

VCU ACES Project Proposal

A. General Information

Provide basic information about the project including: *Project Title – The proper name used to identify this project; Project Working Title - The working name or acronym that will be used for the project; Proponent Secretary - The Secretary to whom the proponent agency is assigned or the Secretary that is sponsoring an enterprise project; Proponent Agency – The agency that will be responsible for the management of the project; Prepared by – The person(s) preparing this document; Date Prepared - The date this document is initially prepared.*

Project Title:	VCU ACES Project
Project Working Title:	Modernization of Communications Infrastructure
Proponent Secretary:	Education
Proponent Agency:	Virginia Commonwealth University
Proponent Agency Number:	236
Prepared by:	William M. Jones
Date Prepared:	Revised 12/21/04)

Answer the following questions by marking Yes or No and provide a brief response as appropriate.

	Yes	No
Is this an updated Project Proposal Document? If yes, what is the reason for this update?	x	
Proposal updated with additional detail and adjusted schedule.		
Is this a follow-on to a previous project? If yes, what is the project name and date of completion?		x
Will the project deliverable(s) replace a current asset or group of assets? If yes, what is being replaced?		
	x	
Voice and data network infrastructure		
Is the Project Initiation Phase effort funded? If yes, what is the amount of funding?	x	
\$75,000		
Is the Project Planning Phase effort funded? If yes, what is the amount of funding?	x	
\$150,000		

Points of Contact

List the principal individuals who may be contacted for information regarding the project.

Position	Title / Name / Organization	Email	Phone
<i>Project Sponsor</i>	Asst. Vice President/Mark Willis/Virginia Commonwealth University	mdwillis@vcu.edu	804 828 0138
<i>Program Manager</i>	Director, VCUnet/William M. Jones/Virginia Commonwealth University	wmjones@vcu.edu	804 828 9912
<i>Project Manager (Designee)</i>	Director, VCUnet/William M. Jones/Virginia Commonwealth University	wmjones@vcu.edu	804 828 9912
<i>Proponent Cabinet Secretary</i>	Secretary of Education/Belle Wheelan	seced@gov.state.va.us	804 786-1151
<i>Proponent Agency Head</i>	President/Eugene P. Trani/Virginia Commonwealth University	etrani@vcu.edu	804 828 1200
<i>Customer (User) Representative(s)</i>	Director, VCUHSCC/Roberta Gump/VCU Health System	rgump@vcu.edu	804 628 2600

B. Project Purpose

Explain the business reason(s) for doing this project. If the Project Analysis Worksheet was completed, the Project Purpose (Section B) from the worksheet provides information to support completion of this section.

1. Business Problem

The Business Problem is a question, issue, or situation, pertaining to the business, which needs to be answered or resolved. State in specific terms the problem or issue this project will resolve. Often, the Business Problem is reflected as a critical business issue or initiative in the Agency's Strategic Plan or IT Strategic Plan.

VCU needs to replace its aging analog telephone systems. It is old technology, difficult and expensive to maintain, and does not provide the flexibility and services needed in a modern academic organization. Implementing an appropriate replacement presents an opportunity to upgrade the entire telephony infrastructure, enabling the latest voice applications and simultaneously upgrading the data network, all without increasing overall costs to end users. Under this initiative, the University will modernize its aging communications systems. The existing systems will be replaced with a modern, integrated system capable of converging voice, data, and video applications. This modernization is expected to enhance service delivery to faculty, students and staff in ways that cannot effectively be accomplished with the existing core technology resources in place, some of which are classified (under COV Enterprise Architecture guidelines) as obsolete or transitional.

For example, the existing communications systems:

- Cannot be converged to eliminate duplicate voice and data infrastructures and support organizations
- Cannot utilize cost-effective high capacity circuits to replace individual phone lines
- Cannot be effectively maintained due to a scarcity of replacement parts and trained technicians for obsolete systems
- Cannot provide modern applications such as unified messaging, on-the-fly conference bridging, Voice over IP, and other services requested by the users.

2. Project Business Objectives

Define the specific Business Objectives of the project that correlate to the strategic initiatives or issues identified in the Commonwealth or Agency Strategic Plan. Every Business Objective must relate to at least one strategic initiative or issue and every initiative or issue cited must relate to at least one Project Business Objective. Replace the example Critical Issues with the Critical Issues you identified in your Agency IT Strategic Plan that relates to this project. The Critical Issues that relate to this project can be found in CATSPA on Step 2 Task B or the Major Project Information Web Version Report.

Commonwealth or Agency Strategic Plan - Critical Issues	Project Business Objectives
Revolutionize Service Delivery	Enable new voice and data applications to support the University's mission.
Foster excellence in teaching, research, and public service that will establish the University as a leader among the nation's major research universities.	Provide a robust, flexible, very high speed campus network to meet the communications needs of our instructional faculty, researchers, and students.
Consolidate IT Infrastructure	Converge the voice and data network infrastructure and support organization.

3. Core Business Activity Impact

Core Business Activities are agency defined cross-functional processes that produce the agency's primary products and services, or support the production of the products or services. List the Core Business Activities impacted by the project and identify the impact. Replace the example Core Business Activities with the Core Business Activities you identified in your Agency IT Strategic Plan that relates to this project. The Core Business Activities that relate to this project can be found in CATSPA on Step 2 Task B or the Major Project Information Web Version Report.

Agency Core Business Activity		Impact on Core Business Activity
Core Business Activity Title	Core Business Activity Sub-Function Title	
Higher Education	Higher Education Instruction	Enhances instructor-student communications.
Higher Education	Higher Education Research	Enables high end collaboration and sharing of research resources.
Higher Education	Higher Education Public Service	Enhances the public service mission efforts of the University
Higher Education	Higher Education Academic Support	Provides a high level of access to support resources.
Higher Education	Higher Education Student Services	Provides a high level of access to resources needed by students and
Higher Education	Higher Education Institutional Support	Provides a secure computing environment for key business services.
Higher Education	Operation and Maintenance of Plant	Building controls and alarms as well as FMD work order systems are dependant on the network backbone.
Higher Education	Financial Assistance for Educational and Gene	Provides a secure computing environment for key business services.

4. Constraints

Constraints are items that by their nature restrict choice. Identify Constraints that will influence the selection of a solution to resolve the Business Problem. Constraints can include but are not limited to: time, funding, personnel, facilities, and management limitations.

The solution will be constrained by the need to integrate with some existing components and cable plant. Cost model requires a rapid implementation of 18 months or less.

C. Project Description

Describe the project approach, the specific solution, customer(s) served, and expected benefits. The approach is the overall strategy for solving the Business Problem. The solution should identify in specific terms how the project is accomplished and include information about the general timing and cost of major procurements or purchases. If the Project Analysis Worksheet was completed, the Preliminary Project Description (Section C) and the Recommendation (Section G) on the worksheet provide information to support development of the Project Description.

The VCU ACES Project will modernize the telephony infrastructure and services at VCU. The University will implement a state-of-the-art hybrid IP PBX system to provide a higher level of service at lower cost for University and Health System customers. Sections of the data network will be upgraded to enable IP Telephony to the desktop. Implementation will occur over a 18 month period starting in the spring of 2005. The University's strategy is to replace all of its obsolete Key System Units and many of it's individual Centrex telephone lines with an on premises PBX. The solution will utilize a combination of traditional telephony and VoIP to provide the optimal mix of reliability, flexibility, and cost effectiveness. The University will upgrade it's data network in conjunction with the telephony system to support voice and data convergence as well as provide very high speed networking to the VCU community. The selected vendor will be able and experienced in providing both technical and functional resources for installation, training, process analysis and operations.

Existing telecommunications chargeback revenues and reserve funds will be used to acquire both the PBX and required data network improvements with no net increase in charges to our customers. The University will issue an RFP for acquiring the integrated PBX and related installation services. Existing State contracts will be utilized to acquire data network gear. This project is consistent with Commonwealth of Virginia technology initiatives to revolutionize service delivery and consolidate IT infrastructure, as well as enterprise business strategies to improve the efficiency and effectiveness of government services.

D. Strategic Justification

Identify how the project is consistent with the Commonwealth and Agency Strategic or IT Strategic Plan. If the project is not consistent, explain why the project is being proposed.

1. Briefly, describe how this project supports or is consistent with the Commonwealth of Virginia Strategic Plan for Technology. If it does not support the Commonwealth of Virginia Strategic Plan for Technology, explain why this project proposal is being submitted. Replace the example Enterprise Business Strategies with the Core Business Activities and Commonwealth Technology Initiatives you identified in your Agency IT Strategic Plan that relates to this project. The Enterprise Business Strategies can be found in CATSPA on Step 2 Task A or the Major Project Information Web Version Report.

Commonwealth Technology Initiative or Enterprise Business Strategy	Impact on Initiative or Strategy
Revolutionize Service Delivery	The proposed solution provides basic telephony services while enabling new converged applications and also establishes a self-funding model for technology refresh for both the voice and data networks.
Foster excellence in teaching, research, and public service that will establish the University as a leader among the nation's major research universities.	The campus voice and data technology must be refreshed regularly in order to provide the latest capabilities and features. Allowing the network to fall into a transitional or obsolescent state would adversely impact almost all areas.
Consolidate IT Infrastructure	The proposed solution enables and begins the convergence of separate voice and data networks.

2. Briefly, describe how the planned solution complies with Commonwealth Enterprise Architecture Standards. If it does not comply with the Commonwealth Enterprise Architecture Standards, explain why this Project Proposal Document is being submitted, and identify which Commonwealth Enterprise Architecture Standard(s) are not being met.

The planned solution fully complies with the Commonwealth Enterprise Architecture Standard by utilizing technology in the Strategic categories and by actively replacing Transitional and Obsolescent technologies.

E. Estimated Project Development Schedule (Major Milestones)

Identify major Project Milestones for planning, execution, and closeout.

Event	Estimated Date	Estimated Duration
Project Charter Approved	December-04	1 month
RFP Process Completed	April-05	4 months
Project Plan Completed	May-05	1 month
Project Plan IV&V Completed	June-05	2 weeks
Project Plan Approved	June-05	2 weeks
Project Execution – Started	June-05	18 months
Semi-Annual IV&V Review	December-05	1 day
Semi-Annual IV&V Review	June-06	1 day
Close Out IV&V Review	January-07	1 day
Project Closed Out	January-07	1 month

F. Financial Estimate

Provide an economic justification for the project based upon the Cost Benefit Analysis and the expected return on investment. Identify the estimated funding resources required to complete the project and then identify the funding requirements to operate or maintain the product(s) or service(s) developed from the project

1. Cost Benefit Analysis Summary

Answer the following questions in the space provided. Attach detailed explanations and analysis as appendices.

A.. Summarize the results of the Cost Benefit Analysis. Explain why the expected monetary and non-monetary benefits validate the expenditure of resources for this project.

Moving to an IP PBX environment provides significant savings in line costs. These savings will fund the voice system replacement and the required data network improvements needed to enable IP Telephony. The data network improvements will support not only the voice service, but also any other application that requires high speed, Quality of Service guarantees, and other leading edge parameters. Extensive analysis shows that it is possible to set up a long term, self-funding model for voice and significant data network technology refresh.

Tangible Benefits over 10 years:		
Line Cost Savings	\$41,714,080	
Data network funds available for reallocation	\$4,000,000	
Total tangible benefits	\$45,714,080	
Non-Tangible Benefits over 10 years:		
Maintenance efficiencies	\$1,800,000	
User Productivity increases	\$7,200,000	
Reduction in network downtime	\$3,600,000	
Increased customer satisfaction	\$1,800,000	
Total non-tangible benefits	\$14,400,000	
Total tangible and non-tangible benefits		\$60,114,080
Total project costs:		\$39,546,137

B. Summarize the results of the Return on Investment Analysis. If the project does not have a positive expected return on investment, explain why this project proposal is being submitted.

The ROI analysis returns a positive result with the potential to reduce net costs and still fund a voice and data network technology refresh program.

Implementation costs (hardware, licensing, and implementation services for voice and data networks): \$13 million.

Continuing operating costs over 10 years = hardware maintenance (\$2.1 million), PRI trunk lines (\$9.3 million) and re-allocated operational and maintenance staff (\$15 million) = \$26.4 million

ROI = (total tangible benefits - total project costs) / total project costs
 ROI = (\$45.7 million - \$39.4 million) / \$39.4 million
 ROI = 16%
 ROI including nontangible benefits = 52 %

2. Estimate of Execution Expenditures and Funding

Provide an Estimate of the Expenditures and Funding required for execution and close out of the project.

Estimated Expenditures							
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	Total	Comments
Internal Staff Labor	\$ 41,600	\$ 41,600	\$ -	\$ -		\$83,200	
Services	\$ 842,839	\$ 792,839	\$ 809,439	\$ 809,439	\$ 809,439	\$4,063,995	Incl. \$60,000 for IV&V
Software Tools	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$25,000	
Hardware	\$ 5,525,000	\$ 952,584	\$ 952,584	\$ 952,584	\$ -	\$8,382,752	
Materials and Supplies						\$0	
Facilities						\$0	
Telecommunications						\$0	
Training						\$0	Incl. in Services
Contingency (Risk)	\$ 250,000	\$ 250,000	\$ -	\$ -		\$500,000	
Total	\$6,684,439	\$2,037,023	\$1,762,023	\$1,762,023	\$809,439	\$13,054,947	

This estimate is accurate to: 50% [] 60% [] 70% [] 80% [x] 90% []

Explanation: Internal labor for implementation is for project management and coordination; vendor will perform the bulk of the installation and setup work. Services includes implementation work as well as training and maintenance services. The bulk of the work will be done in the first year of the project, but financing will be used to spread the cost out over several years, so contingency is only needed for first two years. Informal vendor quotes were used to prepare estimate, so accuracy is 80%. Once the RFP results are analyzed the figures will be revised with a higher accuracy rating.

Anticipated (proposed) Funding Source							
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	Total	Comments
General Fund						\$ -	
Non-General Fund	\$ 6,384,439	\$ 2,037,023	\$ 1,762,023	\$ 1,762,023	\$ 809,439	\$ 12,754,947	
Federal						\$ -	
Other	\$ 300,000					\$ 300,000	HEETF
Total	\$ 6,684,439	\$ 2,037,023	\$ 1,762,023	\$ 1,762,023	\$ 809,439	\$ 13,054,947	
This estimate is 50% [] 60% [] 70% [] 80% [x] 90% [] accurate to:							
Explanation: Non-General funding is from existing sources - no additional funding is needed. The project is a replacement of existing systems, not an implementation of new/additional systems. Permanent budgetary support is expected to continue with no significant changes.							

3. Estimate of Operations Expenditures and Funding

Provide an Estimate of the Expenditures and Funding for Operations and Maintenance of the asset(s) delivered upon project completion.

Estimated Expenditures							
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	Total	Comments
Internal Staff Labor	\$ 753,056	\$ 1,354,752	\$ 1,385,883	\$ 1,417,701	\$ 1,417,701	\$ 6,329,093	
Services						\$ -	
Software Tools						\$ -	
Hardware						\$ -	
Materials and Supplies						\$ -	
Facilities						\$ -	
Telecommunications	\$ 531,868	\$ 976,800	\$ 976,800	\$ 976,800	\$ 976,800	\$ 4,439,068	
Training						\$ -	
Contingency (Risk)	\$ 50,000	\$ 95,000	\$ 95,000	\$ 95,000	\$ 95,000	\$ 430,000	
Total	\$ 1,334,924	\$ 2,426,552	\$ 2,457,683	\$ 2,489,501	\$ 2,489,501	\$ 11,198,161	
This estimate is accurate to: 50% [] 60% [] 70% [] 80% [x] 90% []							
Explanation: As the current telecommunications system is replaced; the staff will be reallocated to support the new system. An increase of 2% per year is factored into the staff figures. Telecommunications expenses of the old system will decrease (shown by line cost savings), but the new system will need new trunk lines to provide service. FY 06 costs are lower as services will be phased in over the year. Operational costs will increase to \$3 million per year in FY 2011 when initial maintenance period expires. Total operational expense over 10 years is projected to be \$26.4 million.							

Anticipated (proposed) Funding Source							
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	Total	Comments
General Fund						\$ -	
Non-General Fund	\$ 1,334,924	\$ 2,426,552	\$ 2,457,683	\$ 2,489,501	\$ 2,489,501	\$ 11,198,161	
Federal						\$ -	
Other						\$ -	
Total	\$ 1,334,924	\$ 2,426,552	\$ 2,457,683	\$ 2,489,501	\$ 2,489,501	\$ 11,198,161	
This estimate is 50% [] 60% [] 70% [] 80% [x] 90% [] accurate to:							
Explanation: Non-General funding is from existing sources - no additional funding is needed.							

G. Project Risk

After completing a Preliminary Risk Analysis Worksheet for this project, determine the level of risk for the project and the risk score. On the chart below, circle the resulting risk level and record the risk score for each risk item. Attach the Preliminary Risk Analysis Worksheet as Appendix C.

Risk Item	Risk Level Range			Risk Score
	High	Medium	Low	
Budget Risk What level of risk does the proposed budget represent to the project?	18-25	9-17	1-8	9
External Dependencies Risk How dependent is the project on other project or work efforts?	11-15	6-10	1-5	1
Management Risk What level of risk does the organization's project management capability represent?	11-15	6-10	1-5	3
Mission Critical Risk How critical is the project success to the success of the	11-15	6-10	1-5	4
Failure Risk What is the risk of failure?	11-15	6-10	1-5	7
Complexity Risk How complex is the project?	11-15	6-10	1-5	9
Preliminary Risk Assessment	73-100	36-73	1-35	33