prioritizing our current university-wide technology services provides an opportunity to identify duplication of technologies, to examine technologies that have become outdated, and to retire technologies that no longer provide essential services to the university.

Potential Campus-wide Technology Cost Savings and Efficiencies
 Draft for Discussion Purposes - October 2009

Category	Potential Technology Cost Savings	Potential Technology Efficiencies (Y/N)	Potential Staffing Efficiencies (Y/N)
Retire underutilized technologies - e.g CSUN modem pools	\$	Y	Y
Retire legacy applications with small number of users - e.g. Meeting Maker calendaring.	\$	Y	Y
Centralize payment of phone bills - eliminate the phone chargeback application maintenance costs and minimize staff time required to process the phone charge allocation	\$	Y	Y
Discontinue duplicative technologies	\$	Y	Y
WebCT and Blackboard LMS to a single Moodle LMS	\$\$	Y	Y

Shared Technology Services

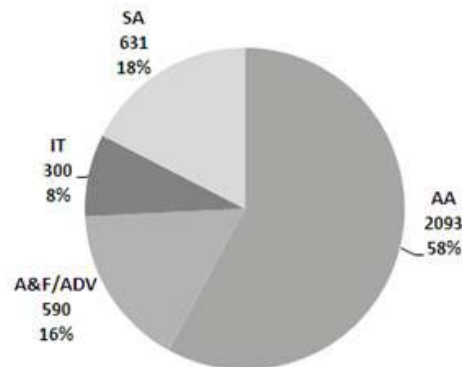
A practical cost saving strategy is to share technology services with other CSU campuses. The ITAC (system-wide CIO group) has been working on several multi-campus initiatives, known as Synergy projects. The initial six such Synergy projects are listed below. Cal State Northridge is interested in participating in all projects; we are actively participating in the Information Security and Virtual Computer Lab projects.

Category	Potential Technology Cost Savings	Potential Technology Efficiencies (Y/N)	Potential Staffing Efficiencies (Y/N)
Shared Information Security services - to share information security knowledge and services with other participating campuses.	\$\$	Y	Y
Shared network management services- to share network management knowledge and services with other participating campuses.	\$\$	Y	Y
Shared LMS hosting for Moodle	\$\$	Y	Y
Shared purchasing leverage - expand system-wide CSU license negotiations.	\$\$	N	N
Shared virtual computer labs	\$\$	Y	Y
Shared data center and private CSU cloud	\$\$	Y	Y

Desktop Computer Management

The number of university-owned desktop computers for faculty and staff totals over 3,600 with over 1,800 printers in the Academic Affairs division alone. In addition, the university supports over 5,000 computers in labs and classrooms and 300 data projectors.

Figure 1: Number of Desktop Computers for Faculty and Staff by Division



Source: 2008 EDUCAUSE Core Data

Efficiencies and costs savings can be gained by using common standards, practices and computer management technologies, by avoiding duplicate evaluation and implementation of new tools and software versions, and by deploying updates and new technologies consistently. A consistent approach to power management, printing, hardware procurement and software licensing will produce cost savings.

Category	Potential Technology Cost Savings	Potential Technology Efficiencies (Y/N)	Potential Staffing Efficiencies (Y/N)
Adopt standard desktop computer hardware configurations and contract pricing	\$\$	Y	Y
Consistently implement Active Directory university-wide to manage desktop configuration	\$	Y	Y
Consistently use IT Help Ticket system (EB Suite)	\$	Y	Y
Consistently use desktop application distribution and patch management tools	\$	Y	Y
Implement desktop power management	\$\$	Y	N
Change quantity of printing and printing methods			
Reduce quantity of printing in departments and print duplex to minimize associated paper and ink costs	\$	N	N
Use photocopiers for printing instead of stand-alone printers. Reduce the number of stand-alone printers with ink cartridge costs	\$	Y	Y
Reduce or eliminate student printing	\$	Y	Y

Smart Classrooms and Computer Labs -- Thinner and Virtual

Implementing “thin” desktop workstations in smart classrooms and labs will decrease the computer refresh cycle, provide energy savings and optimize local college technician support time in the classrooms and labs. Some thin client computer cost savings will be offset by increased server infrastructure and staff time to support the server based technology, but the overall cost savings and efficiencies gained is still anticipated to be greater.

Implementing a virtual lab environment where the software is available for checkout via the Internet by a student or faculty member is another potential cost saving strategy. A student could potentially access SPSS or other software available on the Virtual Computer Lab server for the duration of their virtual lab time, thus potentially reducing the number of physical labs needed. This model would reduce costs by eliminating the desktop computer in that lab and the technical support needed for that lab. It would also free up the lab physical space for other purposes while increasing access to lab resources for students.

Other classroom cost savings strategies include implementing one telephone support number for faculty to call from the classrooms which will reduce the number of staff required to provide first level support.

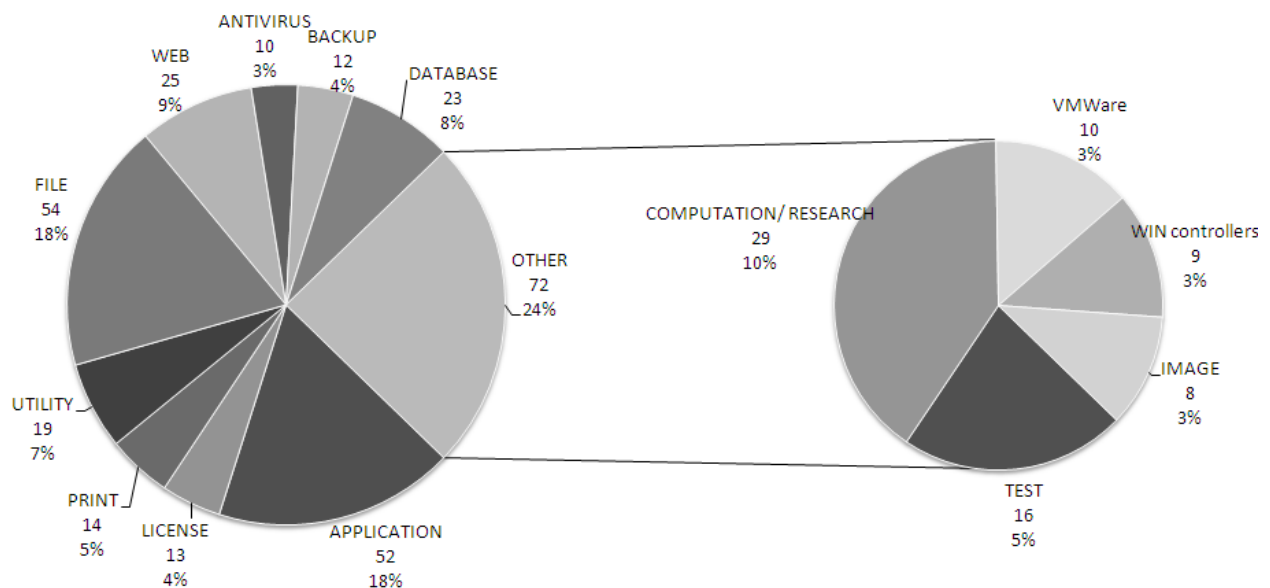
Category	Potential Technology Cost Savings	Potential Technology Efficiencies (Y/N)	Potential Staffing Efficiencies (Y/N)
Implement thin client use in smart classrooms and in some labs	\$	Y	Y
Implement some virtual computer labs	\$\$	Y	Y
Implement single phone number for technology support in smart classrooms	\$	Y	Y

Consolidating Servers

Servers run software applications, store data files, host websites, manage desktop computers and more. The IT division currently houses over 200 physical servers in two IT data centers. A server inventory conducted earlier this year identified an additional 230 servers housed across campus which are used to serve many different functions – and in some cases are a duplication of services also provided centrally - see Figure 2 below.

Consolidation of servers where duplication of services exist (Anti-virus, Domain Controllers, web servers, file servers) will ensure better use of university resources and enable the campus to avoid additional acquisition costs, reduce our power utilization and minimize duplication of staff effort.

Figure 2: Servers in Non- IT Divisions by Purpose



Source: CSUN 2009 Non-IT Server Inventory

Server virtualization is a technology that enables multiple applications to share one physical server, thus reducing the number of individual servers that need to be purchased, set-up, maintained, replaced and powered. While CSUN has started the virtualization process (31% IT's servers are already virtual), we could accelerate plans to implement server virtualization more broadly which could yield significant cost savings for the university. Virtualization is a strategy that yields cost reductions while maintaining levels of service.

Category	Potential Technology Cost Savings	Potential Technology Efficiencies (Y/N)	Potential Staffing Efficiencies (Y/N)
Consolidate web servers using enterprise web infrastructure	\$	Y	Y
Consolidate anti-virus servers	\$	Y	Y
Consolidate Windows Domain Controllers	\$	Y	Y
Consolidate file servers	\$	Y	Y
Virtualize servers	\$\$\$	Y	Y

Leveraging Software Licensing and Procurement

Cal State Northridge spent approximately \$1.8 million on software acquisitions, licensing and maintenance last year. While some CSU system-wide and campus software negotiations have produced leveraged cost savings, there is not a consistent software procurement and software asset tracking strategy on campus.

We should review purchasing processes and existing contracts to eliminate duplication and to maximize the impact of consolidated services. New system-wide licensing and maintenance agreements will be negotiated through the Synergy project (described above) and should be used at Cal State Northridge where possible, as well as shared purchases with other CSU campuses. Additional strategies could include evaluating and standardizing software options which may have overlapping functionality (such as SPSS and SAS).

We can also consider adopting free or low cost software (e.g., open source) where appropriate. The recent migrations to Moodle LMS and Gmail for students are recent examples of this approach. Consideration of open source desktop software for faculty such as ODF could also be considered.

Category	Potential Technology Cost Savings	Potential Technology Efficiencies (Y/N)	Potential Staffing Efficiencies (Y/N)
Leverage shared purchases with other CSU campuses	\$	N	N
Negotiate additional university-wide site licenses and bulk licensing	\$	N	N
Reduce or eliminate software with overlapping functionality	\$	N	Y
Adopt free or low cost software (open source) alternatives	\$\$	N	N

Streamlining Applications and Processes

Cal State Northridge plans to continue to expand self-service through web portals and continue to streamline administrative processes to decrease demand on staff for routine tasks. While many SOLAR self-serve features are already available via the *myNorthridge* portal, we will continue to migrate student services or business processes online to reduce costs and to provide enhanced service.

The next version of the Student Administration system will include new advising features that could allow us to further evolve our use of SOLAR and DARS. These changes may produce staff and technology efficiencies that could ultimately reduce costs. Future new functionality would be simpler to implement -- allowing new online web service options for faculty and students to be provided sooner.

An inventory of all campus SOLAR custom modifications was conducted earlier this year. Some modifications have already been identified as obsolete and will be removed from the system. Other modifications can be replaced once we upgrade to the newest student release because the functionality is now included with the delivered software from the vendor. A third category of modification exists - one that is needed to meet a unique Cal State Northridge need. For the modifications that meet this criteria, we plan to re-develop them using new application development approaches that are simpler (and therefore more cost effective) to maintain.

The Auxiliary units currently use a different financial system from the rest of the campus. To avoid duplication of technology hardware and maintenance, and to minimize staff time troubleshooting and performing duplicate upgrades, we could consider migrating the Auxiliary Financials system to CMS baseline so that two separate Finance versions will no longer need to be maintained.

Category	Potential Technology Cost Savings	Potential Technology Efficiencies (Y/N)	Potential Staffing Efficiencies (Y/N)
Increase self-service through web portals	\$	Y	Y
SOLAR modification reductions and improvements	\$	Y	Y
Move Auxiliary financial system to SOLAR baseline version	\$	Y	Y
Upgrade to latest student administration system version	\$	Y	Y

Technology Staffing

Managing information technology at Cal State Northridge is a shared responsibility between the IT division and departmental IT staffs. The IT division represents approximately 50% of the total headcount of IT staff currently on campus.

The technology cost savings and efficiency opportunities outlined above (server consolidation, server virtualization, desktop thin and virtual computer environments) are likely to change the way we provide support services. Fewer technical staff would be needed to support the thin client classrooms and labs, even fewer for the virtual lab environment. However, more staff would be needed for the server and software support for these environments. These changes could challenge us to re-think which services are most appropriate to be managed by the central IT division and which services are most important to provide locally. A hybrid mix of both may prove best in some environments.

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Every effort should be made to minimize duplicate IT services. For example, we could consider routing all “first level” technology support calls to a single IT Help Center number to enable local college technicians to focus on other tasks and provide the level-two support. Using remote support tools for the resolution of technical problems can potentially maintain high quality support levels.

Category	Potential Technology Cost Savings	Potential Technology Efficiencies (Y/N)	Potential Staffing Efficiencies (Y/N)
Help Center as first level support (all calls)	\$	N	Y
Use remote support tools to resolve technical problems	\$	Y	Y
Expand self help for users	\$	Y	Y

Next Steps

This document outlines some proposed technology cost savings measures and some technology efficiencies. While not all technology efficiencies will show immediate cost savings, they position the institution to streamline some business process, enable a more consistent technology environment, avoid duplication of effort and more effectively leverage the university technology resources.

The next steps in our technology planning process, outlined in Figure 3 below, include consultation with numerous campus governance groups for feedback on additional cost savings or technology efficiency strategies, establishing priorities around which services to reduce or eliminate and where to alter service levels, and to discuss the impact of making the proposed technology efficiency changes. Prior to December 1st, we will also develop more precise cost savings estimates and an implementation project plan.

Figure 3: Information Technology Budget Planning Timeline

Information Technology Budget Planning Timeline			October					November				
Activity	Resp.	1	5	12	19	26	2	9	16	23	30	
ATC technology budget discussion	Hilary/David	2						10				
Provost's Council technology budget discussion	Hilary		6				3					
ARC technology budget discussion	Hilary/Ben				20				17			
SASC technology budget discussion	Hilary			14								
Administrative division technology budget discussion	Hilary/Ben											
ACAT technology budget discussion	Hilary/David				20							
ETSC technology budget discussion	Hilary					29				24		
TISC technology budget discussion	Hilary/Ben				20				17			
UPBG technology budget discussion	Ben							13				
Campus Technology 3-year budget plan due December 1	Hilary											

 Consultation