DRAFT

Technology Resources Response

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CCSF Information Technology Services

Mission Statement and Guiding Principles

**Mission Statement**
Information Technology Services (ITS) supports City College of San Francisco (CCSF) and all its departments by: creating services and maintaining technology being used by students and employees; providing technical expertise to improve productivity, effectiveness, and efficiencies; and providing customer support for technology. ITS is customer-centric, empowering the CCSF community by providing needed technology that in turn improves student success.

The following Guiding Principles will be followed by ITS in order to support the overall mission of CCSF. These Guidelines are part of a continuous improvement process to adapt to technological changes and allocate resources based on prioritized needs.

**Sustainability**
Information technology equipment will be purchased, maintained, replaced and recycled using a continuous sustainable model.

**Coordination**
Information technology resources will be allocated in accordance with the annual needs of CCSF through the ongoing Program Review process.

**Standardization**
All information technology systems will be configured to CCSF standards to ensure adequate support and reduce downtime.

**Shared Resources**
Efforts will be taken to make all appropriate information technology equipment accessible to the entire college community.

**Staffing**
Adequate staffing levels and training programs will be maintained to accommodate for technological changes and employee attrition.

**Innovation**
New technologies will be evaluated and implemented at CCSF in order to achieve cost savings and a high level of technical excellence.
Technology Systems Overview

**Academic Systems**

The Academic information technology systems at CCSF primarily consist of computer classrooms, which are used for delivery of instruction, and computer centers where computers are available to students for independent research and study. There are a total of 140 of these facilities located across all CCSF campuses containing 3,550 desktop computers. A detailed inventory can be found in Appendix E. The computers have been funded by using a combination of sources including grants and General Funds which is detailed in Section 7. A replacement model has been developed to ensure computing systems are replaced every five years. However, as technology improves and proper practices are followed, some systems are capable of providing service for longer than the typical five year period. Also, the applications run on the computers vary widely in their complexity and in many cases is the determining factor when a given system needs to be replaced.

Online courses are a significant and growing area of Academic technology. During the Fall 2012 semester there are 163 online courses serving approximately 6,000 students. There are also 269 technology enhanced courses in which the virtual features and benefits of distance learning are utilized in a physical classroom setting (info to be added).

Classroom projectors are also a key component of Academic technology systems (info to be added).

**Administrative Systems**

The Administrative systems at CCSF are used to provide centralized technology services to the entire CCSF community with an emphasis on the needs of Faculty and Staff. The primary system in use is Banner which is an Enterprise Resource and Planning (ERP) application manufactured by Ellucian. This system is supported by servers, databases and a storage area network (SAN). There are also communications infrastructure components which are essential for online access to resources, these components consist of network switches, firewalls fiber-optic devices. A standardized telephone and voicemail system is in use across all campuses. An email system, GroupWise in currently in place and plans are underway to migrate the email function to a hosting service in order to reduce costs and increase functionality. (info to be added)
Technology Plan Summary

Info to be added regarding existing Technology Plans.
Coordination With Planning and Budgeting Process

Info to be added regarding the coordination with Planning and Budgeting, text below from Kim.

In that this lives between the Strategic Plan and Program Review/Annual Plans, and is on a level with the Education and Facilities Master Plans, it seems the Tech Plan should expand on the Technology Goals in the Strategic Plan, but leave the specific details and costs at the implementation level.

Several Technology Master Plans from other institutions describe themselves as "frameworks," which makes sense to me. They include things like Vision, Mission, Guiding Principles, Assumptions, Strategic Goals, Planning Process, Evaluation, Resources and Budget. Not all plans have all of these items. Some plans include information about resources needed and budget, but in general terms.

Two plans I find interesting are linked below. I have only skimmed them. This is just a start, I've looked at about a dozen plans, these two show some different options.


This one stays very much on the macro level of strategic goals - just a statement of purpose and framework. (It is many pages, but lots of white space.)


The first ten pages are the vision and goals. The goals include references to the WASC standards, which is a valuable model to consider. Then, on page 11, they include an Implementation Grid with Action Items. This is more like our old plan, but with many more factors considered. I'm not sure about a centralized 3-year or 5-year implementation grid, but this is an interesting model to consider for annual plans deriving from the strategic goals.
Replacement Models and Replacement Cycles

Administrative technology systems are used to provide services to the CCSF community. The systems are typically a combination of hardware and software, each of which have their own replacement cycles. Due to the wide variation in technical function and the associated components, each system has an independent replacement cycle beginning with the time it was first installed and is primarily driven by the vendor’s product roadmap and technical support guidelines.

Administrative Technology System Replacement Cycle

<table>
<thead>
<tr>
<th>System</th>
<th>S/W Cycle</th>
<th>Upgrade Due</th>
<th>H/W Cycle</th>
<th>Upgrade Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banner ERP</td>
<td>2 years</td>
<td>2013</td>
<td>5 years</td>
<td>2013</td>
</tr>
<tr>
<td>Blade Chassis</td>
<td>N/A</td>
<td>N/A</td>
<td>10 years</td>
<td>2021</td>
</tr>
<tr>
<td>Blade Servers</td>
<td>N/A</td>
<td>N/A</td>
<td>7 years</td>
<td>2018 ongoing</td>
</tr>
<tr>
<td>Storage Area Net</td>
<td>N/A</td>
<td>N/A</td>
<td>5 years</td>
<td>2015</td>
</tr>
<tr>
<td>Network Switches</td>
<td>Ongoing</td>
<td>N/A</td>
<td>8 years</td>
<td>2016</td>
</tr>
<tr>
<td>Core Switches</td>
<td>Ongoing</td>
<td>N/A</td>
<td>5 years</td>
<td>2013</td>
</tr>
<tr>
<td>Telephone System</td>
<td>2 years</td>
<td>2013</td>
<td>12 years</td>
<td>2016</td>
</tr>
<tr>
<td>Telephone Sets</td>
<td>N/A</td>
<td>N/A</td>
<td>10 years</td>
<td>2014 ongoing</td>
</tr>
<tr>
<td>Checkpoint FW</td>
<td>2 years</td>
<td>2014</td>
<td>4 years</td>
<td>2014</td>
</tr>
<tr>
<td>Palo Alto FW</td>
<td>3 years</td>
<td>2012</td>
<td>3 years</td>
<td>2012</td>
</tr>
<tr>
<td>WiFi System</td>
<td>N/A</td>
<td>N/A</td>
<td>5 years</td>
<td>2016</td>
</tr>
<tr>
<td>Personal Computers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Printers</td>
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</tr>
</tbody>
</table>

Info to be added regarding Academic replacement cycles, see Flowchart in Appendix B.
Staffing Considerations

Adequate levels of Information Technology (IT) staff are required in order to maintain a high level of availability and ensure the systems are configured based on the needs of CCSF. IT staff members are employed on a full-time basis throughout the year. Some staff members perform equipment upgrades and replacement during the times classes are not in session. All full-time IT staff members are considered to be Classified staff within CCSF and are employed in a Civil Service structure with formal job classification codes and associated job descriptions. The current quantity of IT staff is 65 of which 42 are in the ITS Department, the remainder are members of other departments and receive technical guidelines and direction from ITS.

Working in the IT field presents unique situation to any organization based on the dynamic aspect of technical progress. While commodity systems such as PCs are becoming simpler and more reliable, allowing individual employees to maintain a larger quantity of devices, other systems are increasing in complexity and require advanced technical skills. This is particularly true with new systems that are implemented in order to provide a new service to City College, such as the recently installed Storage Area Network (SAN). Eventually systems such as this are handed over to general technical staff to maintain, but engineering-level skills are required to initially configure and deploy the technology. This engineering-level requirement can be partially filled by using vendor Professional Services during the installation phase, they also provide staff training during this timeframe, but in order to properly maintain and operate complex systems an adequate number of employees with the appropriate level of skills is required.

Overall the technology equipment in use at CCSF are standardized systems that are similar to those used at other California Community Colleges. Adequate staffing is required to achieve the primary goals of accessibility, affordability and availability.
Funding Sources and Grant Programs

Career and Technical Education (CTE)

The Federal government recently renewed the Carl D. Perkins Career and Technical Education Act (formerly VTEA). The Act was reauthorized through 2012 to continue the delivery of high-quality, comprehensive CTE programming at community colleges. In 2007-08, CCSF undertook an extensive process to develop a new five-year local plan that will guide CCSF’s implementation of this funding for the life of the legislation.

This funding method has been the primary source of technology equipment for the eligible departments. It is anticipated it will continue at a similar level beyond 2012.

Eligible Academic Departments
- Administration of Justice and Fire Science
- Aircraft Maintenance Technology and Aeronautics
- Architecture
- Automotive/Motorcycle Technology
- Broadcast Electronic Media Arts
- Business Programs
- Child Development and Family Studies
- Cinema
- Computer Networking and Information Technology
- Computer Science
- Construction & Building Maintenance
- Culinary Arts and Hospitality Studies
- Engineering, Technology & Related Occupations
- English as a Second Language
- Environmental Horticulture and Floristry
- Fashion
- Graphic Communications
- Health Care Technology
- Health Education
- Health - Dental
- Health - Nursing
- Journalism
- Labor and Community Studies
- Library Information Technology
- Multimedia Studies
- Photography
Additional grant programs have provided technology resources to CCSF (info to be added).

Other Grant Programs
National Science Foundation
Department of Labor (BTOP)
MAA = Medical Assistance Administration
BFAP-SFAA = Board Financial Assistance Program - Student Financial Aid Administration
http://extranet.cccco.edu/Portals/1/SSSP/FA/2012-13%20BFAP-SFAA%20advance%20field%20disclosure%20Package.pdf
Overview

The CCSF network security infrastructure is improved on an ongoing basis to incorporate vendor feature enhancements, adapt to new threats and provide the necessary capacity to meet the needs of our Administrative and Instructional programs. This document provides a summary of the current major components of our defense-in-depth infrastructure and the anticipated improvements to be made during the next twelve months. Additional improvements to overall data security and information assurance will be defined and implemented by the ITS Management Team, ITPC and other organizations as required. It is important to emphasize that hardware-based systems are only one component in a successful network security strategy. Active participation and precautions will also be required by all individuals entrusted with sensitive information.

Checkpoint Firewall

The Checkpoint firewall consists of a management console and two enforcement points in a high-availability cluster with one active and one standby system. It was recently upgraded to version R75.20 and an Intrusion Prevention System (IPS) software blade was activated. Our immediate goals are to continue tuning the IPS configuration with assistance from our security vendor, Dataway, and to gather specific information regarding the internal processes involved in identifying, analyzing and responding to threats. During the month of July we intend to migrate the enforcement points to new hardware platforms, HP DL380 G6, which will increase the number of network interfaces. Additional cards and memory may be required for this migration at a cost of less than $1,000. The additional interfaces will provide a redesigned server environment which will facilitate clearer and more stringent enforcement of security policies.

Palo Alto Networks Firewall

The Palo Alto firewall consists of a single system, Model 2050, running PAN OS version 4.1.6. The Palo Alto is currently used for controlling peer-to-peer (P2P) traffic, conducting threat analysis and performing anti-virus filtering. During the academic year it is limited to only instruction traffic due to capacity limitations. It would be beneficial to analyze traffic and enforce policies on both Administrative and Instructional traffic simultaneously, but in the past it
has consistently added an unacceptable level of latency during peak traffic periods of 10AM to
2PM. During non-academic periods such as summer break all traffic can be analyzed and
policies enforced without a negative impact. The current threat licensing is due to expire in July,
2013. During the next nine months the need for this level of our multi-tiered security
environment will be re-examined. If this system is determined to be required, the current licenses
may be extended in one-year increments and an evaluation will be performed to determine if a
larger and/or alternative system should be implemented in the future.

Intrusion Detection System

An opensource Intrusion Detection System (IDS) was installed by USDN in January, 2012, and
is based on an application called AlienVault. On approximately June 1st some of the functions of
this system became inoperable although it is still providing basic IDS information. CCSF does
not have administrative-level access to this system and cannot directly repair it. We intend to
reinstall the AlienVault application on a new platform, HP DL380 G5, beginning the week of
June 18. We estimate it will take two weeks to complete the installation and the subsequent
tuning before the system can become operational. After that time the USDN system will be
disconnected from the network and the servers (3) will be redeployed for other purposes.

Desktop Anti-Virus Software

CCSF has a McAfee anti-virus site license for up to 4,500 desktops with the current version
being 8.8. Approximately 500-800 additional desktops are using an alternate anti-virus solution,
some of which are not in compliance with our vendor licensing agreements. During the next
month an evaluation will be performed to determine how to bring these desktops into
compliance, either by increasing the McAfee license or establishing a new license agreement
with a different vendor. All desktops are anticipated to be fully compliant be the beginning of the
Fall 2012 semester. The McAfee agreement is valid until July, 2013. There is a consensus within
the ITS Management Team that the McAfee product does not perform as expected and should be
replaced. During the next six months alternative solutions will be evaluated and tested with the
goal of selecting a permanent replacement during the first quarter of 2013.

Server Anti-Virus Software

OSSEC clients have been installed on the majority of ITS-administered server platforms to be
used in combination with the IDS system. During the next six months additional enterprise level
anti-virus solutions will be evaluated for Windows, Linux and HP-UX to enhance localized
intrusion detection and reporting capabilities. An emphasis will be placed on Linux as it will become the operating system for Banner in late 2013 or early 2014.

Summary

The dynamic nature of network security will continue to present challenges to CCSF both now and in the future. The primary challenge is related to staffing levels, both determining what the level should be and also locating staff once the level is determined. Inherent in this is the need for staff to have an advanced level of baseline technical knowledge to work in this environment and a training path for ongoing skills enhancement and improvement. Quyen Lu has been designated as a backup firewall administrator in addition to his other duties. He will relocate his office to share with Benton Chan in order to facilitate the learning process which is expected to take 6-12 months. The second primary challenge facing CCSF is securing funding for any type of IT-related project with the current financial situation. In the past hardware components have been purchased using Bond funds, but this may not be possible for future projects. Software components and system maintenance are not able to be funded by the Bond and will require the use of general funds.
# Appendix A

## Planning and Budgeting Timeline

### FY 2013-2014

<table>
<thead>
<tr>
<th>Timeframe</th>
<th>Description</th>
</tr>
</thead>
</table>
| Spring 2012 through Summer 2012 | Annual Performance Indicators and College-Wide Assessments for 2011-2012  
The Chancellor leads discussions with the Board and College community on reports such as the Annual Performance Indicators (ARCC, VFA dashboards), End-of-Year Assessment (EYA), and Annual Program Review Summary. |
| Summer 2012        | Board’s Annual Priorities and Planning Assumptions for Resource Allocation for 2013-2014  
Using informed planning assumptions based on (a) internal and external trend data and (b) realistic budget scenarios for 2013-2014, the Board reviews the College’s Mission statement and delineates policy-level priorities consistent with the College’s Mission, as well as Board-adopted Policies and College Plans. The Chancellor communicates these Priorities and Planning Assumptions to the College community at Flex in August. |
| Fall 2012          | Unit-level Program Reviews for 2013-2014  
Developed by all units during the fall semester in response to the Board’s Priorities and Planning Assumptions and Board-adopted College Plans, as well as unit-specific historical trend data, projected data (where available), industry input (where appropriate), survey data (where available), and learning outcomes assessments. Reviews should follow the published guidelines (currently under development) for completing reviews with the goal to program effectiveness and student learning outcomes. Program reviews must be submitted by the end of December for consideration in the upcoming budget. In addition to prioritized resource requests, reviews should include strategies for refocusing the unallocating resources in alignment with the College Mission. Decisions for increasing or reducing resource allocations will be based on program review. |
Completed program reviews are reviewed by immediate supervisors (e.g., School Deans) who rank requests considering several factors (program reviews guidelines under development). Ranked requests are forwarded up the administrative chain until ultimately each Vice Chancellor ranks requests for his or her division for that year. The Chancellor meets with the Vice Presidents and the Chancellors’ Shared Governance Council to determine overall prioritization. Final rankings are published in the Program Review website. The highest ranked resource requests are considered for inclusion in the Annual Budget. Ranked requests may be sorted into categories (e.g., staffing, facilities, equipment, and supplies including technology-related requests). Also, identified redundancies are incorporated into the review of the draft budget. |
Drafts assessed by XXXXXX XX. Reviewed by Shared Governance and recommended to Chancellor. The Board of Trustees reviews the Tentative Budget in May, adopts the Tentative Budget in June, and adopts the Final Budget in September. Shared with the College community. |
| July 2013           | Resource Allocations for 2013-2014  

*When and how often do we assess the process? What were the results and what should be changed?*

### FY 2014-2015

<table>
<thead>
<tr>
<th>Timeframe</th>
<th>Description</th>
</tr>
</thead>
</table>
| Spring 2013 through Summer 2013 | Annual Performance Indicators and College-Wide Assessments for 2012-2013  
The Chancellor leads discussions with the Board and College community on reports such as the Annual Performance Indicators (ARCC, VFA dashboards), End-of-Year Assessment (EYA), and Annual Program Review Summary. |
Appendix B

Computer Lab Replacement Process

1. Review Lab Equipment Age
   - Age > 4 Years?
     - Yes: Notify Lab Owner
     - No: Add to ITS Program Review Request
2. Original Funding Source?
   - Yes: Implement Consolidation
   - No: Consolidate w/ Other ITS Lab?
     - Yes: Implement Consolidation
     - No: Other
3. Funding Available for Replacement?
   - Yes: Inform ITS
     - Order & Install New Equipment
   - No: Consolidate w/ Other Lab or Department?
     - Yes: Implement Consolidation
     - No: Add To Dept. Program Review Request
4. Recycle Equipment
5. Repurpose Room
## Appendix E
### CCSF Computer Lab Inventory

<table>
<thead>
<tr>
<th>Building</th>
<th>Room #</th>
<th>PC Qty</th>
<th>Brand</th>
<th>Department</th>
<th>Installed</th>
<th>Replace</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alemany</td>
<td>102</td>
<td>34</td>
<td>HP</td>
<td>Business</td>
<td>2010</td>
<td>2015</td>
</tr>
<tr>
<td>Alemany</td>
<td>205</td>
<td>32</td>
<td>OmniPro</td>
<td>ESL</td>
<td>2007</td>
<td>2012</td>
</tr>
<tr>
<td>Arts Ext</td>
<td>183</td>
<td>30</td>
<td>HP</td>
<td>CNIT</td>
<td>2009</td>
<td>2014</td>
</tr>
<tr>
<td>Arts Ext</td>
<td>264</td>
<td>24</td>
<td>MacPros</td>
<td>Multimedia</td>
<td>2008</td>
<td>2012</td>
</tr>
<tr>
<td>Arts Ext</td>
<td>265</td>
<td>34</td>
<td>OmniPro</td>
<td>BEMA</td>
<td>2010</td>
<td>2015</td>
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<td>APASS</td>
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<td>33</td>
<td>Apple</td>
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<td>2015</td>
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<td>19</td>
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