

Proposal 1

K-20 Enterprise E-mail Project (KEEP)

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The K-20 Enterprise Email Project consists of five strategic technologies fully integrated components providing maximum benefit when implemented together. These consist of the following:

- Enterprise Managed Active Directory (AD)
- Enterprise Identity Management (IM)
- Enterprise Managed Email System
- Enterprise Managed Email Archiving System
- Enterprise Email Discovery/Disclosure Managed Service

Enterprise Managed Active Directory

1. Provide a short description of the features of the strategy.

Active Directory (AD) is Microsoft's directory service used by all the colleges in the system. A directory is a stored collection of information about various types of computing and organizational resources that can be used to accomplish the mission of the institution. A directory service provides foundational tools for the operations, administration, and maintenance capabilities necessary for IT to be able to manage the directory.

Active Directory thus enables system administrators to assign organizational and user security policies, control and manage software deployment, manage access and visibility for computing resources, and apply updates for an entire organization. Active Directory, further, is integral to the effective management of email services, a business critical foundation used by our colleges to communicate to students, faculty, and administrators. Currently, however, there are multiple independent AD environments in use across the Community and Technical College System which causes inefficiencies in staff utilization and increases the complexity of system-wide application development.

The objective of the Active Directory Project is to migrate all of these independent directory service environments into a single centralized directory service using Active Directory to provide improved service level management (sustainability, reliability, maintainability, and cost effectiveness) and enable future Enterprise capabilities that will enhance system-wide support for our students.

2. How does this strategy benefit student access and achievement?

Centralizing Active Directory services directly benefits students by providing expanded secure access to current and future administrative applications such as web registration and grading, collaborative e-learning systems, and shared databases across the CTC Enterprise. Application systems rely heavily on AD to store and retrieve student and faculty access privileges for their access to application features and functionality.

Each of our community and technical colleges as well as SBCTC uses a separately installed Active Directory environment today to provide this service layer to their local users (students, faculty, and staff). In addition to dedicated hardware and software investments, it requires trained available IT staff to administer and perform regular technical tasks involving regular upgrading hardware and software, troubleshooting performance issues, and coordinating backups and restoration of services. The independent nature of the current directory service environment

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also makes it difficult for the system to utilize best practices for user experience (like single-sign on) and security (group policies, data access, etc.).

Key characteristics of the centralized AD services would be: single student IDs and passwords for secure user authentication and permissions, system-wide group policies to manage security, 24x7 operational access to shared applications with minimized downtime, routine backup and restoration following best practices, and best practice disaster recovery and business continuity services.

3. How does this strategy provide financial benefit to colleges and to the system as whole?

Distributed organizations with multiple instances of AD that have pursued a strategy of centralization have attained significant financial benefits. For the CTC system the likely benefits are: *Cost reduction* by decreasing the number of servers, reducing hardware/software maintenance, personnel, and administration; *Ability to leverage centralized servers* – the number of individual AD servers at college's locations would be substantially reduced. The consolidated approach means more processing power with fewer servers; *Proactive management of assets* by upgrading the enterprise infrastructure; installing enterprise monitoring tools and ensuring compliance on critical backup/restore/disaster recovery functions; *Budget planning and associated measurements* become possible, allowing financial planning, accountability and the ability to track usage trends. All of these benefits lead to increased efficiencies and cost-savings for the system.

AD is viewed as critical in supporting the core business applications depended on by the CTC system. AD outages cause potential losses in Exchange (Email) services, collaboration, real-time communications, SharePoint (portals), and other functions. Loss of AD data has a profound effect on a colleges' success.

An enterprise with many AD administrators will likely have varying expertise and skills available to recover AD outages. Successful AD recovery requires a detailed understanding of recovery procedures and the lack of expertise and inconsistent practices can result in a prolonged recovery process, which can have a significant negative effect on end-user productivity and services to students. A centralized enterprise approach to AD enables an enterprise approach to AD disaster recovery and greater ubiquity in skills for the system as well as higher overall skill levels.

4. Are the financial savings short term or long term?

Although there are short-term savings to be realized, the primary gains are viewed as having long term financial benefits.

5. What are the implementation issues, such as impacts on college accreditation, local community, and local political support?

There are no insurmountable technological barriers to implementing an enterprise Active Directory services for the CTC. Colleges will still be able to directly administer their institutional EDU organizational units. College administrators, for example, will be able to assign users to permitted applications and services and to be able enforce local group policies for access per institutional acceptable use policies.

6. Is implementation a local decision or state decision?

Implementation decisions are possible at both the State enterprise level and at the individual College level. Colleges can decide to participate in the consolidated AD Directory and receive benefits from the savings or continue to staff and manage their own AD services. Students at

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these colleges would not have as easy access to the system-wide applications and future implementation of Enterprise core systems will be more costly to implement for the colleges maintaining their own AD instances.

7. What timeline is required for implementation (within 2009-11 or longer term)?

The timeline for implementation would be within 2009-11. It is envisioned that the first organizational unit for consolidation would be the two office locations at SBCTC, Bellevue and Olympia. Once these two organizational units are consolidated, then early adopter colleges would be brought onto the new central AD service along with the email/exchange services. For the smaller colleges with limited IT capability, there would be advantages to becoming an early adopter.

8. Do you think this strategy has enough promise that further analysis should be done?

The strategy in support of the AD Consolidation project can stand on its own merits and should have further analysis conducted. Note, however, that AD consolidation is an underpinning piece of KEEP and as such it should be included as an integrated component of the larger overall proposed project scope for KEEP.

Enterprise Identity Management

1. Provide a short description of the features of the strategy.

Our network college system enterprise needs a centralized, enterprise wide identity management strategy executed through systems that automate key identity management processes. This is imperative from competitive, cost and risk management perspectives if faculty, staff, students, and suppliers, along with other networks and applications, are to have managed access to an enterprise's information systems.

A move towards a cost-effective and scalable IT identity management system would simplify user access for students, faculty, and administrative staff, enhance productivity and strengthen security. By employing the latest technical approaches to Identity Management solutions, we could now automatically grant people—inside and outside the college network—controlled access to our applications and databases in a cost-effective manner. The ultimate objective is to provide students and staff with fast, automatic access to the network provided education products and services so they are productive from their first days at the college while at the same time providing high-levels of security per our system obligations.

2. How does this strategy benefit student access and achievement?

Students will have 24x7 single sign on to the Enterprise network permitting secure access to the Enterprise based applications and databases they need to register for classes, participate in e-learning programs, verify payments, check on grades and course availability, process financial aid requests, and a myriad of other technology supported student-centric activities. They will have the ability to reset passwords using a self service capability. They will also have ability to check on availability of courses provided by the other colleges with the CTC and transfer credits between colleges.

3. How does this strategy provide financial benefit to colleges and to the system as whole? The primary reasons that colleges are implementing Identity Management (IDM) solutions are:

- Business process improvement
- Cost containment

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- Operational efficiency
- IT risk management
- Regulatory compliance

When taken together and designed to work with a centralized AD and EMAIL services solution, the strategy will yield optimized results, but most importantly, it will help prevent unauthorized or fraudulent access to student records and college employee data.

4. Are the financial savings short term or long term?

Although there are short-term savings to be realized, the primary gains are viewed as having long term financial benefits when combined with the other related major components of the Enterprise Email Project.

5. What are the implementation issues, such as impacts on college accreditation, local community, and local political support?

The implementation issues are mostly non-technical and involve formulating a common approach to CTC Identity Management. The process will leverage best practices already in use by the State of Washington DIS for other agencies and organizational units as well as consistency with Identity Management as it is being implemented for higher education institutions as a community.

6. Is implementation a local decision or state decision?

Implementation decisions are possible at both the State enterprise level and at the individual College level. Colleges can decide to participate in the KEEP project and receive benefits from the savings or continue to staff and manage their own Identity Management services. Students at these colleges would not have as easy access to the system-wide applications and future implementation of Enterprise core systems will be more costly to implement for the colleges maintaining their own independent IM software.

7. What timeline is required for implementation (within 2009-11 or longer term)?

The timeline for implementation would be within 2009-11. It is envisioned that the first organizational unit for IM implementation would be the two office locations at SBCTC, Bellevue and Olympia. Once these two organizational units are installed and using the new IM solution in operation with the consolidated AD services, then early adopter colleges would be brought onto the new central IM/AD service along with the email/exchange services. For the smaller colleges with limited IT capability, there would be advantages to becoming an early adopter.

8. Do you think this strategy has enough promise that further analysis should be done?

The strategy in support of a new improved approach towards CTC Identity Management can stand on its own merits and should have further analysis conducted. Note, however, that IM when coupled with AD consolidation is a foundational element of a cost effective KEEP and as such it should be included as an integrated component of the larger overall proposed project scope for KEEP.

Enterprise Managed Email System

1. Provide a short description of the features of the strategy.

Each of our 34 colleges today invests in facilities (hardware and software) and IT staffing to service users with business critical email systems. Email serves a key communications role between students, faculty and administrators. These email systems are locally implemented and supported within the administrative budget of each college. Email equipment requires re-

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investment and expansion as the growth of email storage puts constant pressure on the individual systems for containing active and archive emails. Also, given the critical nature of email availability, local IT staffing must have coverage for their schedules and availability.

Users of email expect and rely on 24x7 system availability. This is not to mention the spam email and potential viruses that might come to each separate user inbox. It only takes one infected email to cause lasting damage to an entire college network. With a capable managed email service, there will be virus protection for every user mailbox. Recovery and restoration of individual email services are included within the scope of managed email services and would utilize best practices. E-mail continuity and disaster recovery would be delivered as a managed service.

2. How does this strategy benefit student access and achievement?

A majority of today's college students are regular users of email services. Modern HE application software utilizes email for routine student communications. This includes a wide range of messages including financial award notifications, course scheduling changes, requests from faculty advisers to meet with students, and confirmation of student grades and status. Students may have more than one email account and forward emails from these accounts to their computers and smart phones. Email has become critical to this communications. Faculty and administration is dependent on email to stay informed and to process their work.

Given the importance of email to our students, it is essential that we provide high quality, reliable and sustainable, and cost effective email services. Centralized managed email services can benefit our students by delivering this level of service consistently for all colleges.

3. How does this strategy provide financial benefit to colleges and to the system as whole?

The colleges today must operate and plan for upgrading hardware and software, as well as kept highly skilled IT staff available to keep their email systems functioning. Although not a full-time demanding task for the IT staff, each college must have at least 2 individuals trained and familiar with the email system configuration to cover instances when a staff member takes leave, in skills training, or is out sick. And when something goes wrong with the email services, response of local IT staff is paramount.

From a system-wide Total Cost of Ownership, the Enterprise Managed Email System would provide significant cost savings through—reduction in duplicated facilities at each college, reduction in technical staffing needed at each college to support their individual email systems, effective integration with the AD and IM elements of the KEEP project, and implement of best practices in centralized service management.

4. Are the financial savings short term or long term?

Cost reductions are both short-term and will lead to significant long-term system-wide savings.

5. What are the implementation issues, such as impacts on college accreditation, local community, and local political support?

Colleges will still be able to add/delete email access using college specific EDU addresses, retaining their college branding identity within the Higher Education community. Colleges will be able offer students email access as well as keep their email systems functioning at high levels of service and secure from virus propagation.

6. Is implementation a local decision or state decision?

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Implementation decisions are possible at both the State enterprise level and at the individual College level. Colleges can decide to participate in the KEEP project and receive benefits from the savings or continue to staff and manage their own Email systems and services. Students at these colleges would not have as easy access to the system-wide applications and future implementation of Enterprise core systems will be more costly to implement for the colleges maintaining their own independent email systems. The potential cost savings in reduced hardware, software, and staffing per college should provide sufficient budget incentive for their Administrations to welcome the capability to join a centralized managed high availability Enterprise Email system.

7. What timeline is required for implementation (within 2009-11 or longer term)?

The timeline for implementation would begin in 2009-11 and most likely extend into 2012-2014. The first organizational unit for the Managed Email system would be the two office locations at SBCTC— Bellevue and Olympia. They would also be implemented with the other integrated components of the KEEP project. Once these two SBCTC organizational units are implemented and fully operational, then early adopter colleges would be offered the opportunity to utilize the managed email system services. For the smaller colleges with limited IT support capability, there would be advantages to becoming an early adopter.

8. Do you think this strategy has enough promise that further analysis should be done?

A managed and centralized email system represents the central element of the overall KEEP strategy and achieves the greatest gains. Further analysis should be done to identify technical issues with implementation and estimate initial project scope and levels of investment needed to support a deployable project objective.

Enterprise Managed E-mail Archiving System

1. Provide a short description of the features of the strategy.

Our students, faculty-, and administrative staff have become comfortable “living” in their email system, and many treat the email inbox as if it were an unlimited file cabinet. As a result, individual mailboxes hold a mix of content, some for convenience of recall and some of which is regulated and cannot be purged—the retention of emails is now subject to government and industry regulations. The current growth of email storage has become costly and problematic. Note, in a typical email environment, a huge quantity of mailbox content is stored in the primary active email messaging system.

Many email users also maintain personal email data files to retain old messages, which are stored on local or networked disc drives—the most expensive form of email storage. These files are usually large, unmanaged, and non-compliant. They typically grow uncontrolled and require additional hardware capacity with its associated costs. The proposed strategy would include designing an effective email archiving system that works in junction with the Managed Email System as part of the KEEP project scope.

2. How does this strategy benefit student access and achievement?

An efficient managed email archiving system included within the operational scope of the email system will benefit students by providing faster email service connections and more reliable and secured long-term storage of important individual email content.

3. How does this strategy provide financial benefit to colleges and to the system as whole?

The primary benefit of email archiving solutions is that it significantly reduces the size of the original mail store, so only a fraction of email data needs to be transferred to the targeted

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archive storage environment. The archive system achieves this by the use of single instancing technology, which removes duplicate messages from the mail stores. The single instance method greatly simplifies the process, resulting in faster deployments, less downtime, and major cost savings.

4. Are the financial savings short term or long term?

Savings are short-term, mostly in email traffic performance over the data networks. Long term savings are possible through better storage techniques for archived data, reducing total storage requirements and their associated costs.

5. What are the implementation issues, such as impacts on college accreditation, local community, and local political support?

Migration of email systems is a critical implementation issue and careful planning is necessary to determine best approach towards archiving migrating emails to minimize storage volumes. Agreement on email archive policies will be needed with the participating colleges and in compliance with Federal, DOE, and State government legal requirements.

6. Is implementation a local decision or state decision?

The archiving strategy decision will be made by the state in compliance with DIS directives. Implementation decisions will be local by each college and will relate to their decisions to use Enterprise Managed Email Services, instead of continuation using college IT facilities and staff.

7. What timeline is required for implementation (within 2009-11 or longer term)?

The timeline for implementing Managed Email Archiving coincides with the implementation schedule for the Managed Email System. Both functions should be considered for parallel implementation during the design phase of the KEEP project and require the AD component.

8. Do you think this strategy has enough promise that further analysis should be done?

This strategy for Archiving Email benefits from the foundation work provided by the Managed Email Services and should be considered within the overall objective and scope of the KEEP project.

Enterprise E-mail Discovery/Disclosure Managed Service

1. Provide a short description of the features of the strategy.

The need exists to provide e-Discovery tools for emails. Emails are now routinely presented as evidence in courts of law. To ensure litigation readiness, both legal and IT departments must address the management of electronic communication within their colleges. As college incur the high costs of an e-discovery request, the benefits of an alternative, proactive approach become clear. Without the right tools in place, collecting, processing, and reviewing electronic data for e-discovery can be time-consuming, expensive, and expose a business to significant legal risks. The proposed strategy involves including e-discovery/disclosure as an integral part of the Enterprise Managed Services. Requirements include: Forensically-compliant archived email; consistently enforced retention policies; ability to designate emails for Litigation holds; and rapid search and retrieval capabilities of messages without impact to the operational email systems.

2. How does this strategy benefit student access and achievement?

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Managed e-Discovery/Disclosure capabilities do not directly benefit students; however, overall systems performance can be impacted negatively by poorly implemented tools for e-discovery. Most colleges have limited e-Discovery options available to them in case of need.

3. How does this strategy provide financial benefit to colleges and to the system as whole?

Strategy provides some financial benefits to the colleges when requests for emails are made by legal parties as evidence.

4. Are the financial savings short term or long term?

Savings will vary by college and most likely be long term. Strategy needs more analysis of e-discovery cost impact and frequency at the colleges. IT staffs are usually involved with processing requests for email files.

5. What are the implementation issues, such as impacts on college accreditation, local community, and local political support?

Since CTC colleges are public entities they are bound by federal, state, and local e-Discovery mandates. Implementation issues of e-Discovery relating to conflicting governance between these jurisdictions are the most difficult to surmount. Implementation of a centralized e-Discovery tool for the CTC must be able to support varying policies for e-Discovery through segmented and hierarchical administrative tools to meet each college's local jurisdictional requirements.

6. Is implementation a local decision or state decision?

The e-Discovery/e-Disclosure as a Managed Service strategy decision will be made by the state in compliance with DIS directives and the Attorney General Office. The selection of a technology approach needs to be architecturally and operationally consistent with the other products used for delivering the cost-effective managed email services.

7. What timeline is required for implementation (within 2009-11 or longer term)?

Timeline for implementation will occur after other components of the KEEP project are operational.

8. Do you think this strategy has enough promise that further analysis should be done?

The inclusion of the ability to provide effective e-Discovery/e-Disclosure capabilities within a framework of managed email and active directory services has merit. Recommend further analysis be undertaken in this area.

Proposal 2

Enterprise Service Desk

Enterprise Service Desk Project

A Service Desk is an organizational and functional element that acts as the central point of contact for IT user's service requests. Those service requests can be for incident support, requests for fulfillment, access request, or just for information. The Service Desk is one of the primary tools used by information technology (IT) best practices to help IT manage user's needs more quickly and efficiently gaining greater user satisfaction while at the same time reducing organizational costs. Further, since it is a central contact point, the Service Desk helps IT to aggregate information so IT can make knowledgeable decisions about training needs, needed service enhancements, and even needed new services. Basically the Service Desk helps IT to assert more control over the environment to better serve its customers and users.

1. Provide a short description of the features of the strategy.

Today each college campus has one or more help desks or service desks. The system has increased support costs and the user experience differs from college to college throughout the system since there are no common best practices. Further, because there is no centralized data collection point for user needs, the system IT environment is fragmented and, at times, out of control. An Enterprise Service Desk creates a leveraged resource for the CTC system to support all system users of IT services, to gain greater control over the IT service environment, and to significantly reduce the total cost of ownership for IT support services. The strategic approach to implementing an Enterprise Service Desk is to carefully blend system support personnel, process, and technology in a way that efficiently and effectively supports all users – students, faculty, administrators, or the general public.

PERSONNEL: An Enterprise Service Desk allows for the widest window of coverage using the most efficient level of staffing. It leverages the skills of user-centric support analysts to log, categorize, prioritize, and in some cases resolve incidents; thus freeing more technically focused personnel from constant interruptions and reprioritization of business-as-usual and project-based work. Users at the colleges will have a "single point of contact" to report problems, ask questions, request information, and provide feedback. Depending on the selected implementation model and related costing, the staffing for the Enterprise Service Desk function could be centralized or virtualized. The Enterprise Service Desk 1st level analyst would escalate incidents they cannot resolve within specified timeframes, beyond their level of expertise, or that are inside the college campus itself to the appropriate 2nd level support staff –either within ITD or at the college.

PROCESS: A common framework for IT service management has been adopted from the industry "best practices" published within the Information Technology Infrastructure Library (ITIL®). The State Board of Community and Technical Colleges IT Division is currently implementing ITIL for improving its operations at this time with a focus on Service Management. As an Enterprise, the processes being developed today by SBCTC would serve as a basis for the proposed Enterprise Service Desk process, managing service requests throughout their life-cycle; even if they cross college and agency boundaries. Guidelines would be adopted for common components, such as categorization and prioritization allowing the system to appropriately prioritize resources to service the system. Service level targets would be defined and agreed to creating service level agreements (SLAs) with the colleges to help manage customer and user expectations. The process would also collect operational and process

Proposal 2

Enterprise Service Desk

performance metrics to measure and evaluate key performance indicators (KPIs) for process improvement activities and reporting to the system.

TECHNOLOGY: A web-based software toolset for users to communicate their issues and report service requests across the enterprise would be implemented. Incidents would be managed using the software to track status, escalate issues requiring higher level technical support or in danger of exceeding SLA timeframes, and communicate status to the users. The system would also have a web-based self-help system allowing users to answer many of their questions quickly through their own actions. The Enterprise Service Desk would also have a centralized knowledge management system that would be used by all IT personnel in the colleges helping to spread technical knowledge useful to the entire system. By sharing hardware components, software licensing, and administrative resources, a feature-rich Enterprise Service Desk approach can be obtainable at an affordable price. Note: For centralized access management to be a feature of the Enterprise Service Desk the system will need to have implemented the Managed Enterprise Active Directory.

2. How does this strategy benefit student access and achievement?

Students and college staff will have access to the Enterprise Service Desk for requesting services using a web based approach that is now widely accepted for institutionalized support services, channeling their requirements to a virtual service rather to a specific individual, who may or may not be available to process the request in a timely and effective manner. The centralized method of knowledge collection will also help the system more quickly identify knowledge gaps for the users and thus help the system to create useful training for users in a timelier manner.

3. How does this strategy provide financial benefit to colleges and to the system as whole?

Applying ITIL concepts such as creating an Enterprise Service Desk for the CTC essentially re-engineers services provided by SBCTC and the college's IT departments from the perspective of their range of customers (students, faculty, and administrators), eliminates unnecessary duplication of effort, and presents a consistent service offering to end-users.

4. Are the financial savings short term or long term?

Depending on the future directions for Enterprise Solutions, the financial savings for implementing a system-wide Service Desk could be significant to the state.

Research conducted by the IT research organization, IDC, from different sectors and geographies points to the achievement of an overall efficiency gain of 30 per cent by the application of ITIL practices. Specific gains include:

- Incident management and service desk support: 40.5%;
- Managing and supporting servers: 30.9%;
- Change management: 28.4%;
- Managing and maintaining network infrastructure: 23.1%;
- Maintaining configuration database: 22.8%;
- Managing applications: 10%;
- Problem management: 9.4%;
- Service level management: 8.5%;
- Average number of network devices controlled per FTE up 57%;
- Headcount growth reduction: 12.2%.

Proposal 2

Enterprise Service Desk

The IDC study documented significant gains that include:

- Payback period: 12 months;
- Typical ROI over a three-year project life cycle: > than 400%.

5. What are the implementation issues, such as impacts on college accreditation, local community, and local political support?

There are no technological barriers to implementing an Enterprise Service Desk for the CTC. SBCTC currently provides a level of Service Desk functionality in support of the core hosted applications- SMS, FMS, PPMS, and FAM. SBCTC is also implementing ITIL to improve the reliability and effectiveness of its operations.

6. Is implementation a local decision or state decision?

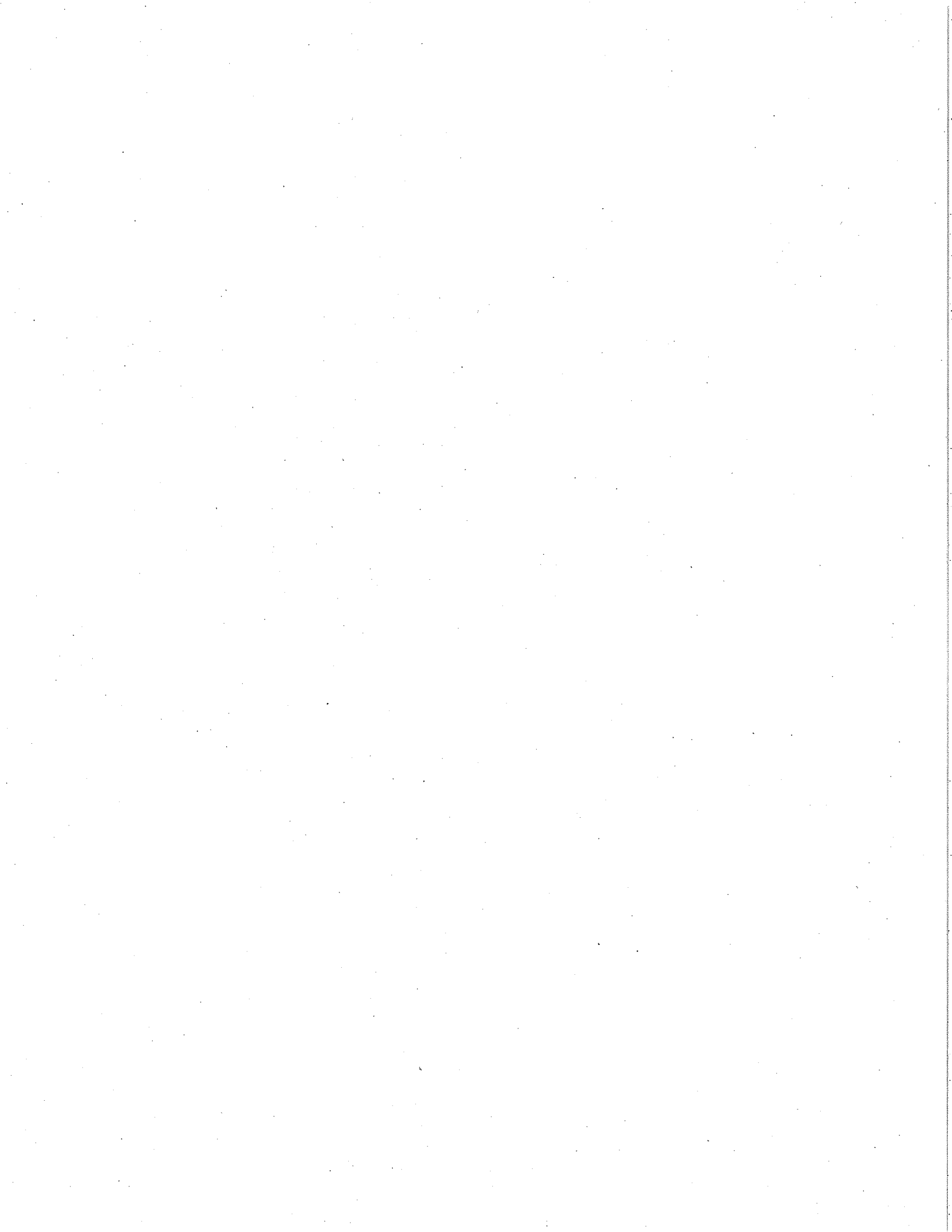
Colleges will have the local decision to use the Enterprise Service Desk for all Enterprise level applications. Colleges with locally staffed applications could continue to support these applications with their own staff. Note however that with appropriate procedures local applications could be supported by the Enterprise Service Desk with all the benefits of a centralized service desk – better self-help, better tracking and reporting, and knowledge sharing.

7. What timeline is required for implementation (within 2009-11 or longer term)?

The timeline for implementation would be within 2009-11.

8. Do you think this strategy has enough promise that further analysis should be done?

The strategy in support of the implementing the Enterprise Service Desk project can stand on its own merits and should have further analysis conducted.



Proposal 3

Standardized Network Hardware Appliances

Standardized Network Hardware Appliances

Network hardware appliances (NHA) are configurable and intelligent commercial devices used to inter-connect computers on campus and to access networks to the Internet and to the K20 system. Network hardware appliances include such devices as: routers, switches,, concentrators, adapters, network cards, load balancers, and firewall appliances. These devices provide a full range of security capabilities as well as efficiently and reliably handle varying volumes of data and communications traffic between remote computers.

Our college enterprise today has a network security infrastructure that is less and less effective due to the wide variety of network appliances and their state of repair and maintenance at each of the colleges. This ineffectiveness, coupled with the spiraling costs of maintaining this array of security devices, is a drain on the system. Further, multiple college network security devices at the enterprise level can cause unintended side effects leading to poor performance and forcing college security staff to turn off security functions to enable user traffic to flow properly. This is often because typical unified threat management devices are built by grafting various acquired security functions onto a legacy port-based firewalls running on PC-based hardware.

This proposal will create a unified network hardware appliance approach throughout the college system.

1. Provide a short description of the features of the strategy.

The strategy will create a single standard for network hardware appliances, in all classes, throughout the community college system. A standardized and unified approach to network hardware appliances will increase security levels for the system, gain economies of scale through common purchasing mechanisms, and leverage common knowledge to reduce staff efforts and costs.

2. How does this strategy benefit student access and achievement?

Students and college staff today have a high reliance on computer network availability and access to their administrative systems, such as course registration, grading, financial aid as well as new capabilities in advanced eLearning technologies. They expect our networks to operate and their applications to be available on a 24x7 basis. This expected dependency on the network availability and the wide variety of NHA devices requires continued investment by our colleges for upgrading systems and requires ongoing expenses to maintain, troubleshoot and support the myriad of network hardware devices. Network hardware standardization across the college enterprise will benefit all students equally by reducing the complexity of our current and aging systems thus increasing the reliability and availability of the system as a whole.

3. How does this strategy provide financial benefit to colleges and to the system as whole?

Collectively, limiting our acquisition approach to standardized network hardware will benefit all colleges by prescribing best available technologies and permitting cross training of our skilled technical IT staff responsible for maintaining our data and communications networks. Financial savings resulting from standardization can be accomplished by leveraging system-wide purchasing and through more effective assistance rendering and knowledge sharing by our IT staffs.

Proposal 3

Standardized Network Hardware Appliances

4. Are the financial savings short term or long term?

The strategy's savings are long-term as the results will be a lower total cost of ownership across the entire system.

5. What are the implementation issues, such as impacts on college accreditation, local community, and local political support?

There are no known implementation issues expected with this strategy. SBCTC expects to work closely with DIS in identifying best technologies for system-wide acquisition and remain consistent with efforts being undertaken by other State organizations.

6. Is implementation a local decision or state decision?

Colleges will have the local decision to utilize the standardized Network Hardware Appliances as they need to upgrade or replace current network components.

7. What timeline is required for implementation (within 2009-11 or longer term)?

The timeline for implementation would be within 2009-11.

8. Do you think this strategy has enough promise that further analysis should be done?

The strategy in support of the implementing the Standardized Network Hardware Appliance can stand on its own merits and should have further analysis conducted.

Proposal 4

Enterprise Database Consolidation/Administration

Database Consolidation and Administration

Colleges maintain and support a number of ad hoc databases systems, the majority of which are using Microsoft Database technologies. Databases are key components of software applications used by the colleges for a variety of administrative purposes. In most cases, each college application runs on its own database server and database utilization rates are low. Further, maintaining multiple databases systems increases complexity and reduces reliability and availability due to the costs of maintaining skills, staffing, and related resources (equipment and software upgrades) for maintaining multiple database systems.

1. Provide a short description of the features of the strategy.

The CTC system will create an enterprise database environment to support the college ad hoc database applications. The enterprise database system will provide ubiquitous world-class services to all the colleges by leveraging the inherent economics of scale by consolidating into one enterprise architecture. Each college will now have access to all the features of an enterprise database architecture including disaster recovery, backup/restore, data warehousing, and business intelligence services. Further, the consolidated environment will make it practical to consider cloud computing resources such as Microsoft's Azure, Amazon's EC2, or IBM Blue Cloud, to name three, to gain even more economies of scale for the enterprise database system.

2. How does this strategy benefit student access and achievement?

Students and college staff today have high reliance on their college database applications and the enterprise database system will provide greater reliability and availability for those college applications.

3. How does this strategy provide financial benefit to colleges and to the system as whole?

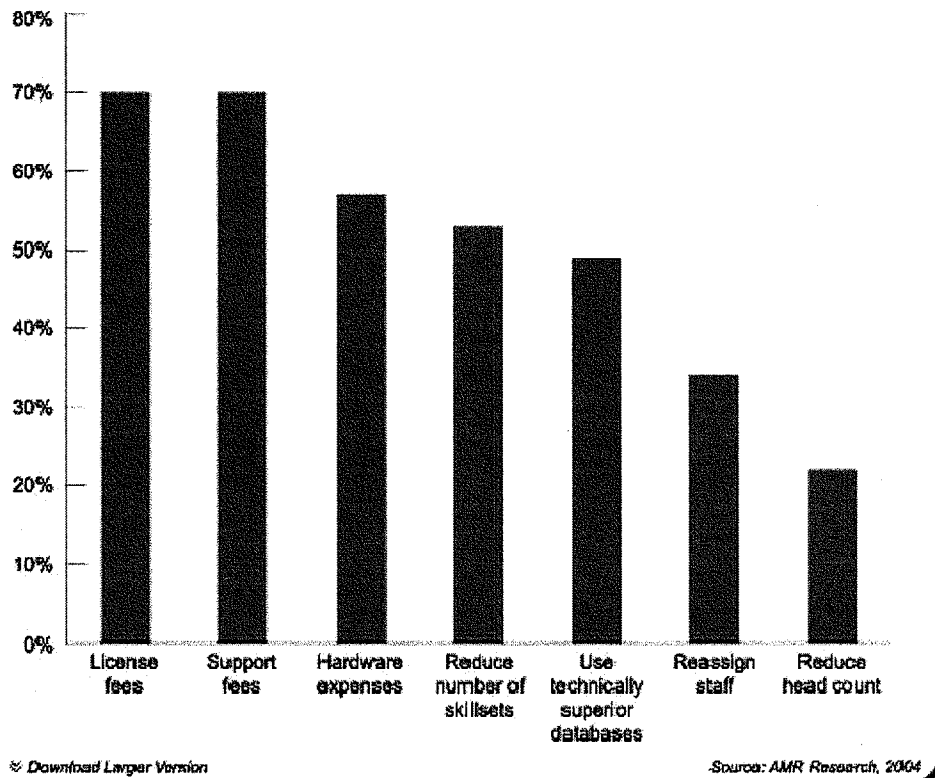
The strategy provides for significantly increased system capabilities for the entire system with a substantial decrease in the required hardware, software, and support staff.

4. Are the financial savings short term or long term?

Proposal 4

Enterprise Database Consolidation/Administration

Figure 4: Initial motivations for consolidating



As shown above, financial savings resulting from consolidation efforts are possible depending on the number of colleges that would participate in the Enterprise effort. The savings will be over the long-term due to consolidation phasing necessary to safely migrate college database systems to the enterprise database.

5. What are the implementation issues, such as impacts on college accreditation, local community, and local political support?

There are no known implementation issues expected with this strategy. SBCTC expects to work closely with DIS in identifying best technologies for system-wide acquisition and remain consistent with efforts being undertaken by other State organizations.

6. Is implementation a local decision or state decision?

Colleges will have the local decision to utilize the enterprise database system as they need to upgrade or replace current database system components.

7. What timeline is required for implementation (within 2009-11 or longer term)?

The timeline for implementation would be within 2009-11.

8. Do you think this strategy has enough promise that further analysis should be done?

The strategy in support of the implementing the Enterprise Database System can stand on its own merits and should have further analysis conducted.

Proposal 5

Enterprise Server Hosting

Enterprise Server Hosting

Some of our Enterprise Servers used for CTC core application systems are currently hosted locally at the colleges rather than being centrally hosted. The college-hosted Enterprise Servers require the colleges not only to provide the local equipment but to also provide local experienced IT staff to operate, upgrade, and maintain their local Enterprise Servers. The lack of a central hosting methodology increases IT infrastructure and staff costs for the entire system.

1. Provide a short description of the features of the strategy.

All Enterprise Servers used for CTC core system applications would be centrally hosted and managed. The system would gain from the economies of scale this provides by allowing for more powerful and useful infrastructure to be purchased and, at the same time, gain reliability and efficiencies by being able to leverage skill staff and tools in the central location.

2. How does this strategy benefit student access and achievement?

Students and college staff today have high reliance on the Core CTC systems and Enterprise Server hosting will provide greater reliability and availability for those college applications.

3. How does this strategy provide financial benefit to colleges and to the system as whole?

The strategy provides for significantly increased system capabilities for the entire system with a substantial decrease in the required hardware, software, and support staff.

4. Are the financial savings short term or long term?

Long term savings will be a result of improved systems management, improved security and monitoring, and more efficient systems integration between core application systems.

5. What are the implementation issues, such as impacts on college accreditation, local community, and local political support?

There are no known implementation issues expected with this strategy. SBCTC expects to work closely with DIS in identifying best technologies for hosting Enterprise servers and remain consistent with efforts being undertaken by other State organizations.

6. Is implementation a local decision or state decision?

Colleges will have the local decision to utilize the Enterprise Server hosting as they need to upgrade or replace current database system components.

7. What timeline is required for implementation (within 2009-11 or longer term)?

The timeline for implementation would be within 2009-11.

8. Do you think this strategy has enough promise that further analysis should be done?

Yes.