I. 2015-2016 Priorities Confirmation

II. Zero-Based Budget - Growth and Retirement Opportunities in ITS Networking and Applications (William Green, Julienne VanDerZiel)

III. Shared Services - Update (Jamie Southerland)

IV. ASMP - Update (Renee Wallace)

V. Faculty and Staff Bandwidth Allocation – Update (William Green)

V. Committee Updates
Oversee and Implement the Technical Architecture for the Administrative Systems Modernization Program
Implement the architecture for and oversee the creation and translation of campus business processes into the new Workday system. Workday, a cloud-based Software as a Service (SaaS) solution for human resources, payroll, finance and procurement. This selection was made by a large number of stakeholders across the University. The Administrative Systems Modernization Program (ASMP 2.0) started in the summer of 2014.

Enhance the Research Computing Infrastructure
Partner with TACC and UT System to enhance and increase the research computing infrastructure.

Build Digital Asset Management Core System
Build the Digital Asset Management System in the open-source Islandora environment. Develop funding, resource, and contracting structure for the new digital asset management system, which will be hosted in partnership with UT Libraries.

Determine the Building Security System Replacement Approach
A funding strategy for the on-going operation of the Building Access Control System (BACS) was developed and approved through IT governance. Next year, we will continue to remove BACS alarm points where no longer needed, evaluate building security system options, and implement the funding strategy.

IT Architecture and Infrastructure Project Oversight
Several ongoing projects will receive oversight from the Architecture and Infrastructure governance committee including the implementation of the technical architecture for the Administrative Modernization Systems Program, implementation of ServiceNow, SailPoint, managed Drupal, and Office 365 improvements.

Campus Network Enhancements
Increase the network speed to 100Gbps. Develop evolutionary network enhancements including the new data center network architecture, wired auto-port configuration/802.1x, and Network Address Translation changes (wired for units/wireless) will advance the campus network infrastructure.

Systems Management and Remote Support
Assess systems management and remote access tools as well as design an IT role definition schema to define the requirements, privileges, and expectations that come with various IT roles across campus. Leverage remote support solutions like Bomgar and Puppet enhance remote campus and service access.

Research and Educational Technology Policy Review
Review policies related to survey administration, online learning solutions, cloud computing, drone usages for research and educational purposes, iClicker, web conferencing, and data mining of students, faculty, and staff.

Implementation and Ongoing Projects
Projects that will be implemented or partially implemented in the 2015-2016 fiscal year include continued Office 365 deployment, expansion of the Box cloud-storage solution, and the continued retirement of under-utilized systems. Improvements to the learning management system will be ongoing.
Zero-Based Budget Changes Since FY09-10

In 2009, the Strategic IT Advisory Committee asked ITS to develop a zero-based budget. The SITAC report also recommended we update the zero-based budget every five fiscal years, which was recently completed. The goal of the zero-based budget process is to evaluate and prioritize ITS projects and services and be more transparent and accountable to campus. Before any service is added or retired, that service is evaluated in terms of the services currently offered and the resources available. Aging, underutilized or not-secure services are retired and funds are reallocated to higher value IT services. Rates for ITS services are also reviewed every two years to verify that the actual costs are offered at fair and competitive rates—set by the Chief Financial Officer’s rate setting team—that are easily accessible on the ITS website. ITS focuses on continual improvement and have conversations with the campus community via IT governance to understand which IT services could be delivered better, more cost effectively, and faster.

Over the past five fiscal years, ITS added new services, addressed growth, and increased value in the face of a constant-level budget. From fiscal years 2010 to 2015, 44 new ITS services have been introduced and more than 30 services have been retired. Examples of new services are UT Login, UTmail, Canvas, Box, Qualtrics, and VoIP. Examples of retired services are University Mail Box Service, Fat Cookie, laptop check-out, printer repair, and Blackboard.

Applications ZBB Changes Since FY09-10
Applications is responsible for identity and access management, websites and the underlying applications infrastructure, Drupal and WordPress coding, contract application services, Enterprise Resource Planning systems support including middleware and common applications, the application development suite, the identification center and photo systems, wikis and blogs, and group email. In the past five years, the most significant service retirements in Apps include the retirement of the outdated website infrastructure and a revamping of identity and access management. The most significant growth areas include developing the architecture for the new Enterprise Resource Planning systems, implementing a new access and identity management system, and redesigning the campus web infrastructure.

The most significant retirements in Apps include:

- Central Web Authentication / Fat Cookie: The replacement of the CWA/Fat Cookie system by UTLogin provided an improved user experience (extended session timeouts, improved experience on wireless networks, mobile device friendly user interface) and addressed security vulnerabilities in the old system.
- Legacy Group E-mail: The replacement of the legacy group e-mail system with Regroup was a good example of a customer-focused service modernization effort and one of our first that leveraged a cloud-based solution, a common part of our technical architecture today.
- Web Central (in progress): The aging and difficult-to-maintain legacy Web Central web publishing platform is being replaced by UT Web and other web content management services (such as the Managed Drupal CMS below), improving the web publishing functionality available to campus units while reducing the complexity of managing campus web sites.

Growth areas that hold the most excitement for Apps in the next five years include:
SailPoint Group & Role Management: Group and role management services will enable automated provisioning of system authorizations and access entitlements, improving the efficiency of the on-boarding process. It will also bolster security by avoiding the over-provisioning of system access and automatically removing authorizations that are no longer needed as people change roles or leave the University.

Managed Drupal Content Management System: The Managed Drupal CMS platform will allow web site owners across campus to focus on creating web site content rather than worrying about web site maintenance and technical support.

New Application Development Operations (“DevOps”) Toolkit: The new ASMP 2.0 technical architecture will include a robust application development toolkit for campus administrative developers, providing continuous integration/delivery and automation of many routine developer tasks, allowing developers to focus on solving business problems rather than dealing with mundane application build tasks.

The Enterprise Service Bus (ESB): The ESB will allow for communication across between mutually interacting software applications in a service-oriented architecture (SOA).

**New Services (Implemented):**

- Authentication
  - **UTLogin** – Provides a modern, secure single sign-on authentication service for campus
  - **Multi-Factor Authentication** – Provides a higher level of security for sensitive online services to help combat online fraud

- E-Communications
  - **Group E-mail** – The new group e-mail service, based on Regroup, replaced the homegrown legacy group e-mail service
  - **Urgent E-mail** – Allows urgent messages to be sent quickly to specific groups in the university community

- Enterprise Resource Planning (ERP) Support
  - **ERP User Interface (UI)** – Provides a UI framework for legacy ERP applications
  - **Enterprise Integration** – Provides support for integration between campus applications and the ERP

- Web Publishing
  - **Offsite Emergency Website** – Provides a remotely hosted main university web site that can be activated if the normal site is unavailable
  - **UT Content Management Service (CMS)** – Provides web content management services for many parts of the university’s official web presence

**New Services (In Process):**

- Authorization
  - **SailPoint Group & Role Management** – Will provide enterprise group and role management services for campus, improving the efficiency of provisioning and deprovisioning of authorizations
  - **SailPoint Authorization Review and Recertification** – Will provide robust authorization reporting, review, and recertification capabilities to ensure that the right people have access to the right systems as their roles change over time

- Identity Administration
- **SailPoint Identity Administration & Provisioning** – Will replace the uTexas Identity Manager (TIM) system with a modern, flexible identity administration and provisioning tool

- **Web Publishing**
  - **Managed CMS and CMS Hosting Platform** – Will provide centrally funded Drupal templates as well as for-fee Drupal support services

**Administrative Systems Master Program (ASMP) 2.0 New Services (In Process):**

- **DevOps**
  - **Continuous Integration/Delivery** – Will automate the regular merging of developer working copies of code with a shared mainline
  - **Static Code Quality Analysis** – Will automatically check source code for compliance with a predefined set of rules or best practices set by the organization
  - **Build Automation** – Will automate day-to-day developer tasks, including compiling source code into binary code, packaging binary code, and running automated tests
  - **Load Generation** – Will provide tools to test application performance by mimicking heavy application use
  - **Quality Assurance** – Will support automated testing of applications
  - **Application Development Lifecycle Management** – Will provide a tool for managing application development throughout the Software Development Life Cycle

- **Technology Integration**
  - **Enterprise Service Bus (ESB)** – Will facilitate integration between systems by means of loosely coupled web services
  - **Application Programming Interface (API) Repository/Registry** – Will allow developers to discover web services at design time
  - **Messaging Service** – Will provide a common platform for applications to send and receive messages supporting multiple messaging protocols

- **Portal Services**
  - **University Portal** – Will provide access to online services at the university through a single user interface, customized based on the individual’s status as student, faculty, staff, or researcher

- **Document Management Services**
  - **Electronic Content Management** – Will facilitate document management, storage, search, collaboration, records management, digital asset management (DAM), and workflow management
  - **Document Capture** – Will facilitate electronic capture of documents and physical scanning of documents for storage
  - **Document Generation** – Will automate the generation of documents from multiple source files

- **Security and Resiliency**
  - **Security Vulnerability Scanning** – Will analyze source code to identify and track application layer security vulnerabilities

- **Education Program**
  - **Redesigned Software Developer Training Program (SDTP)** – Will redesign the software training program to support and reflect the new Administrative Systems Technical Architecture
Growth of Services:

- **Education Program** – The current Education Program/SDTP focusing on mainframe Natural/Adabas and Python development has a current backlog of 15 trainee requests from the community. Backlog has grown in past two years.

- **Shibboleth/Security Assertion Markup Language (SAML) Authentication** – The number of cloud-based solutions being adopted by campus units is accelerating, driving growth in demand for SAML-based authentication.

- **Contract Services** – Contracts Services provides software and web development and support for many campus departments, including the Center for Teaching and Learning and the Provost’s Office.

Retired Services:

- **Fat Cookie/Central Web Authentication** – The Fat Cookie system was retired and replaced by UTLogin to address a number of security issues.

- **Legacy Group E-mail** – The legacy Group E-mail system was replaced by Regroup.

- **Oracle University Content Management** – This service was retired from use and replaced with modern content management services.

- **Urchin Web Analytics** – This end-of-life web analytics tool has been retired from use.

- **Lansa** – This virtual machine infrastructure was replaced by the UT-V service.

Opportunities to Retire Services (Future):

- **Authorization**
  - **Apollo** – Apollo is used to manage authorizations in mainframe systems and will be largely replaced by SailPoint Group & Role Management.
  - **DPUSER** – DPUSER is used to manage mainframe login accounts and authorizations and will be retired when the mainframe is decommissioned.
  - **Organizational Hierarchy System Contacts** – The OHS Contacts system will be replaced by SailPoint Group & Role Management.

- **IT Service Provisioning**
  - **TRAC** – The TRAC IT Service Provisioning system will be replaced by ServiceNow.

- **DevOps**
  - **jWebAgent** – The WebAgent environment will be retired when the mainframe is decommissioned.
  - **DMG** – The DMG tool will be retired when the mainframe is decommissioned.
  - **Desktop Upload (DUFF)** – This desktop-to-mainframe upload service will be retired when the mainframe is decommissioned.
  - **jEdit** – Support for jEdit WebAgent development will be retired when the mainframe is decommissioned.
  - **PDF Generator** – The PDF Generator will be retired when the mainframe is decommissioned.
  - **Integrated Development Environments (IDEs) for Natural Development** – Support for Natural IDEs will be retired when the mainframe is decommissioned.
• E-Communications
  o Javamail – This service that forwards email from the mainframe will be retired when the mainframe is decommissioned
  o TXMAIL – This mainframe-based email service will be retired when the mainframe is decommissioned

• ERP Support
  o All My Addresses – This service will be replaced as the source systems for student, employee, and other information are replaced
  o DEFINE Internals – DEFINE will be replaced by Workday and other new ERP applications
  o Departmental Open Records Request (DORR) – DORR will be retired when the mainframe is decommissioned

• Technology Integration
  o XML Gateway – XML Gateway services will be retired when alternative integration services are implemented via ESB

• Portal Services
  o UT Direct – The UT Direct portal will be replaced as part of the Administrative Systems Modernization Program

• Document Management Services
  o DocRepo – This mainframe-based document management service will be retired when the mainframe is decommissioned

• Web Publishing
  o Web Central – The Web Central Platform is being replaced by UTWeb and other web content management services
  o Helix Streaming Media – This streaming media service will be retired when the Web Central platform is retired
**Network and Telecommunications ZBB Changes Since FY09-10**

The network, voice services, network and telephony cabling and construction, facility network systems design, and facility security fall under the auspices of Networking and Communications. The past five years have seen the transition of physical telephony to a campus-wide VoIP system. The $8 million VoIP Project, transitioning 23,000 legacy phones to Voice Over IP marked the most significant retirement for Networking and Communications. It is not often that every office at the University is visited by Networking staff and 30 years of history is undone to return over $2 million annually to department budgets.

The most exciting future projects for Networking and Telecommunications will be the increased speed and capacity of the network. In the past five years, over 60,000 additional wired ports were added and 3,700 additional wireless access points. Wireless bandwidth consumption grew nearly 1,700%. The future will only be bigger, faster, better wireless service that supports the move of campus to the cloud infrastructure of the future.

**New Services:**

- **Voice**
  - **VoIP (Voice Over Internet Protocol)** – Converting 23,000 phone lines to new system, to be completed 8/31/2015
    - Governance (2010-2012)
    - $2M system (2012-2013)
    - Dramatic rate reductions ($21/month --> $7/month)
    - Re-route analog cable center from SER to six other locations to prepare for demolition of SER
    - Institutional lines funded as common good ($300K/year)
    - Cloud-based Automatic Call Distribution (ACD) system
  - **Reverse 9-1-1 system** (automatic dialer)

- **Networking**
  - **Data Center Networks ($3.5M)**
    - Highly resilient network new UDC-C Data Center
    - Extension row to UDC-B
    - East Hall UDC-C expansion
    - UDC-B network upgrade
  - **Internet Protocol Address Management (IPAM)** – In process of deploying new self-service system for TSCs
  - **AT&T Wi-Fi** (third party provided wireless network for visitors)
  - **Extensive network port tapping system for ISO monitoring**

- **Building Access Control and Security (BACS)**
  - **Moved to fee for service** – From voice rate subsidized model (~$1M/year)
  - **External doors support** – Funded as common good ($300K/year)
  - **Video Security Service** – With 565 cameras deployed to date

- **Facilities Design**
- **803,926 square feet of new space on campus ($1.8B)** – For which N&T provided design, construction and installation services

- Distributed Antenna System (DAS, cellular)
  - Internal DAS installed in DKR, DFF, ERC, WEL (carriers have invested $10M-$20M)

- **Longhorn Network** – Installed 127,633 feet of fiber cabling (over 9,000 splice points)

**Growth in Services:**
- Networking
  - **Wired**
    - 60,940 wired Ethernet ports added
    - 1,223 Ethernet switches added
    - 29,953 more end user devices added (87,500 total -- there are more our monitors cannot see)
  - **Wireless Networks**
    - 3,704 wireless access points added (over 3,000 also upgraded)
    - 123,723 more end user devices added (197,344 total)
    - 1,688% growth in bandwidth consumption

- Building Access Control and Security (BACS)
  - 1,057 card reader doors added (2,189 total)
  - 4,633 alarm points added (20,691 total). Most alarms have multiple points.
  - 120 panic buttons (1,705 total)

- Distributed Antenna System
  - Outdoor DAS upgraded to support 4G/LTE for AT&T and Verizon

- Cabling and Construction
  - 5,837,902 feet (>40,000 cables) of copper cable installed

**Changes and Retirements:**
- Voice
  - **Legacy (digital/analog/VoIP) phone system retirement in process**
    - $1.8M in rates subsidizing other services
    - Phone set rental (~$700K)
    - SmartVoice voice mail (~$300K)
    - Domestic long distance (~$75K)
    - Work order for simple moves
    - Byzantine billing options
    - Premise based Automatic Call Distribution (ACD) system
  - **Voice line count reduced by 25% during VoIP project**

- Networking
o Public Network Authentication (PNA) wired ports retired
o guest.utexas.edu (web redirect mediated guest access)
o Legacy DNS system – In process, the retirement of the manual system of editing text files with over 650,000 Domain Name System records

• Building Access Control and Security (BACS)
  o BACS Remediation – In process, is projected to remove ~50% of devices over the next 24 months ($3M anticipated project cost)
  o Campus Siren system support outsourced (under CS&S contract)

• Cabling and Construction
  o Removal of 1,028,954 feet of copper cabling

• Satellite Uplink/Downlink Facility – Converted to DAS site

Changes and Retirements (Future):

• Networking
  o Architecture changes to support increased security needs in general and Dell Medical School (MPLS – Multi Protocol Labeled Switching)
  o Reducing Costs
    ▪ Consolidation of small sites to core distribution routers and leasing service
    ▪ Auto configuration of wired ports (wired 802.1x), so more like wireless
    ▪ ITS support for moves/adds/changes within units – “Site Networking”
    ▪ Shift more administrative computers to wireless connectivity
  o Cable Television (CATV)
  o ASMP (Administrative Master Plan) – TBD
  o Dell Medical School – TBD
Faculty/Staff Bandwidth Recommendation

Summary

Faculty and staff bandwidth allocations should be increased to prevent interference with mission related activities resulting from use of cloud-based services (e.g. Box, Canvas, etc).

The budget impact of this increase is projected to be less than $50K/year for faculty and full-time staff.

Recommended allocations (FY 2015-2016)

<table>
<thead>
<tr>
<th>Role</th>
<th>Allocation/Week</th>
<th>Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part-time staff</td>
<td>10GB</td>
<td>6,000 web pages; 33 hours Netflix (low)</td>
</tr>
<tr>
<td>Benefits earning staff, major fellows, teaching assistants, affiliate workers, official visitors</td>
<td>50GB → 500GB</td>
<td>312,000 web pages; 166 hours Netflix (HD)</td>
</tr>
<tr>
<td>Faculty</td>
<td>500GB → 2TB</td>
<td>Desktop hard drive 285 hours Netflix (UHD)</td>
</tr>
</tbody>
</table>

Student purchase options (FY 2015-2016)

<table>
<thead>
<tr>
<th>Options</th>
<th>Allocation/Week</th>
<th>Cost/Semester*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 1</td>
<td>10GB</td>
<td>$3</td>
</tr>
<tr>
<td>Tier 2</td>
<td>50GB</td>
<td>$5</td>
</tr>
<tr>
<td>Tier 3</td>
<td>200GB</td>
<td>$6</td>
</tr>
<tr>
<td>Tier 4</td>
<td>500GB</td>
<td>$8</td>
</tr>
</tbody>
</table>

*Compare with typical ISP costs of $160/semester
## Spring 2015 Network External Bandwidth Statistics (wcg 5-30-2015)

<table>
<thead>
<tr>
<th>Row Labels</th>
<th>Average Consumption Weekly (weighted)</th>
<th>Average Allocation Weekly</th>
<th>Total Consumed by Class</th>
<th>% Consume by Class</th>
<th>% of Total</th>
<th>In Class</th>
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<tbody>
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<td>St Dev</td>
<td></td>
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<tr>
<td><strong>Public</strong></td>
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<tr>
<td>Faculty</td>
<td>688</td>
<td>947</td>
<td>494,340</td>
<td>45,293,848</td>
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<td>5%</td>
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<tr>
<td>Other</td>
<td>469</td>
<td>468</td>
<td>53,091</td>
<td>13,032,112</td>
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<td>3%</td>
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<td>3</td>
<td>23,028</td>
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<td>204,389</td>
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<td>4</td>
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<td>13,462</td>
<td>505,571</td>
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<td><strong>Staff</strong></td>
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<td></td>
<td>686</td>
<td>773</td>
<td>44,644</td>
<td>130,782,460</td>
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<td>Students (Non Resnet)</td>
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<td>No Purchase</td>
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<td>1,590</td>
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<td>3%</td>
<td>5%</td>
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<td>Tier 4</td>
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<td><strong>Other Allocation</strong></td>
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<td></td>
</tr>
<tr>
<td>No Purchase</td>
<td>1,491</td>
<td>1,524</td>
<td>501,000</td>
<td>64,849,618</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>Tier 1</td>
<td>1,403</td>
<td>1,256</td>
<td>49,629</td>
<td>133,362,531</td>
<td>4%</td>
<td>7%</td>
</tr>
<tr>
<td>Tier 2</td>
<td>1,070</td>
<td>953</td>
<td>16,073</td>
<td>69,881,033</td>
<td>2%</td>
<td>5%</td>
</tr>
<tr>
<td>Tier 3</td>
<td>1,769</td>
<td>1,509</td>
<td>22,057</td>
<td>24,186,188</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Tier 4</td>
<td>2,440</td>
<td>2,269</td>
<td>61,865</td>
<td>19,389,185</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Unknown Status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>429</td>
<td>371</td>
<td>18,844</td>
<td>3,375,009</td>
<td>0%</td>
<td>1%</td>
</tr>
</tbody>
</table>

| Grand Total                       | 2,684                                | 1,786                     | 93,540                   | 3,281,920,577    | 100%      | 100%    | 63,153 |