

Information Technology Strategy

Peralta Community College District

February 1, 2012

Peralta Community College District Mission Statement

Our Mission

We are a collaborative community of colleges.

Together, we provide educational leadership for the East Bay, delivering programs and services that sustainably enhance the region's human, economic, environmental, and social development. We empower our students to achieve their highest aspirations. We develop leaders who create opportunities and transform lives.

Together with our partners, we provide our diverse students and communities with equitable access to the educational resources, experiences, and life-long opportunities to meet and exceed their goals.

Our Goals

Students

A. Advance Student Access, Equity, and Success

Communities

B. Engage Our Communities and Partners

Programs

C. Build Programs of Distinction

Collaboration

D. Create a Culture of Innovation and Collaboration

Resources

E. Develop Resources to Advance and Sustain our Mission

Introduction

What an IT strategy is

An IT strategy is a process that organization goes through to identify and define a portfolio of projects that will help your organization achieve strategic goals.

In order for the strategy to be successful, these projects must be staffed and budgeted. Otherwise, it's a nice report that sits on the shelf while the organization continues to allocate its IT resources in an ad hoc and reactive manner. It is important, then, that the IT strategy feed into the districts formal budget process.

Process

We assembled representatives from all the colleges and most of the functional areas. The team met monthly starting in September and culminated its work in early January. Using the district's overall strategic goals as a reference, identify problems and shortcomings with the districts existing IT capability that would constrain the district from meeting its strategic goals. The workgroup felt that the shortcomings could be organized into 5 themes:

Institutional ability to deliver

- The overall lack of project management skills in the district has resulted in either projects failing or else expensive consultants being hired to drive projects to completion.
- IT governance, the process by which decisions are made and standards are established, has been weak at best.
- The district does not have well-defined and established IT processes. Instead, IT services are demanded and delivered in an ad hoc, uncoordinated fashion, resulting in unhappy customers and overworked, demoralized IT staff.
- There are big holes in the IT skill sets necessary to support PeopleSoft. The District PeopleSoft team is understaffed, and does not have the range of skill sets necessary to support even day-to-day maintenance of the system, much less implement new modules and functionality, resulting in a heavier reliance on consultants.

Sustainable IT infrastructure

- Tech refresh (that is, the set of processes and policies that ensures that an organization renews its technology infrastructure and maintains an adequate level to support its business operation) is ad hoc and unplanned.
- It is highly dependent on bond and other, one time funding sources.
- There is a highly uneven distribution of IT capability not only between the colleges and the district office, but also within the colleges themselves.

- There are no standards or economies of scale for procurement. Purchases of IT assets are done in an ad hoc and uncoordinated fashion, resulting in the district as a whole getting less value for its dollar of IT investment. Given that the IT asset base for the district as a whole is between \$10-\$15 million, there are significant opportunities for a more standardized and coordinated the procurement process.

Reduce back-office costs

- HR, finance, procurement, IT, and district governments are all necessary to the effective operation of the colleges. The question is how to get better service in these functions at lower cost, freeing up resources for delivery of services to students.
- Much of the cost of the back-office is in transaction processing. The district has a major asset that can help with reducing the overall cost of transaction processing: it owns a large number of PeopleSoft modules, only a few of which it has implemented.

Business intelligence

- The district is deluged with data from its transactional systems but has limited ability to make good use of it.
- Student data is an exception. Starting in 2008, the district built a student data warehouse that has become a critical resource for enrollment management.
- Traditional reporting is about control and accountability (and there's lots of room for improvement in this area at the district), business intelligence is about gaining insight based on hard data and in developing strategies based on those insights.
- As part of the student data warehouse project, the district purchased a world-class business intelligence tool: Oracles Business Intelligence Enterprise Edition, or OBIEE. In addition, the district has, as part of its overall PeopleSoft license, prebuilt data warehouses for finance, HR, and procurement.

Mobile learning

- With the explosive growth of smartphones and tablets, the digital divide is dying a rapid death.
- While many of our students may not have access to broadband and their homes, wireless access for smart phones is becoming nearly ubiquitous in public spaces such as coffee houses, libraries, and entire college campuses.
- 50% of the devices that are attached to the Internet are not traditional PCs or laptops, but the District is still building systems and delivering content only to traditional PCs.
- Our students are increasingly abandoning traditional PCs and hardwire connections for smartphones and tablets connected through Wi-Fi or 4G cell service. This is the YouTube, wireless generation. Their expectation is that they have access to all content, any time, anywhere.

Project Identification and Prioritization

This then led to the identification of potential projects and technologies that would help address these shortcomings. We then fleshed out those potential projects to define the benefits, to estimate the costs, and to delineate the risks. We brought the detail project descriptions back to the workgroup and went through an exercise of prioritizing them based on relative benefit, cost, and risk.

- Priority A projects would be completed within the next 2 years, constrained, of course, by available budget and organizational resources.
- Priority B projects will begin later in year 2 if capital remained from implementing the Priority A projects.
- Priority C projects would be postponed until years 3 to 5 or until sufficient resources were obtained to implement them.

Projects

The IT strategy workgroup identified 31 potential projects to be incorporated into this strategy. These were organized under the themes identified above. Detailed descriptions of each project can be found in Appendix 3. Each project description discusses the reasons for the project, and estimates the costs and benefits, as well as discussing the risks that might be associated with the project.

Institutional ability to deliver

Priority A

- Institutionalize staff training and professional development.
- Implement ITIL-Lite at the colleges and at the district.

Priority B

- Provide project management training for staff.
- Create a project management office.

Sustainable IT infrastructure

Priority A

- Standards-based procurement
- Rationalize overall district IT spend with a consolidated IT budget.
- Reduced total cost of ownership by shifting to lease and service agreements for desktop installations.
- Manage print.
- IT asset and device management.
- Web-based e-mail.
- Upgrade to PeopleSoft version 9.1.

Priority B

- Virtualization of laptops and desktops.
- Create a strategy for cloud computing and virtualization of the data center.

Reduce back-office costs

Priority A

- Electronic personnel assignment form.
- Document management.
- Student financial aid system.
- Time, labor, and attendance management.

Priority B

- Classroom scheduling.
- Field service.
- Implement asset management.

- Automated budget development system area and
- Adjunct FTS tracking.

Priority C

- eProcurement.

Business intelligence

Priority A

- Financial data warehouse.

Priority B

- HR data warehouse.
- Procurement data warehouse.
- Bond program public reporting.
- Student data warehouse.

Mobile learning

Priority A

- Increase bandwidth and improve user experience with wireless at colleges.

Priority C

- Streaming content from smart classrooms to mobile devices and other web platforms.
Mobile templates for PeopleSoft/passport.

Numbers

Budget

Budgets were estimated for each project at a relatively high level. The estimates may be revised substantially upward or downward after a detailed requirements studies done as part of the project planning. Given that, we believe that these budgets in summary represent a reasonable estimate of the overall level of expenditure necessary to fully implement the strategy.

The costs for each project were estimated for both internal staff time and external costs such as consultants, software, hardware, and training. The table below summarizes the external costs.

Priority A	2012	2013	2014	2015
Hardware	\$250,000	\$50,000		\$300,000
Software	\$260,000	\$160,000		\$420,000
PM Consultant	\$275,000	\$90,000		\$365,000
Tech Consultant	\$2,205,000	\$1,050,000	\$200,000	\$3,455,000
Training	\$55,000	\$50,000		\$105,000
	\$3,045,000	\$1,400,000	\$200,000	\$4,645,000
Priority B	2012	2013	2014	2015
Hardware		\$270,000	\$250,000	\$250,000
Software		\$100,000		\$100,000
PM Consultant				\$0
Tech Consultant		\$1,100,000	\$450,000	\$1,550,000
Training				\$0
		\$1,470,000	\$700,000	\$250,000
				\$2,420,000
Priority C	2012	2013	2014	2015
Hardware			\$200,000	\$200,000
Software			\$50,000	\$50,000
PM Consultant				\$0
Tech Consultant			\$1,000,000	\$1,000,000
Training				\$0
		\$0	\$1,250,000	\$0
				\$1,250,000
By Year	2012	2013	2014	2015
	\$3,045,000	\$2,870,000	\$2,150,000	\$250,000
				\$8,315,000

Many of these projects will be eligible to be funded from Measure E, which currently has \$5 million allocated for IT projects. Others will be required to go through the standard annual budgeting process and compete with other priorities for budgets from the general fund.

People

All of the projects in the strategy require some level staffing by district employees. The larger projects will require full-time staff participation over an extended period of time. Not having adequate staffing on the projects and relying solely on consultants introduces considerable risk to the success of the projects. The cumulative scope and timing of the projects implies that additional IT staff need to be hired. As indicated by the table below, 2 full-time district project managers are needed in 2012, and four in 2013. The demand for project managers in this strategy tails off in 2014 in 2015, but the table does not account for projects that may be identified in subsequent years. In addition, 2 or 3 PeopleSoft programmer/analysts will be required over and above the staff that maintain and operate the system on a day-to-day basis.

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Peralta Project Portfolio - Resource Projects over Fiscal Years for IT Strategy

Peralta Project Portfolio : Resource Projections | **Resource Projects over Fiscal Years for IT Strategy** FEB-01-2012 1:52 PM

Resource Projects over Fiscal Years for IT Strategy					
Project - Priority is 'Strategy C' OR ...					
Fiscal Year	2012	2013	2014	2015	TOTALS
Resource Pool	Person Days (tot)				
College IT Manager	180	110	80	80	450
Computer Hardware					
Computer Software					
Functional Analyst	535	450	300		1285
Help Desk Technician	60	60			120
Network Engineer	225	40	40	40	345
Peoplesoft Programmer/Analyst	400	640	440		1480
Project Management Consultant					
Project Manager	335	805	260		1400
Technical Consultant					
Training					
TOTALS (33 groups)	1735	2105	1120	120	5080

Risks and success factors

Risks and success factors are opposite sides of the same coin. Only by keeping the success factors in clear view and closely managing the risks will this ambitious program be successful. Here the principal risk areas and their components.

Execution and project risk

It is critical that each project have adequate staff participation. Particularly for large projects, it is important that staff are assigned full-time to the project so that they are not being continually pulled away to work on operational issues.

Strong executive sponsorship is also necessary for project success. These projects must not be seen as solely IT's responsibility. Strong executive sponsorship signals to your organizational unit that the project is important to improving the operations of the district and its ability to serve the students.

It is important for the district to develop a strong culture of project management. It cannot do that by relying solely on consultants for project management. It must devote the resources necessary to train staff and managers in project management best practices, and to develop or hire at least 2 full-time project managers.

Consultants will be necessary in some, but not all projects. There are principles, however, that can be used to derive the fullest value out of the use of consultants.

- Go for quality and experience over cost in the selection criteria. A top technical consultant can be as much as five times more productive than average technical consultant, but will usually only cost 30-40% more in hourly rate. The increase in productivity more than pays for the cost differential.
- To the extent that it can, the district should rely on its own full-time project managers and rely on consultants only for technical tasks.
- Most organizations are ill-equipped to support applications and technologies that have been implemented by consultants because they do not allow staff to work full-time in the project in order to get the knowledge transfer. In projects where there is a knowledge transfer component, the district should assign technical staff to pair up with the technical consultants for the duration of the project. One best practice is to assign District staff to develop the technical documentation, rather than relying on consultants to do that and then hand it over at the end of the project.

Change management risk

Most of the projects in this strategy will involve some change of behavior on the part of district staff, faculty and even students. For instance, the ITIL-Lite project will require the IT staff at the college and the district to provide services in a standard, uniform way. Others, such as document management, electronic PA form, and financial aid, may involve substantial changes in current business processes in order to fully derive the benefits of the systems. So it is important that the end-users of any of these systems be fully

engage from the start of the project through completion of the life. Strong project management and project executive sponsorship are crucial in managing the risks of organizational change.

Benefit risk

Many large IT projects fail to deliver the benefits that were intended when the project started. The push to finish on time and on budget can overwhelm all other considerations, resulting in cutting corners and poor risk management. So it is critical that during the project that the intended benefits are always kept front and center as a measure of project success. One objective way to do this is to measure organizational performance in the areas targeted by the project and then to do the same measurements after the project is implemented and stabilized. Best practice is to do this as part of a comprehensive post implementation review for each project. This will ensure both accountability and, over time, will improve the overall organizational ability to manage projects so as to achieve the benefits intended.

Governance and accountability

If responsibility for the success of this IT strategy rests solely upon the IT organization, it will likely fail. All the projects within the strategy require strong buy-in and participation by the colleges and the functional areas. The way to do that is to have strong, effective shared governance.

Each project in the strategy should have some oversight body, typically a steering committee consisting of the executive sponsor, the project manager, the IT champion, and representative end-users. The steering committee's responsibility is to ensure the project's goals are being met and that the risks that could lead to project failure are identified early and communicated broadly. It is important that the executive sponsor (typically, the Vice Chancellor for the division which is the primary beneficiary of the project) and the CIO have joint responsibility for project.

For the strategy as a whole, the District Technology Committee (DTC) is well-positioned to provide that strong governance. The CIO should report monthly to the DTC on the status of the projects currently being implemented. The DTC, in turn, should report to the Chancellor, who should periodically report to the Board of Trustees on its progress.

DTC should report to the board annually on the progress of the implementing a strategy. This report should focus, not just on project completion, but rather on whether the intended benefits are, in fact, being realized.

Also, because the world and technology are not static, the IT strategy should be revised and updated annually. Principal responsibility for this will lie with the CIO, but the DTC should affirm it and forward it through the governance process for final approval by the Board of Trustees.

Finally, the District should consider using external quality assurance oversight on large, high-risk projects such as Financial Aid or Time, Labor and Absence Management. While this can add 5-10% to the overall cost of a project, it can identify early on factors that can lead to project failure.

Acknowledgments

The following Peralta faculty and staff (and student trustee) were members of the IT strategy workgroup. I would like to thank them all for their enthusiasm, active participation, deep knowledge of the district, and the dedication to serving Peralta's students.

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- Fabian Banga, Faculty, Berkeley City College
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- Karolyn van Putten, president, academic Senate
- Inger Stark, Dean, Laney College
- Rich Copenhagen, Student Trustee
- Ronald (Ron) Gerhard, Vice Chancellor, Finance and Administration
- Deborah Budd, Vice Chancellor, Educational Services
- Michael Orkin, Associate Vice Chancellor, Institutional Research
- Jacob Ng, Vice Chancellor, Student Services
- Trudy Largent, Vice Chancellor, Human Resources and Employee Relations
- Rebecca Kenney, Vice President of Instruction, College of Alameda
- Minh Lam, Associate Vice Chancellor, Information Technology
- Antoine Mehouelley, Network Coordinator, Laney College
- Vincent Koo, Network Coordinator, Berkeley City College
- Patricia Rom, Network Coordinator, Merritt College
- Silvia Cortez, Staff Assistant, Information Technology
- David Betts, Director, Human Resources
- Cody Pelletier, Senior Human Resources Analyst, Human Resources

Appendix 1: Proposed Schedule

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Peralta Project Portfolio - Timeline of IT Strategy Projects

Peralta Project Portfolio : Projects | Timeline of IT Strategy Projects

Timeline of IT Strategy Projects

Project	2012				2013				2014	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
▼ Sustainable IT Infrastructure	[Solid black bar]									
Standards Based Procurement	[Blue bar]									
Rationalize IT Spend with a Consolidated IT Budget	[Blue bar]									
IT Asset and End Device Management	[Blue bar]									
Web Based Email	[Blue bar]									
Upgrade to PeopleSoft ver. 9.1		[Blue bar]								
Reduce TCO with Lease/Service Agreements		[Blue bar]								
Managed Print			[Blue bar]							
Virtualization of Laptops and Desktops					[Blue bar]					
Create a Strategy for Cloud Computing & Virtualization of the Data Center					[Blue bar]					
▼ Business Intelligence	[Solid black bar]									
Financials Data Warehouse			[Blue bar]							
Bond Program Public Reporting Data Warehouse					[Blue bar]					
Update to Student Data Warehouse						[Blue bar]				
HR Data Warehouse						[Blue bar]				
Procurement Data Warehouse								[Blue bar]		
▼ Back Office Efficiency	[Solid black bar]									

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Peralta Project Portfolio - Timeline of IT Strategy Projects



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Appendix 2: Summary of Projects by Priority

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Peralta Project Portfolio - IT Strategy Projects - Priority A

Peralta Project Portfolio : Projects | IT Strategy Projects - Priority A

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IT Strategy Projects - Priority A								
Priority is 'Strategy A'								
Project	Project Manager	Department	Status	Executive Sponsor	Lifecycle Stage	Start Date	Est Deployment Date	Total NPV Cost:
Sustainable IT Infrastructure							7 Projects	
Standards Based Procurement	Silvia Cortez	Purchasing	Medium	Ron Gerhard	Initial Proposal	02-01-2012	04-01-2012	\$44,400
Rationalize IT Spend with a Consolidated IT Budget	Silvia Cortez	Budget/Finance	Low	Ron Gerhard	Initial Proposal	02-01-2012	07-01-2012	\$37,950
Reduce TCO with Lease/Service Agreements	Tony Tortorice	Purchasing	Medium	Ron Gerhard	Initial Proposal	05-01-2012	09-01-2012	\$88,500
Managed Print	Jon Olkowski	Purchasing	Medium	Ron Gerhard	Initial Proposal	07-01-2012	01-15-2013	\$51,000
IT Asset and End Device Management	Jon Olkowski	Information Technology	Low	Tony Tortorice	Requirements Gathering	02-01-2012	07-01-2012	\$197,500
Web Based Email	Jon Olkowski	Information Technology	Medium	Tony Tortorice	Requirements Gathering	02-01-2012	08-01-2012	\$155,500
Upgrade to PeopleSoft ver. 9.1	Tony Tortorice	Educational Services	High	Debby Budd	Requirements Gathering	03-01-2012	12-31-2012	\$1,446,500
TOT								\$2,021,350
Business Intelligence							1 Project	
Financials Data Warehouse	Kyu Lee	Budget/Finance	Low	Ron Gerhard	Initial Proposal	07-01-2012	12-31-2012	\$260,000
TOT								\$260,000
Back Office Efficiency							4 Projects	
Electronic PA Form	Tony Tortorice	Human Resources	Medium	Trudy Largent	Initial Proposal	04-01-2012	09-01-2012	\$481,000
Document Management	Tony Tortorice	General Services	Medium	Sadiq Ikharo	Initial Proposal	02-01-2012	09-01-2012	\$398,000
Student Financial Aid	Tony Tortorice	Financial Aid	High	Jacob Ng	Requirements Gathering	06-01-2012	12-31-2013	\$2,080,000
Time, Labor and Absence Management	Tony Tortorice	Budget/Finance	High	Ron Gerhard	Initial Proposal	07-01-2012	01-01-2012	\$880,000
TOT								\$3,839,000

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Peralta Project Portfolio - IT Strategy Projects - Priority A

Institutional Ability to Deliver								2 Projects
Institutionalize IT Staff Training and Professional Development	Silvia Cortez	Information Technology	Medium	Tony Tortorice	Initial Proposal	03-01-2012	10-01-2012	\$126,800
Implement ITIL-Lite at the Colleges and at the District	Tony Tortorice	Information Technology	High	Wise Allen	Initial Proposal	04-01-2012	06-30-2012	\$160,900
TOT								\$287,700
Mobile Learning								1 Project
Improved Wireless on Campuses	Linnea Wren	General Services	Low	Sadiq Ikharo	Initial Proposal	07-01-2012	06-30-2013	\$300,800
TOT								\$300,800
TOT								\$6,708,850

TOTALS

Strategic Theme	Number of Projects	Total NPV Cost:
Sustainable IT Infrastructure	7	\$2,021,350
Business Intelligence	1	\$260,000
Back Office Efficiency	4	\$3,839,000
Institutional Ability to Deliver	2	\$287,700
Mobile Learning	1	\$300,800
TOTALS (5 groups)	15	\$6,708,850

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Peralta Project Portfolio - IT Strategy Projects - Priority B

Peralta Project Portfolio : Projects | IT Strategy Projects - Priority B

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IT Strategy Projects - Priority B								
Priority is 'Strategy B'								
Project	Project Manager	Department	Status	Executive Sponsor	Lifecycle Stage	Start Date	Est Deployment Date	Total NPV Cost:
Sustainable IT Infrastructure								2 Projects
Virtualization of Laptops and Desktops	Linnea Wren	Information Technology	Medium	Tony Tortorice	Initial Proposal	01-01-2013	09-01-2015	\$998,400
Create a Strategy for Cloud Computing & Virtualization of the Data Center	Tony Tortorice	Information Technology	Low	Tony Tortorice	Initial Proposal	01-01-2013	07-01-2013	\$86,000
TOT								\$1,084,400
Business Intelligence								4 Projects
HR Data Warehouse	Minh Lam	Human Resources	Low	Trudy Largent	Initial Proposal	05-01-2013	09-01-2013	\$159,500
Procurement Data Warehouse	Kyu Lee	Purchasing	Low	David Iwada	Initial Proposal	08-01-2013	12-31-2013	\$159,500
Bond Program Public Reporting Data Warehouse	Kyu Lee	General Services	Low	Sadiq Ikhario	Initial Proposal	01-01-2013	06-30-2013	\$159,500
Update to Student Data Warehouse	Minh Lam	Educational Services	Low	Debby Budd	Initial Proposal	03-01-2013	09-01-2013	\$159,500
TOT								\$638,000
Back Office Efficiency								5 Projects
Classroom Scheduling System	Kyu Lee	Educational Services	Medium	Debby Budd	Initial Proposal	03-01-2013	09-01-2013	\$225,000
PeopleSoft Field Service Module	Minh Lam	General Services	Medium	Sadiq Ikhario	Initial Proposal	01-01-2013	07-01-2013	\$425,000
PeopleSoft Asset Management Module	Minh Lam	General Services	Medium	Sadiq Ikhario	Initial Proposal	06-01-2013	12-31-2013	\$537,500
PeopleSoft Budget Development System	Kyu Lee	Budget/Finance	Medium	Ron Gerhard	Initial Proposal	09-01-2013	06-30-2014	\$600,000
Adjunct FTEF Tracking	Minh Lam	Educational Services	Low	Debby Budd	Initial Proposal	04-01-2013	09-01-2013	\$150,000
TOT								\$1,937,500

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Peralta Project Portfolio - IT Strategy Projects - Priority B

Institutional Ability to Deliver						2 Projects		
Provide Project Management Training for Staff	Silvia Cortez	Information Technology	Low	Tony Tortorice	Initial Proposal	09-01-2012	09-01-2013	\$39,000
Create a Project Management Office	Tony Tortorice	Budget/Finance	Medium	Ron Gerhard	Initial Proposal	07-01-2012	12-31-2012	\$50,000
TOT								\$89,000
TOT								\$3,748,900

TOTALS

Strategic Theme	Number of Projects	Total NPV Cost:
Sustainable IT Infrastructure	2	\$1,084,400
Business Intelligence	4	\$638,000
Back Office Efficiency	5	\$1,937,500
Institutional Ability to Deliver	2	\$89,000
TOTALS (4 groups)	13	\$3,748,900

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Peralta Project Portfolio : Projects | IT Strategy Projects - Priority c

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IT Strategy Projects - Priority c								
<i>Priority is 'Strategy C'</i>								
Project	Project Manager	Department	Status	Executive Sponsor	Lifecycle Stage	Start Date	Est Deployment Date	Total NPV Cost:
Back Office Efficiency								1 Project
PeopleSoft eProcurement	Kyu Lee	Purchasing	High	David Iwada	Initial Proposal	01-01-2014	07-01-2014	\$1,160,000
TOT								\$1,160,000
Mobile Learning								2 Projects
Streaming Content from Smart Classrooms to Mobile Devices	Linnea Wren	Educational Services	Medium	Debby Budd	Initial Proposal	01-01-2014	07-01-2014	\$400,000
Mobile Templates for PeopleSoft/Passport	Minh Lam	Educational Services	Low	Debby Budd	Initial Proposal	03-01-2014	09-01-2014	\$98,000
TOT								\$498,000
TOT								\$1,658,000

Appendix 3: Draft of Potential Projects

Peralta Community College District IT Strategy

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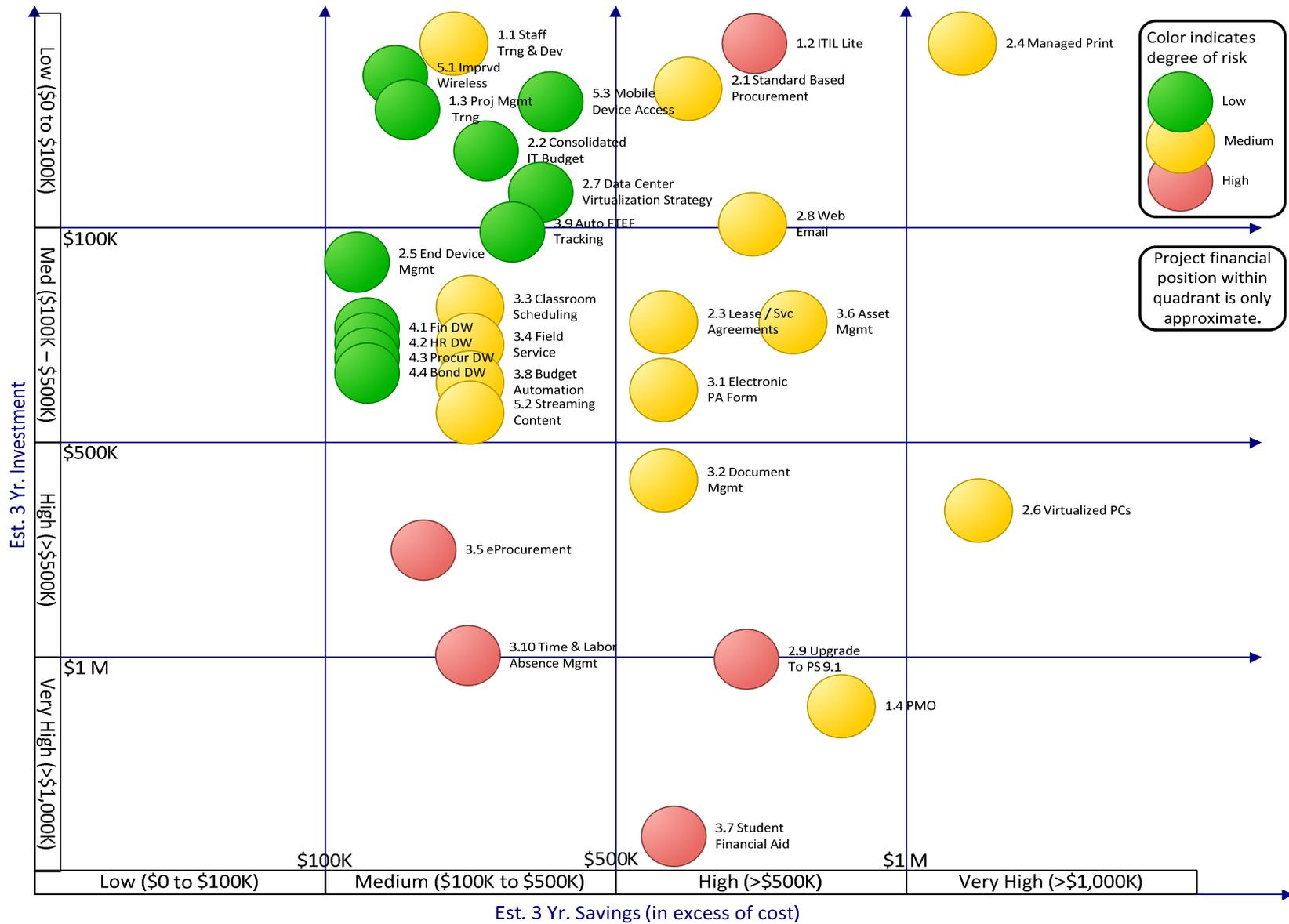
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Relative Cost – Benefit – Risk of Projects – Chart



Relative Cost – Benefit – Risk of Projects – Table

	3 Year Cost	Risk	3 Year Cum Net Benefit
1. Institutional Ability to Deliver			
1.1. Institutionalize Staff Training and Professional Development	Low	Medium	Medium
1.2. Implement ITIL Lite at District and Colleges	Low	High	High
1.3. Provide Project Management Training for Staff	Low	Low	Medium
1.4. Create a Project Management Office	High	Medium	High
2. Sustainable IT Infrastructure			
2.1. Standards Based Procurement	Low	Medium	High
2.2. Rationalize Total IT Spend - Consolidated IT Budget	Low	Low	Medium
2.3. Reduce TCO with Lease / Service Agreements	Medium	Medium	High
2.4. Managed Print	Low	Medium	High
2.5. IT Asset and End Device Management	Medium	Low	Medium
2.6. Virtualization of Laptops and Desktops	High	Medium	High
2.7. Strategy for Cloud Computing & Virtualization of the Data Center	Low	Low	Medium
2.8. Web Based Email	Low	Medium	High
2.9. Upgrade to PS 9.1	High	High	High
3. Reduce Back Office Costs			
3.1. Electronic PA Form	Medium	Medium	High
3.2. Document Management	High	Medium	High
3.3. Classroom Scheduling	Medium	Medium	Medium
3.4. Field Service	Medium	Medium	Medium

	3 Year Cost	Risk	3 Year Cum Net Benefit
3.5. eProcurement	High	High	Medium
3.6. Implement Asset Management (added based on our conversation)	Medium	Medium	High
3.7. Student Financial Aid System	High	High	High
3.8. Automated Budget Development System	Medium	Medium	Medium
3.9. Automated Adjunct FTEF Tracking	Low	Low	Medium
3.10. Implement PS Time & Labor and Absence Management Modules	High	High	Medium
4. Business Intelligence			
4.1. Financial DW	Medium	Low	Medium
4.2. HR DW	Medium	Low	Medium
4.3. Procurement DW	Medium	Low	Medium
4.4. Bond Program Public Reporting DW	Medium	Low	Medium
5. Mobile Learning			
5.1. Improved Wireless on Campus	Low	Low	Medium
5.2. Streaming Content to Wireless Devices & Other Web Platforms	Medium	Medium	Medium
5.3. Mobile Templates for PS/Passport	Low	Low	Medium

Key

3-Year Cumulative Cost:

Low <\$100K	Medium \$100K to \$500K	High >\$500K
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Where cost was able to be reasonably estimated the total project cost over 3 years has been used. Where a financial estimate was not possible a subjective estimate based on professional experience is offered.

Risk:

Low	Medium	High
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Risk of successful project completion and ability to achieve the estimated benefits has been subjectively evaluated. The larger and more complex the project the higher the risk. The requirement for an outside contractor generally indicates more risk. The requirement for significant behavior change on the part of the organization that might be resisted and therefore challenge benefits (change management) indicates higher risk.

3-Year Cumulative Net Benefit:

Low <\$100K	Medium \$100K to \$500K	High >\$500K
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Where net financial benefit (excess of savings over cost) cumulative over three years could be reasonably estimated this objective standard has been used. Where net financial benefit cannot be estimated, a subjective evaluation is offered. Generally, those projects which are required to maintain the operational integrity of the institution are always rated high, as are project whose benefit accrues to the largest number of users.

1.1 Institutional Ability to Deliver: Institutionalize Staff Training & Professional Development

Opportunity:

There are three related projects in this section:

1.1 Staff Training & Professional Development: focus on skills and knowledge to do their currently assigned tasks with greater expertise.

1.2 ITIL-Lite: focus on the process of IT service delivery to increase effectiveness and customer satisfaction.

1.3 Project Management: focus on skills to effectively manage IT-related change projects.

All three address skills and knowledge and develop staff in different dimensions. In this project we identify skills and knowledge needed to perform assigned technical tasks.

As an educational institution Peralta lives in a world in which information technologies evolve at breakneck speed driven by innovation in the commercial sector. We can benefit from these advances only to the extent that our IT leadership and staff remain conversant with all of these developments that grow increasingly complex and rapidly make current knowledge not only outdated but potentially costly and inefficient.

To cite just one example detailed in a different project proposal, fixed and owned servers and desktop computers are rapidly being replaced by less costly and more functional cloud computing and virtual machines. No matter how much expertise our IT staffs possess in the older visions of IT systems, there is real danger of unnecessarily costly and inefficient expenditures unless we equip our IT staffs with the skills and knowledge to understand and apply new developments.

To a limited extent, new developments can be introduced through the use of outside experts but ultimately the planning and maintenance of each new system or technology must be accomplished by our internal IT staffs. We must allocate both financial resources and time to ensure that our own employees are competent to support these new developments, and competent to manage the increasingly complex implementation and maintenance projects required to benefit from them.

The intent is to train all of the District IT staff, approximately 15 individuals, plus campus IT support employees numbering about 30 for a total of about 45.

Recommended Actions:

1. Identify strategically important skills and knowledge that must be possessed by IT staff.
2. Evaluate gap between current and required skills. Define specific needs by individual including integration into potential career paths and annual performance evaluations.

3. Define specific training programs and schedules, either internal or external, and lay out a detailed three year rolling plan. The plan is updated at least annually including the assessment of current skill levels.
4. Develop and implement a skills tracking component to employee records allowing tracking and achievement levels.
5. Budget and implement.

Discussion:

None.

Investment:

Investment is estimated at \$1,000 per person per year combined for projects 1.1 and 1.2 applied across approximately 15 district IT staff. One-half of this cost is reflected in each of the projects on an annual basis. No fixed costs are anticipated. Additional management activities are assumed to be absorbed into normal duties by the CIO and other supervisors. The three year cumulative cost for this project is estimated at \$22,500.

Summary of Net Benefits:

The benefits of this project are largely non-quantifiable but are indirectly expressed in terms of better job performance, increased employee retention, increased customer satisfaction, increased quality of decision making and actions for IT, and a generalized decrease in the future requirement for outside consultants.

	1st year	2nd year	3rd year
Quantifiable savings	not estimated	not estimated	not estimated
Expected investment	\$7,500	\$7,500	\$7,500
Annual net savings (cost)	-\$7,500	-\$7,500	-\$7,500
Cumulative savings (cost)	-\$7,500	-\$15,000	-\$22,500

Sources of Risk:

The risk for this project is evaluated as medium. Sources include the willingness of staff to participate and the degree to which they apply the learning. Also the willingness of leadership in future years to maintain and reinforce the process.

Resource Constraints:

None specific.

Interdependencies:

1.1 Staff Training & Professional Development: focus on skills and knowledge to do their currently assigned tasks with greater expertise.

1.2 ITIL-Lite: focus on the process of IT service delivery to increase effectiveness and customer satisfaction.

These two projects share a common budget and need to be coordinated from a budget and expenditure perspective, but their individual implementation schedules are independent.

1.2 Institutional Ability to Deliver: Implement ITIL-Lite at the Colleges and at the District

Opportunity:

There are three related projects in this section:

1.1 Staff Training & Professional Development: focus on skills and knowledge to do their currently assigned tasks with greater expertise.

1.2 ITIL-Lite: focus on the process of IT service delivery to increase effectiveness and customer satisfaction.

1.3 Project Management: focus on skills to effectively manage IT-related change projects.

All three address skills and knowledge and develop staff in different dimensions. In this project we identify skills and knowledge needed to improve the quality of IT service delivery.

In order to improve IT service delivery and satisfy all of Peralta's internal IT customers we need to establish a consistent and regular set of standards and methodologies that will guide and control both the district and campus IT staffs. While it is possible to subscribe to very complex and rigorous methodologies, Peralta needs to quickly adopt and institutionalize a reasonable and workable subset of these best practices so that we achieve the benefits without becoming overly bound by detailed methodologies.

The basis for this approach should be the adoption of a modified version of the ITIL methodology which we refer to here as ITIL-Lite. (ITIL: Information Technology Infrastructure Library). ITIL is the most widely adopted approach for IT Service Management in the world. It provides a practical, no-nonsense framework for identifying, planning, delivering and supporting IT services to the business.

Adoption of this approach will involve defining those standards, best practices, and methodologies that best fit Peralta's circumstance, training, institutionalizing these practices in our policies and procedures, and managing for compliance including utilizing these standards in the performance reviews of our IT staffs.

The intent is to train all of the District IT staff, approximately 15 individuals, plus campus IT support employees numbering about 30 for a total of about 45.

Recommended Actions:

1. Review and identify those elements of the ITIL body of knowledge that are appropriate for Peralta.
2. Formalize and codify this in Board Policies, Administrative Regulations, and departmental procedures so that department and college IT staffs and our internal customers are appropriately bound to these best practices.
3. Publish and train.

4. Monitor for compliance and reinforce.

Discussion:

ITIL is the most widely adopted approach for IT Service Management in the world. It provides a practical, no-nonsense framework for identifying, planning, delivering and supporting IT services to the business.

ITIL advocates that IT services must be aligned to the needs of the business and underpin the core business processes. It provides guidance to organizations on how to use IT as a tool to facilitate business change, transformation and growth.

The ITIL best practices are currently detailed within five core publications which provide a systematic and professional approach to the management of IT services, enabling organizations to deliver appropriate services and continually ensure they are meeting business goals and delivering benefits.

The five core guides map the entire ITIL Service Lifecycle, beginning with the identification of customer needs and drivers of IT requirements, through to the design and implementation of the service into operation and finally, on to the monitoring and improvement phase of the service.

Adopting ITIL can offer users a huge range of benefits that include:

- improved IT services
- reduced costs
- improved customer satisfaction through a more professional approach to service delivery
- improved productivity
- improved use of skills and experience
- improved delivery of third party service.

<http://www.itil-officialsite.com/>

There are no fixed costs associated with adopting ITIL and the cost of training and books is included in the per person estimate below.

District IT already possess an ITIL compliant service ticket system, Footprints, for which the district currently pays a license fee of approximately \$10,000 per year. No additional cost is anticipated and the use of Footprints could be extended to the colleges in support of their implementation of ITIL.

Investment:

Investment is estimated at \$1,000 per person per year combined for projects 1.1 and 1.2 applied across approximately 15 district IT staff. One-half of this cost is reflected in each of the projects on an annual basis. No fixed costs are anticipated. Additional

management activities are assumed to be absorbed into normal duties by the CIO and other supervisors. The three year cumulative cost for this project is estimated at \$22,500.

Summary of Net Benefits:

The benefits of this project are largely non-quantifiable but are indirectly expressed in terms of better job performance and increased customer satisfaction. Since improvement of IT service delivery both from district and from the college-based IT staffs is widely desired by all users, the impact and therefore the benefit of this project is high.

	1st year	2nd year	3rd year
Quantifiable savings	not estimated	not estimated	not estimated
Expected investment	\$7,500	\$7,500	\$7,500
Annual net savings (cost)	-\$7,500	-\$7,500	-\$7,500
Cumulative savings (cost)	-\$7,500	-\$15,000	-\$22,500

Sources of Risk:

Because this project involves adopting a formal standards-based approach to IT service delivery and because those standards must be observed by both district and college providers and users the level of behavioral change is high and therefore risk is high. Risk also relates to the willingness of leadership to support and sustain this change in the future.

Resource Constraints:

None.

Interdependencies:

1.1 Staff Training & Professional Development: focus on skills and knowledge to do their currently assigned tasks with greater expertise.

1.2 ITIL-Lite: focus on the process of IT service delivery to increase effectiveness and customer satisfaction.

These two projects share a common budget and need to be coordinated from a budget and expenditure perspective, but their individual implementation schedules are independent.

1.3 Institutional Ability to Deliver: Provide Project Management Training for Staff

Opportunity:

There are three related projects in this section:

1.1 Staff Training & Professional Development: focus on skills and knowledge to do their currently assigned tasks with greater expertise.

1.2 ITIL-Lite: focus on the process of IT service delivery to increase effectiveness and customer satisfaction.

1.3 Project Management: focus on skills to effectively manage IT-related change projects.

All three address skills and knowledge and develop staff in different dimensions. In this project we identify skills and knowledge needed to improve the effective delivery of IT projects.

In addition to technical competence, our district and campus IT staff needs to be able to efficiently and effectively manage the many change projects we undertake each year through which our IT capabilities are enhanced. A major restriction on our ability to improve quickly is our very limited capability to manage several complex projects simultaneously.

Project management is not an intuitively obvious discipline and to create this capability we must both train our staff in these principles but also then coach and mentor them through their early experiences to ensure success.

The most commonly accepted body of knowledge for this comes from the Project Management Institute which also awards the well-recognized PMP (project management professional) certification. We propose to invest in this level of training and the follow on support necessary to ensure that we have the internal capability to manage our many projects.

The intent is to train supervisory level District IT staff, approximately 6 individuals, plus selected campus and district business unit supervisory staff numbering about 10 for a total of about 15.

Recommended Actions:

1. Evaluate gap between current and required skills by individual.
2. Redefine specific job descriptions to focus on project management skills in addition to other required technical skills. Integrate into potential career paths and annual performance evaluations.
3. Evaluate staffing levels. Can this be accomplished with the current staff size or must staff be increased?
4. Define specific training programs, most likely based on the PMI body of knowledge leading to PMP certification. Layout detailed schedules and a specific

three year rolling plan. The plan is updated at least annually including the assessment of current skill levels.

5. Develop and implement a skills tracking component to employee records allowing tracking and achievement levels.
6. Budget and implement.

Discussion:

None.

Investment:

We propose to invest in training for three individuals to bring them to full PMP certification at about \$5K each for initial training and \$1,000 per year each thereafter to maintain that certification. The remaining 12 individuals will receive extensive but introductory level training at a cost of about \$1,000 each in the first year with no investment thereafter. The cumulative 3 year investment is expected to be \$33,000.

Summary of Net Benefits:

The benefits of this project are largely non-quantifiable but are indirectly expressed in terms of better job performance, increased employee retention, increased customer satisfaction, increased quality of decision making and actions for IT, and a generalized decrease in the future requirement for outside consultants. The benefit will be perceived in increased successful project delivery by users of these projects and is therefore considered medium.

	1st year	2nd year	3rd year
Quantifiable savings	not quantifiable	not quantifiable	not quantifiable
Expected investment	\$27,000	\$3,000	\$3,000
Annual net savings (cost)	(\$27,000)	(\$3,000)	(\$3,000)
Cumulative savings (cost)	(\$27,000)	(\$30,000)	(\$33,000)

Sources of Risk:

Low.

Resource Constraints:

None.

Interdependencies:

None.

1.4 Institutional Ability to Deliver: Create a Project Management Office

Opportunity:

Project management skills should be widely trained (see project 1.3) and Peralta's limited capability for project management, our bandwidth for managing new projects, is frequently the reason that projects are delayed or cancelled regardless of their benefit.

The difference between having been exposed to project management skills and being a truly professional project manager is considerable. The project managers required to allow Peralta to move its own projects forward without the use of outside project managers are senior level experienced project managers with extensive experience and well developed project leadership skills.

Peralta needs to establish and formalize a Project Management Office (PMO) reporting at the highest executive levels to the Vice Chancellor for Finance & Administration and staffed with three new hire Project Managers. The concept of the PMO is well developed and has a well-known body of knowledge and methodologies which will need to be formalized through district policy to ensure that all projects over a certain dollar threshold, not just IT projects must be supported by the PMO using the district's acknowledged PM methodology.

A PMO manager is typically assigned to a project over and above the internal or external project manager that may be assigned. This is true particularly where project management is provided by an outside vendor conducting a project on our behalf.

The role of the PMO is to mitigate project risks which may not be well recognized or controlled particularly by an external vendor, and to coordinate and plan acceptance testing by Peralta users to ensure that the product delivered meets the agreed requirements. (These activities are sometimes described as IV&V independent validation and verification.)

A properly staffed and well managed PMO will significantly reduce the cost of external consultants and dramatically increase the number of projects that can be undertaken, and particularly the number of projects that are completed successfully.

While it is possible that existing personnel may eventually be promoted to this role, it is important that initially these be very well qualified new hires who bring this specific set of experiences and disciplines with them.

Recommended Actions:

1. Formally define the roles and responsibilities of the PMO and establish a body of best practices based on ITIL or other PMO sources that define how the PMO should operate.
2. Hire three highly qualified project managers.
3. Establish the PMO.
4. Support the PMO with appropriate district policies and administrative regulations to ensure that large or important projects are always conducted with the support of the PMO.

Discussion:

Given the volume of major IT and non-IT projects that will be undertaken in just the next year, we propose that all three project managers be hired immediately.

Investment:

The cost of three new hire project managers is estimated at \$150,000 each fully loaded for a total of \$450,000. This assumes a salary of \$110K to \$120K plus indirect costs. The three year cumulative cost is estimated to be \$1,350,000.

There are no expected fixed costs associated with this plan.

Summary of Net Benefits:

The benefit of a PMO organization derives from three sources:

- The ability to take on more improvement projects than currently possible. Peralta frequently defers projects because of lack of ‘bandwidth’ to manage and monitor them.
- Increased attention to mitigating risk and assuring acceptance will reduce overall project time and should eliminate rework due to unclear requirements.
- A reduction in cost as we are able to handle more projects internally without the requirement for more costly external consultants to fill these roles.

While points 1 and 2 undoubtedly have very high quantifiable value, it would be speculative to assign a specific value here. However, based on our professional experience we are able to closely estimate that the cost of an external consultant in the project management role is on the order of \$120,000 per major project. Each PMO manager is conservatively assumed to be able to support at least two projects per year, directly replacing the cost of an outside contractor in this role. The avoided cost then is \$720K per year (\$120K x 2 x 3) and allows us to take on the full range of major projects needed by Peralta.

Note that although the avoided cost is lower than the investment, this project is still rated a high benefit based on increasing Peralta’s capability to manage a much larger number of its own projects and manage projects of high complexity where judgment regarding the goals and objectives of the district must be considered.

	1st year	2nd year	3rd year
Avoided cost of hiring three external project managers per year	\$720,000	\$720,000	\$720,000
Cost of three new hire internal project managers, fully loaded.	(\$450,000)	(\$450,000)	(\$450,000)
Annual net savings (cost)	\$270,000	\$270,000	\$270,000
Cumulative savings (cost)	\$270,000	\$540,000	\$810,000

Sources of Risk:

Risk is rated medium based on the following factors:

- Hiring risk: Ability to establish position descriptions and salary levels appropriate to higher the quality of individuals needed to fill this role.

- Hiring risk: Ability to hire and retain individuals of this caliber.
- Policy risk: Must establish district-wide policies and administrative regulations so that projects over the defined threshold receive the services of the PMO.
- Implementation risk: Top administration and project executive sponsors must actively support the utilization of professional project managers in the execution of their projects.

Resource Constraints:

Principally budgetary.

Interdependencies:

None.

2.1 Sustainable IT Infrastructure: Standards Based Procurement

Opportunity:

Note that the first six projects in this series are all aimed at reducing the total cost of ownership (TCO) of the very considerable investment Peralta has in laptops, desktops, and printers.

2.1 Standards Based Procurement - reducing acquisition cost.

2.2 Rationalize Total IT Spend - TCO cost reduction

2.3 Lease / Service Agreements - reduce install, support, and maintenance costs

2.4 Managed Print - reduce cost of printers

2.5 IT Asset & End Device Management - reduce maintenance and support cost

2.6 Virtualization of Laptops and Desktops - reduce acquisition and TCO costs.

There is currently no coordination or standardization of IT hardware or software purchasing among the colleges and the district, or even among college departments. Peralta is penalized in two ways by this practice:

1. Inability to achieve lower cost by failing to consolidate purchases.
2. Sustaining much higher support costs and lower support quality by virtue of the need to support many different brands or types of the same product as well as maintaining inefficient inventories of the disposables for many different product types (e.g. printer ink).

We propose that the colleges agree on standard brands and configurations for all major hardware and software purchases and that these purchases be conducted centrally, probably quarterly to achieve lowest cost.

Recommended Actions:

- Through the DTC or similar governance group, establish standardized requirements for major technology purchases such as laptops, desktops, software, and other items frequently purchased in a decentralized process.
- District IT and Purchasing will establish standard brands and specifications and create contracts with suppliers that provide significant discounts using 'highest common denominator' specifications.
- Establish Board Policies, administrative regulations, and department procedures to funnel all specified IT purchasing into the standardized purchasing program where orders are consolidated and placed probably quarterly to achieve the greatest volume discounts.

Discussion:

We estimate that somewhat more than one-half of machines purchases by the colleges each year could be consolidated, the balance being potentially subject to even lower cost through virtualization (see separate project).

This is not intended to limit the discretion of the colleges in any material way and we anticipate for example, developing perhaps three standard configurations for desktops based on use, speed, storage, and similar factors. Through the discounts to be achieved it is likely that each of these levels will be ‘highest common denominator’, that is more capable than most requirements.

Investment:

There are not fixed or variable costs associated with this project. An appropriate committee led by Purchasing, probably the DTC or an expanded version thereof should be able to agree on standardized specs in a short period of time.

Summary of Net Benefits:

Our experience with implementing such a program at LAUSD was a reduction of 7% to 9% in direct cost. The four colleges currently have requests for bond spending on IT totaling \$13.2 Million, almost exclusively for hardware of this type. If ½ were subject to centralized purchasing and is we achieved a reduction in direct cost of 8%, the saving would be \$1.06 Million. For purposes of this project we use the more conservative estimate of a 5% savings or \$660K.

This is reflected as a one time savings since exactly when these bond funds will be released for disbursement is not currently known. The savings may be spread over multiple years if the spend is likewise distributed.

Since all college IT spending in recent history has been bond funded no forward savings are forecast, however, clearly if there are additional purchases in this category over those forecast above, additional savings would accrue.

Not estimated is an additional very considerable reduction in direct cost from reduced and more efficient purchase and inventory of disposables associated with these machines, and reduced support labor as fewer standard types allow much better efficiency in setup, maintenance, and repair.

	1 st year	2 nd year	3 rd year
Estimated savings on ½ of currently requested college IT requests in this category, assumed to be made in one year.	\$660,000	\$0	\$0
Project cost	\$0	\$0	\$0
Annual net savings (cost)	\$660,000	\$0	\$0
Cumulative savings (cost)	\$660,000	\$660,000	\$660,000

Sources of Risk:

Risk is rated as medium based on the willingness of the colleges to ensure that all of their IT purchases pass through this program.

Resource Constraints:

None.

Interdependencies:

There is no sequencing interdependency; however savings are interrelated with project 2.4 Managed Print and project 2.6 Virtualization of Laptops and Desktops.

2.2 Sustainable IT Infrastructure: Rationalize Overall PCCD IT Spend with a Consolidated IT Budget

Opportunity:

Note that the first six projects in this series are all aimed at reducing the total cost of ownership (TCO) of the very considerable investment Peralta has in laptops, desktops, and printers.

2.1 Standards Based Procurement - reducing acquisition cost.

2.2 Rationalize Total IT Spend - TCO cost reduction

2.3 Lease / Service Agreements - reduce install, support, and maintenance costs

2.4 Managed Print - reduce cost of printers

2.5 IT Asset & End Device Management - reduce maintenance and support cost

2.6 Virtualization of Laptops and Desktops

The objective of this project is not to centralize control over IT budgets or to reduce the flexibility of the colleges to define their IT needs but to increase the efficiency of the overall IT spend and to reduce overall IT spend as a proportion of the total budget.

If you don't know what you're spending you can't control it. The goal is to create visibility for total PCCD IT spend by consolidating all individual departmental, college, and district IT budgets into a single summary document that is reflected in the high level PCCD budget as a single line item. This provides maximum visibility into the total amount and allows administrators to rationalize the total expense.

The simple act of providing data in this consolidated form typically has the impact of greater coordination of IT expenditure and reduction of total spend as a percentage of total due to increased visibility.

Recommended Actions:

1. Add to the annual budget process a procedure that accumulates all IT expenditures from all sources and consolidates it into a single 'consolidated IT budget' document during budget development.
2. Benchmark and conduct other reviews to determine what the appropriate total level of IT spend should be.
3. Review and revise the 'consolidated IT budget' as a whole during budget review and approval.

Discussion:

We anticipate that this can be accomplished without the addition of significant labor or time to the budgeting process by simply having the colleges fill out a summary survey form that would accumulate all their IT related items in a standard format. The process would occur only once per budget cycle, probably in April or May, after the budgets have

been fully negotiated but not yet approved by the board. These four inputs plus the district’s similar summary could be easily rolled up into a consolidated budget document.

Investment:

There are no direct costs associated with this project.

Summary of Net Benefits:

The objective of this project is to bring focus to PCCD’s overall IT spend. For large organization like our own it would not be unusual to find that overall IT spend is in the range of 5% of total revenues, however, our total spend is completely unknown.

The first issue is that because most of our IT spend comes from bond funding our spend pattern over several years is very ‘lumpy’.

A second issue is that the appropriate amount of spend as percentage of total revenues is completely unknown. Once the figures are consolidated we will then have the ability to benchmark against similar organization and at a high level decide whether that number should be 2%, 5%, 7% or some other value.

Organizations that have intentionally brought focus on total IT spend have been able to drive down the number substantially through better coordination and more informed decision making. For example there is a well-documented case study in which HP drove its overall cost of IT from 4% to 2% between about 2002 and 2008. IBM had a similar experience.

Since overall IT spend is not currently known, we don’t attempt to estimate a direct cost reduction. In fact we may determine that overall IT spend is too low. However, is we were to emulate HP’s results of reducing overall spend by half then cumulative savings over multiple years could easily be on the order of \$5 Million to \$10 Million. At this stage of the project our goal is simply to bring visibility to the total spend which will have a least a medium benefit based on better coordination and the beginning of the discussion of how much that spend should be.

	1st year	2nd year	3rd year
Quantifiable savings	not quantifiable	not quantifiable	not quantifiable
Expected investment	\$0	\$0	\$0
Annual net savings (cost)	\$0	\$0	\$0
Cumulative savings (cost)	\$0	\$0	\$0

Sources of Risk:

The risk of being able to produce a consolidated IT budget based on budget summarization is low.

Resource Constraints:

None.

Interdependencies:

None.

2.3 Sustainable IT Infrastructure: Reduce Total Cost of Ownership by Shifting to Lease and Service Agreements for Desktop Installations

Opportunity:

Note that the first six projects in this series are all aimed at reducing the total cost of ownership (TCO) of the very considerable investment Peralta has in laptops, desktops, and printers.

2.1 Standards Based Procurement - reducing acquisition cost.

2.2 Rationalize Total IT Spend - TCO cost reduction

2.3 Lease / Service Agreements - reduce install, support, and maintenance costs

2.4 Managed Print - reduce cost of printers

2.5 IT Asset & End Device Management - reduce maintenance and support cost

2.6 Virtualization of Laptops and Desktops

There are several strategies to reduce the total cost of ownership (TCO) of Peralta's 4,570 laptop/desktops. We estimate conservatively that 50% of these units can be virtualized which is discussed in a separate project. In this project we discuss the 50% of laptop/desktops that cannot be virtualized (most likely because they are high power specialized machines such as CAD/CAM workstations or are Apple products).

It has been Peralta's practice to replace student and staff computers from bond funds instead of the normal practice of establishing a four or five year replacement cycle and replacing 20% of the inventory each year. The colleges have current requests for \$13.2 Million in IT expenditures from bond funds, almost all of which is for personal computers and peripherals. There are several problems with this approach.

Since these are for the most part replacement units, a legal review may find that using bond funds for this purpose is not appropriate. Also, given declining real estate values and the shrinking demographic of our local region, bond funding may simply not be available at the time or in the amount needed to continue this practice in the future.

These very infrequent very large purchases result in our receiving many more units than we can reasonably install in a short period of time. Our local inventory still contains units from similar past purchases that were never installed which are pure waste. Since price discounts can be had just as readily for smaller regular purchases, these large purchases result in unused machines and machines that are only finally installed after they could have been better replaced with more up to date units.

There are two steps Peralta needs to take to resolve this.

1. Discontinue use of bond funds for replacement PCs and implement a program of regular replacement, probably on a four or five year schedule, budgeting and purchasing replacements for 20% of units each year. These should be acquired using lease financing so that even large single year purchases are eliminated in favor of a regular string of small monthly payments that are much easier to budget.

2. Include in the lease purchase extended warranties and implementation and maintenance services. If not available from the vendor, then engage this service from a third party firm. At LAUSD we had a very good experience with an outside firm which for about \$200 per unit received and imaged the new machines, installed and checked them on site, provided maintenance and repair over the life of the machine, and provided an immediate replacement if the machine could not be repaired on site.

These steps would dramatically reduce the backlog caused by initial receipt, imaging, and installation, and essentially eliminate the support labor required for maintenance and repair.

Switching to lease finance and recognizing that bond funding is not appropriate for replacement units will move expense on to the general fund but using the approach of monthly lease payments will be both easy to budget and give the required visibility to this expense.

Recommended Actions:

Plan and execute a transition in IT spending over two or three years to replace major hardware and software purchases with lease agreements, reducing the use of bond funds to zero for this purpose and establishing a policy and practice of specified replacement at either four or five years.

Discussion:

None.

Investment:

No direct costs are associated with this program. This is a change from one method of payment to another.

The use of an outside service for receipt, imaging, installation, service, and replacement adds about 20% to the cost of the unit but is completely offset by reduced (or currently unmet) labor costs.

These costs are not directly quantified but are assumed to be in the medium category over a period of three years.

Summary of Net Benefits:

The benefits of this program are all qualitative and involve no actual increase or decrease in cost.

- Since computers would be replaced on a regular five year schedule, user satisfaction would be higher as the colleges could prioritize internally which units are most in need of replacement.
- Funding would be continuously available so there would no longer be long periods in which replacements are simply not available.
- The extremely long waits for internal staff to receive, image, and implement the machines would be replaced by outside service absorbed in the overall discounted

price of the units, leading to elimination of machines that are long delayed, in some cases outdated when installed, and in some cases never installed.

- Using an outside service contract and extended warranties should dramatically improve user satisfaction with the speed and quality of repair and free internal staff for

Since these benefits impact all Peralta users and most students, the benefit is categorized as high.

	1st year	2nd year	3rd year
Quantifiable savings	not quantifiable	not quantifiable	not quantifiable
Expected investment	\$0	\$0	\$0
Annual net savings (cost)	\$0	\$0	\$0
Cumulative savings (cost)	\$0	\$0	\$0

Sources of Risk:

Establishing and managing this program has some administrative complexity and the risk is categorized as medium.

Resource Constraints:

The switch from bond funding to general funding, albeit with small annual commitments must be considered a constraint.

Interdependencies:

This project is interdependent with project 2.6 Virtualization of Laptops & Desktops based on the number of units finally determined to fall into these two major categories.

2.4 Sustainable IT Infrastructure: Managed Print

Opportunity:

Note that the first six projects in this series are all aimed at reducing the total cost of ownership (TCO) of the very considerable investment Peralta has in laptops, desktops, and printers.

2.1 Standards Based Procurement - reducing acquisition cost.

2.2 Rationalize Total IT Spend - TCO cost reduction

2.3 Lease / Service Agreements - reduce install, support, and maintenance costs

2.4 Managed Print - reduce cost of printers

2.5 IT Asset & End Device Management - reduce maintenance and support cost

2.6 Virtualization of Laptops and Desktops

One of the areas of greatest financial inefficiency in many organizations and one that is largely hidden from view is the investment in printers and their disposable supplies. Our investment in physical devices is far too great (many offices have small personal printers that are under-utilized). The variety of printer types and brands requires the maintenance of large (largely hidden) expenditures for inventories of consumable paper and toner cartridges (hidden in departmental office supply budgets). The inability to see the true total cost of each print allows users to be inefficient in the way they utilize printers producing many more hard copies than may be necessary when electronic format may have sufficed.

There is a broad movement among printer manufacturers to provide ‘managed print’. This means that all of the equipment cost, repair and replacement cost, and all of the consumables costs are borne by the service provider and we are charged on a straight per-copy basis.

The total cost of print typically declines significantly. There is wide spread use of conveniently located network printers that may provide color capability and scan capability not currently available to users on their personal office printers. Most importantly there is the ability to directly relate the cost of each copy to a specific department or project instead of being lost in overhead accounts which encourages further efficiency and cost reduction. There is also labor savings where our own labor is currently used to receive, track, inventory, and distribute disposables.

Recommended Actions:

1. Seek proposals from appropriate suppliers to convert 100% of Peralta’s printer needs to managed print and implement.
2. Evaluate and implement.

Discussion:

Part of the project design is a commitment that no user will be more than say 30 feet from a network printer. While this may be viewed as an inconvenience by some users and as a status symbol or perk by some senior users, the purchase, maintenance, and support of individual office printers must be eliminated. Exceptions must be kept to a minimum where privacy and confidentiality demands are legitimate, perhaps in legal and HR.

Investment:

There is no fixed or variable cost associated with this project other than the cost per copy charged by the managed print vendor. We assume a project manager will be required during implementation but have not assigned a cost since this may be either internal or external.

Summary of Net Benefits:

During implementation, the vendor will evaluate and identify all the existing machines that are to be replaced in the program. Based on a recent count, we believe that there are approximately 1,300 printers in the district and that essentially all would be replaced with new centralized higher-functionality machines. Even those currently on lease will be bought out by the new vendor and replaced.

While the total cost of our district-wide print is unknown since it is hidden in so many different budgets, several industry benchmarks allow us to estimate that the district, with about 1,200 FTE needing printer support incurs an annual total cost of \$1,200,000 (\$100 per year per user).

Typical managed print programs offer savings in the range of 30% to 40%. Using 35% savings, Peralta would reduce overall cost to \$780,000 for an annual savings of \$420,000.

	1 st year	2 nd year	3 rd year
Annual net savings	\$420,000	\$420,000	\$420,000
Cumulative savings	\$420,000	\$840,000	\$1,260,000

Sources of Risk:

There is some change management risk judged to be medium in scale from users resisting giving up their personal printers.

Resource Constraints:

None.

Interdependencies:

None.

2.5 Sustainable IT Infrastructure: IT Asset and End Device Management

Opportunity:

Note that the first six projects in this series are all aimed at reducing the total cost of ownership (TCO) of the very considerable investment Peralta has in laptops, desktops, and printers.

2.1 Standards Based Procurement - reducing acquisition cost.

2.2 Rationalize Total IT Spend - TCO cost reduction

2.3 Lease / Service Agreements - reduce install, support, and maintenance costs

2.4 Managed Print - reduce cost of printers

2.5 IT Asset & End Device Management - reduce maintenance and support cost

2.6 Virtualization of Laptops and Desktops

IT Asset and End Device Management software allows individual desktop computers and servers to be automatically inventoried, including their software contents, and patches and upgrades to be applied centrally and remotely.

In the past, these activities required IT staff to physically visit the machine or for the machine to be brought to IT for upgrade. This is extremely labor inefficient.

In addition to remotely servicing the machines, this software also allows us to track the utilization of non-standard or expensive software packages that may be significantly under-utilized or lost at the time of machine replacement and disposal.

It also offers significant energy savings as it can be programmed to turn off any machine left on the network after a predetermined period on non-use.

Recommended Actions:

Purchase and implement an appropriate IT Asset and End Device Management application such as Absolute Manage.

Discussion:

None.

Investment:

The software will require an investment of approximately \$100,000 in the first year and \$20,000 license and maintenance in following years.

The three year cumulative investment is calculated to be approximately \$140,000.

Summary of Net Benefits:

1. The system eliminates the requirement for IT staff to physically visit a machine to perform upgrades, re-imaging, to inventory software, or to apply patches. This

time savings is estimated at 1 FTE per campus or about \$400,000 fully loaded. However, since the labor will be reallocated to higher value tasks, no absolute savings is assumed.

2. Achieving and maintaining a full hardware and software inventory will reduce new purchase requirements and the time required for annual inventory. Since the labor will be reallocated to higher value tasks, no absolute savings is assumed.
3. Infrequently used and expensive software (e.g. MS Project, Photoshop) will not be inadvertently lost when machines are scraped and can be automatically moved from one machine to another significantly reducing new software purchase cost. This savings is not practical to estimate but is likely to be on the order of \$10,000 to \$50,000 per year.
4. Significant energy savings can be achieved by using the feature that automatically turns off machines after a predetermined period of non-use. Based on PG&E estimates, we calculate a savings of \$15 per machine per year across all of Peralta's 4,570 PCs or \$69,000 per year recurring.
5. The software purchase is eligible for a first year PG&E rebate of \$15 per PC, an additional \$69,000 is available in the first year.

	1 st year	2 nd year	3 rd year
Labor reduction and decreased purchase requirements	not estimated	not estimated	not estimated
Recurring annual energy savings	\$69,000	\$69,000	\$69,000
First year PG&E rebate	\$69,000		
Implementation costs	(\$100,000)	(\$20,000)	(\$20,000)
Annual net savings	\$38,000	\$49,000	\$49,000
Cumulative savings	\$38,000	\$87,000	\$136,000

Sources of Risk:

None. This is a straight software implementation with no modification. Risk is low.

Resource Constraints:

None.

Interdependencies:

None.

2.6 Sustainable IT Infrastructure: Virtualization of Laptops and Desktops

Opportunity:

Note that the first six projects in this series are all aimed at reducing the total cost of ownership (TCO) of the very considerable investment Peralta has in laptops, desktops, and printers.

2.1 Standards Based Procurement - reducing acquisition cost.

2.2 Rationalize Total IT Spend - TCO cost reduction

2.3 Lease / Service Agreements - reduce install, support, and maintenance costs

2.4 Managed Print - reduce cost of printers

2.5 IT Asset & End Device Management - reduce maintenance and support cost

2.6 Virtualization of Laptops and Desktops

Virtualization is a strategy for dramatically reducing the unit cost of desktop computers allowing them to be replaced and upgraded more frequently, and allowing IT staff to manage, upgrade, and perform hardware and software maintenance much more efficiently on a much smaller group of machines.

The core of the concept is that desktop computers are replaced by much less expensive thin client work stations (typically without internal memory, storage, or processors), several of which are attached to a single server that replaces the processor, memory, and storage typically found on desktops that makes them much more expensive. Small units of virtualization hardware and software are used with each thin client work station to allow this to work seamlessly. Users report being unable to detect that the work stations are not fully functional desktop or laptop computers.

Recommended Actions:

1. Conduct a proof-of-concept implementation at each college and the district office selecting one office or computer lab as the test area, both to gain competence in the technology but particularly to demonstrate to users that no capability is being lost.
2. Once proof-of-concept has been achieved, implement as rapidly as possible, preferably within one calendar year because of the very large and immediate cost savings available.
3. Modify annual forward budgets to reflect the savings.

Discussion:

The typical replacement cost for a traditional desktop/laptop installation is in the range of \$1,000 to \$1,500 with a desired four year replacement cycle. Peralta has approximately 4,570 staff and student lab installations and we conservatively estimate that 50% of these

can readily be virtualized. Replacing these 2,285 machines on a 5 year replacement schedule would require an estimated \$685,000 per year from general operating funds.

The reality is that there is no institutionalized replacement schedule and many machines have long outlived their service life, being replaced only when bond funds become available.

By contrast a thin client virtual implementation with all required hardware, software, and servers typically runs \$500 per user. These require less frequent replacement but even on the same five year replacement cycle this reduces annual cost to \$228,000 per year, a 67% reduction. Combining this concept with lease finance, the entire program could be funded indefinitely at a cost of about \$20,000 per month (about \$8.75 per machine per month).

Additional savings are incurred through the labor efficiency in supporting fewer processors and being able to make software upgrades or install patches in far fewer machines.

There is typically some non-fact-based concern that files are no longer “on my computer” but rather on one of several central servers. This is actually a benefit since these servers will be regularly backed up and the loss of the hard drive on any one particularly critical personal desktop will not result in lost data.

The ability of Peralta to protect sensitive data by no longer loading it on personal machines is enhanced as is our ability to better control inappropriate content that some employees may be storing there.

While some faculty and staff may argue that they need to be able to take their machine and work home or to remote locations, this can be readily resolved with thin client work ‘laptops’ that are low in cost, connect to the district’s system and data remotely, and are less likely to be ‘lost’ or used for unapproved purposes when off site.

Investment:

\$228,000 per year estimated.

Three year cumulative investment \$684,000.

Summary of Net Benefits:

To replace 50% of Peralta’s PCs on a 5 year schedule requires an estimated investment of \$685,000 per year. Currently this expenditure is not annual and is from bond funding but this source of funds and purchase schedule does not meet Peralta’s needs.

	1 st year	2 nd year	3 rd year
Annual cost to implement virtual laptops	(\$228,000)	(\$228,000)	(\$228,000)
Savings from avoiding cost of replacing fully functional PCs	\$685,000	\$685,000	\$685,000
Annual net savings	\$457,000	\$457,000	\$457,000
Cumulative savings	\$457,000	\$914,000	\$1,371,000

Sources of Risk:

Risk is considered medium. This project involves a large number of machines and potential resistance from users not used to having their files stored separately.

Resource Constraints:

Budgetary.

Interdependencies:

None.

2.7 Sustainable IT Infrastructure: Create a Strategy for Cloud Computing & Virtualization of the Data Center

Opportunity:

Begin creation of a strategy that moves Peralta toward virtualization and cloud computing as the primary technologies supporting its data centers as opposed to continued investment in hardware and the much higher acquisition, replacement, management, and maintenance associated with our current strategy.

The concepts of cloud computing and virtualization are now well established and mature. It replaces all or most of on-site data center hardware with rented 'virtual' server space at commercially available remote data centers (Amazon and Google are well known providers).

Cost savings are substantial as the purchase, replacement, maintenance, upgrade and associated labor for the large servers that make up our local data center are completely eliminated.

Large periodic investment in new, upgraded, or replacement hardware is eliminated and replaced by small, regular monthly space rental charges.

Our ability to expand as we grow is uninhibited. We benefit from data centers run at the highest available level of security and competence with the most modern hardware. Decentralizing our data into several geographically dispersed data centers becomes the core of a risk management and disaster recovery plan that is currently weak at Peralta.

Recommended Actions:

1. Conduct a study and create a multi-year strategy for implementing cloud computing and virtualization.
2. Implement the EMC private cloud with existing resources to increase reliability and efficiency of current owned hardware while reducing support costs.
3. Utilize this experience and additional study to continuously move the maximum reasonable amount of data center hardware and software onto the public cloud over a period of no more than three years.

Discussion:

This strategy can be seen as having two phases that will move Peralta almost completely to adopt cloud computing replacing existing owned data centers within 3 to 5 years.

Phase 1: In this phase we complete implementation of the EMC 'private cloud' that was begun earlier this year. Peralta invested approximately \$800,000 in this system that allows virtualization of servers and therefore the use of fewer servers. The virtual servers located on all four colleges and the district office form the core of our current disaster recovery plan allowing data to be backed up in several different geographic locations while reducing the number and therefore the support, energy, and maintenance cost of required servers. This SANS system (storage area networked servers) is expected to

reduce the number of data center servers from 163 to about 63. This phase is expected to take the next 12 months to complete.

Phase 2: In parallel with Phase 1 we will conduct a study and form a strategy and plan to begin execution in which we incrementally move selected data or applications to the public cloud with additional reductions in hardware acquisition, maintenance, support, and energy. This phase is expected to run 2 to 4 years beyond Phase 1.

Investment:

Investment in Phase 1 EMC equipment is complete and being implemented. No additional cost occurs here.

To assist in the formation of a strategy we plan to contract for an external consultant to evaluate our situation and provide guidance on a strategy and plan to further implement cloud computing. We are budgeting a one-time cost of \$50,000 for the study.

Summary of Net Benefits:

Note that in Phase 1, the EMC implementation will reduce the district’s need for central servers from approximately 165 to 65. The excess 100 servers represent a substantial cost savings to district operation and will almost all be re-purposed to the colleges for continued use in other configurations. No cost savings is quantified here but the savings is substantial.

Based on case studies in the public record, the savings available from cloud computing conversions of data centers is extremely high.

	1st year	2nd year	3rd year
Quantifiable savings	not quantifiable	not quantifiable	not quantifiable
Expected investment	\$50,000	\$0	\$0
Annual net savings (cost)	(\$50,000)	\$0	\$0
Cumulative savings (cost)	(\$50,000)	(\$50,000)	(\$50,000)

Sources of Risk:

For the proposed strategy study, the risk is very low.

Resource Constraints:

None.

Interdependencies:

None.

2.8 Sustainable IT Infrastructure: Web Based Email

Opportunity:

Email has become both critically important and commoditized. As currently configured, Peralta maintains both the hardware and software that comprises our local email system and pays significant internal labor costs for its management and maintenance. Even so, we have suffered several email failures over the last year that created operational hardship.

Web based email is now available as a service with Microsoft and Google being the largest providers. Buying email as a service allows us to avoid hardware and software purchase, maintenance, and replacement costs and eliminate most of the associated labor. These costs are replaced by a small regular monthly usage charge.

In addition, the major web based email system have become very feature rich offering many functionalities Peralta could not afford to provide internally including advanced collaboration and even video conferencing through the system.

PCCD currently uses Microsoft's web-based e-mail for students, automatically creating an account for each student upon matriculation. However, students, for the most part, do not use this e-mail account, preferring to use their personal accounts. This service is free to Peralta.

Recommended Actions:

1. Select a web-based email vendor.
2. Implement.

Discussion:

Both Microsoft and Google offer free web-based e-mail service to colleges and universities. Google service is free to both students and university employees, while Microsoft's service is free to students. However, Microsoft charges \$5 per month per mailbox for faculty and staff.

In addition to e-mail, both vendors offer extensive collaboration tools. Microsoft's Office 365 is a cloud-based version of the Microsoft office suite. Google offers a similar suite number called Google Apps that provides online word processing, spreadsheet, presentation tool, and database. Both suites enable users to share documents, and even simultaneously mark up and edit documents.

Investment:

Both options would require the use of outside expertise to implement and migrate current mailboxes to the web-based service. The cost should be between \$50,000 and \$100,000.

While the technical risk is low, there can be considerable change management risk, as people move from their familiar Outlook client to a web-based interface. Although both services have interfaces to Outlook, certain services within Outlook may not be available through the web-based services.

The operating cost of an email system is largely hidden because of its many components including server hardware & OS, server software (the email program), storage, message filtering, mobile messaging, and staffing costs. Also costs are materially different for power users (with large archiving and storage requirements), knowledge workers (our faculty and staff), and occasional users (our students).

In total Peralta needs to support about 100 power users (administrators), about 1,300 knowledge workers (faculty and staff) and about 28,000 student email accounts.

A 2009 Forrester study estimates the fully loaded monthly email costs for these three categories in a company of 100,000 to be \$20.84, \$12.00, \$7.72 per month respectively. However, as Forrester remarks, these costs are much higher in a smaller company because of the higher ratio of fixed costs. Since the total population to be supported at Peralta is around 29,000, we mark these costs up by 1/3rd to estimate true cost.

	Administrators and Power Users	Faculty and Staff Knowledge Workers	Student email accounts (occasional users)	Total annual cost of email
Forrester adjusted estimated fully loaded email cost per user per month	\$27.71	\$15.96	\$0.00 currently	
Users to be supported	100	1,300	28,000	
Annual total estimated cost of email	\$33,300	\$248,400	\$0	\$281,700

Summary of Net Benefits:

From both Google and Microsoft, hosted web based email accounts cost approximately \$5 per user per month.

Other benefits include the highest level of professional management of the system, very high promised up time and 24/7 technical support.

	Administrators and Power Users	Faculty and Staff Knowledge Workers	Student email accounts (occasional users)	Total annual cost of email
Users to be supported	100	1,300	28,000	\$281,700
Annual cost of hosted web based email	\$6,000 MS \$0 Google	\$78,000 MS \$0 Google	\$0 MS \$0 Google	\$84,000 MS \$0 Google
Annual cost of in-house email	\$33,000	\$249,000	\$0	\$282,000
Annual savings by category	\$27,000 MS \$33,000 Google	\$171,000 MS \$249,000 Google	\$0	\$198,000 MS \$282,000 Google

	1 st year	2 nd year	3 rd year
Annual net savings (assumes an implementation cost of \$100,000)	\$98,000 MS \$182,000 Google	\$198,000 MS \$282,000 Google	\$198,000 MS \$282,000 Google
Cumulative savings	\$98,000 MS \$182,000 Google	\$296,000 MS \$464,000 Google	\$494,000 MS \$746,000 Google

Sources of Risk:

The primary sources of risk are the risk of migrating the current mailboxes to new environment and change management risk associated with users moving to a new

Resource Constraints:

None.

Interdependencies:

None.

2.9 Sustainable IT Infrastructure: Upgrade to PeopleSoft ver. 9.1

Opportunity:

Since first adopting PeopleSoft ver. 8.9 in 2005, Peralta has not upgraded HR & Campus to more current versions. Our current version 8.9 is scheduled to lose support from PeopleSoft by the end of 2012 so the question is one of timing only since we have little option to upgrading. The current version is 9.1 and offers better integration particularly with the new Campus Solutions suite containing the Schedule of Classes among other things.

Recommended Actions:

1. Conduct a scoping study to determine in some detail how long and what investment this would require.
2. Based on this information, plan and budget for the upgrade.
3. Implement.

Discussion:

Shortly we will have better information on the cost and time requirement for the upgrade. Based on this information we will need to decide whether some other major projects such as Time & Labor / Absence Management and Financial Aid move forward immediately or wait until after the upgrade since some rework would be needed if these are implemented before the upgrade. In the case of both of these projects, considerable rework would be required if they were implemented under 8.9 rather than waiting until the upgrade is completed. The cost of the rework could be as much as 30% of the cost of the limitations under 8.9.

The upgrade will change some features and interconnectivity of the already implemented modules. These can be identified early and plans made for training or process changes to take advantage of the new capabilities. The upgrade will also have an impact on any custom systems that may also need significant modification. These would include the Student Data Warehouse, the Prorata Payroll system, the Combination Code Validation Program, and the Automated Adjunct Step Increase Program.

Investment:

Current informal estimates of the cost of the upgrade run from a low of \$700,000 to a high of \$2 million. A scoping study would narrow the range considerably.

Summary of Net Benefits:

While there are some cost savings associated with the upgrade, most of the benefit comes from providing a platform that increases the productivity and usefulness of all the PeopleSoft modules. If we do not upgrade, we will be unable to take advantage of future enhancements to our PeopleSoft system.

Starting in 2013, our annual maintenance fees will increase by 15-10% as Oracle tries to incentivize customers to move away from 8.9. In addition, all functionality and modules

implemented prior to the upgrade will need to be redone, increasing the cost of any future upgrade.

Although this project shows a net cost over three years (as opposed to savings) it is regarded as high benefit as this is an unavoidable change central to all the major operating systems in the district.

	1st year	2nd year	3rd year
Maintenance Fee Increase - cost avoided	\$25,000	\$25,000	\$25,000
Rework after upgrade - cost avoided		\$200,000	\$200,000
Expected investment	\$1,000,000	\$0	\$0
Annual net savings (cost)	-\$925,000	\$225,000	\$225,000
Cumulative savings (cost)	-\$925,000	-\$700,000	-\$475,000

Sources of Risk:

This is a large complex project touching essentially all of the district’s major operating systems. Risk is high.

Resource Constraints:

None.

Interdependencies:

Sequence of implementation interdependencies with all major technology implementations that rely on PeopleSoft, including Time & Labor/Absence Management among others. However, not all PS projects need to be delayed for this upgrade since some will upgrade automatically without any additional requirement. This needs to be assessed on a project by project basis.

3.1 Reduce Back Office Costs: Electronic PA Form

Opportunity:

A significant percentage of errors and lateness in payroll and financial posting can be tied to inaccuracies or lateness of the PA form. The system is currently paper-based. Prior to 2008 Peralta had an automated electronic PA system that was widely liked and able to resolve some of the problems introduced when converted to paper.

Peralta should build or buy an electronic PA form system with automated workflow and an appropriate level of internal validation of codes and entries to largely prevent incorrect information from ever reaching the PeopleSoft HR and Payroll systems.

Recommended Actions:

1. Evaluate whether commercial systems can be cost effectively implemented that meet the specific needs of Peralta.
2. If yes, budget and acquire. If no, budget and custom develop the system.

Discussion:

The current paper-based system suffers the same problems common to all paper-based systems:

- Failure to use the paper form as required.
- Loss or delay of the form during the preparation and review/approval process.
- Use of inaccurate information and codes on the form with the assumption that reviewers or processors down-stream of the originator will discover and correct these errors, which typically does not happen.

An electronic system similar to Peralta's previous electronic PA system will resolve these problems by integrating workflow and validation of codes and data entered before the form reaches the HR and Payroll systems.

Hard benefits include:

- Reduction in manpower required to correct data or rework processes driven by the data.
- Reduction in errors requiring correction will reduce time to close the financials each month resulting in more timely and accurate financial data required to run the district.
- Reduction in the manpower required to originate the form and carry it from approver to approver, and eliminate any mid-process copies that may be made in order to create a history and control record.

Soft benefits include:

1. Fewer late or inaccurate pay warrants for employees.
2. Environmentally friendly elimination of paper copies.

3. A full historical record of all actions taken that is auditable and can be used as a statistical data source to further improve the process.

From the November 2010 study we know that PA forms are greatly delayed which in many cases means that the instructor did not receive pay in the first month that it was due. From the study:

The PAs generated for adjunct assignments (for restricted fund and non-instructional assignments) are manually carried along an approval routing that typically involves six stops on campus and 10 additional stops in the District Office. However, the degree of attention they receive varies widely from campus to campus and since the PeopleSoft system recognizes an obligation to pay after the third campus stop with the scheduler, there is reason to question the necessity of the additional 13 stops.

Total processing time on campus averaged 23 days (random sample of 63 PAs, not all prorata but all from fund 11 or 30), and an average of 53 days campus and district office combined (min 13 days, max 143 days) (random sample of 29, not all prorata but all from fund 11 or 30).

49% of the PAs reviewed were initiated after the assignment begin date by an average of 34 days (random sample of 63 PAs, not all prorata but all from fund 11 or 30).

Similarly, in trying to estimate benefit we found only one industry data point regarding claims for savings that are proposed to be \$30 to \$40 per PA form produced in reduced original labor and reduced rework. However the number of PA forms that Peralta has or will produce is difficult to estimate. For example there are about 1,600 adjunct assignments in each year but current practice requires that only about 240 are supported by PA forms. Presumably if the form were automated, all 1600 would get forms. Likewise among the roughly 800 permanent staff and faculty employees we might estimate an additional 80 to 160 annually. However since such a very small percentage of adjunct assignments are currently processed by PA it is not reasonable to use this metric for estimate.

A further complication for this project is that adjunct assignments are not controlled through the position control system, meaning that some electronic PA forms could rely on validated position data but the large number of adjunct positions could not. There is general support for the idea of adding adjunct pooled positions to the position control system but this would in itself be a separate major project that ideally would be completed before the automated PA system is designed.

Investment:

A simple system with workflow, electronic forms, and rudimentary data validation can be built or purchased commercially for in the range of \$100,000 to \$200,000 first year cost.

However, the full value of such a system would ultimately require that it perform extensive data validation, interface with the position control system, and load data in real time directly to PeopleSoft following final review and approval. These additional features will require an investment in the range of an additional \$100,000 to \$200,000.

If custom built, we anticipate that we would budget roughly \$100,000 per year for about three years to achieve the level of automation desired. Our overriding objective is to gain

benefit as rapidly as possible and it is likely that the first basic version could be built and implemented within 6 months, or if commercially available, implemented within 3 to 4 months with additional features prioritized and added over time as budget allows.

The cumulative three year cost of the system is estimated at \$325,000.

Summary of Net Benefits:

While there are certainly hard benefits measured in reduced original work and in eliminated rework, estimating these values would be purely speculative. There would also be reduced incorrect payments in payroll though on average these would probably be both over payments and underpayments and would come close to zeroing out.

Subjective values would include fewer delayed or inaccurate payroll payments to employees.

	1 st year	2 nd year	3 rd year
Reduced original work and reduced rework.	not estimated	not estimated	not estimated
Estimated investment in a three year program if custom developed	\$125,000	\$100,000	\$100,000
Annual net savings (cost)	(\$125,000)	(\$100,000)	(\$100,000)
Cumulative savings (cost)	(\$125,000)	(\$225,000)	(\$325,000)

Sources of Risk:

Implementation of the system requires a significant change in behavior on the part of PA originators and reviewers but they have prior experience with a similar system. Risk is judged to be medium.

Resource Constraints:

None.

Interdependencies:

Theoretically this project is interrelated with project 2.9 Upgrade to PS 9.1 because of the automated load of data from the automated PA directly to PS. However, we are likely to find that this data is well controlled during migration to 9.1 and there would be no rework penalty for beginning this project before the upgrade.

3.2 Reduce Back Office Costs: Document Management

Opportunity:

Acquire a document management platform that can be used to reduce cost and increase efficiency in many areas including bond program documentation, purchasing, student transcript management, AP, and any other area that must manage a volume of non-standard docs or where docs have a combination of electronic and manual notation.

Cost reduction and efficiency occur from reduced storage space requirement, reduced labor from automated filing and recovery, and no more lost or non-recoverable documents.

Recommended Actions:

1. Research available vendors and issue an RFP.
2. Budget, acquire, and implement the platform.
3. Prioritize, schedule, and implement projects to automate document management in each of the mentioned functional areas.

Discussion:

Document management, often referred to as Document Management Systems (DMS), is the use of a computer system and software to store, manage and track electronic documents and electronic images of paper based information captured through the use of a document scanner. The term document is defined as "recorded information or an object which can be treated as a unit". DM systems allow documents to be modified and managed but typically lack the records retention and disposition functionality for managing records. Key DM features are:

- Check In / Check Out and Locking
- Version Control
- Roll back
- Audit Trail
- Annotation and Stamps
- Summarization

Note that while this recommendation focuses on acquiring a DM platform, value is only achieved when each of the areas mentioned above, among others, are brought onto the DM system. This plan envisions starting immediately with construction management documents, then implementing student transcripts, AP, and contracts management over the next two years.

Investment:

Both the investment and benefit from this project require a significant study to quantify. In selecting systems, small stand-alone systems can cost as little as \$50,000 while some

enterprise scale systems can cost as much as \$1 Million. In order to correctly size the required system and calculate benefit we would need to conduct a study that begins with understanding the paper creation and storage requirements of each of the target departments and a clear understanding of how and how often these documents are used.

For purposes of this recommendation, we assume that a mid-range platform with required scanning devices can be implemented in the first year for construction management documents for a total of \$250K. In the second year we would automate student transcripts and contracts for \$100K each and in the third year AP for \$100K. In subsequent years additional areas could be added.

The cumulative three year investment is assumed to be \$550,000.

Summary of Net Benefits:

Likewise, savings calculations for DM systems are multi-part and relatively complex with separate calculations for:

- Savings relating to creation and archiving
- Saving from how document are modified and changes are controlled
- Savings from utilizing workflow in modifying documents

In one study that we reviewed, detailed calculations were shown that amounted to \$25 to \$30 per document (based on an organization creating 2,000 documents per year).

Another study reflected the following percentage reductions by activity type:

1. Reduction in time spent locating and retrieving documents - 75%
2. Reduction in time spent filing - 75%
3. Reduction in copying - 50%
4. Reduction in off-site storage costs - 75%
5. Reduction in on-site storage costs - 75%
6. Reduction in overnight shipping expenses - 50%
7. Reduction in filing supply expenses - 50%

Overall benefits are categorized as high.

	1 st year	2 nd year	3 rd year
Savings	not estimated	not estimated	not estimated
System and Implementation Costs	(\$250,000)	(\$200,000)	(\$100,000)
Annual net savings (cost)	(\$250,000)	(\$200,000)	(\$100,000)
Cumulative savings (cost)	(\$250,000)	(\$450,000)	(\$550,000)

Sources of Risk:

This is a long term project with many elements. Risk is categorized as medium.

Resource Constraints:

Available project management resources.

Interdependencies:

Project 2.7 Cloud Computing: Ideally documents would be stored on the public cloud and not require additional dedicated servers.

Project 2.9 Upgrade to PS 9.1: This project is unlikely to be dependent on this upgrade and can be scheduled independently of that activity.

3.3 Reduce Back Office Cost: Classroom Scheduling

Opportunity:

Software applications that automatically optimize room assignment from the Schedule of Classes to maximize space utilization and respond to departmental and instructor preferences increase Peralta's efficiency in utilizing space. Other parallel applications allow users to directly create or modify space reservations via web based application without concern for conflicts. Several such applications exist including Schedule 25 and Resource 25 from CollegeNET.

Recommended Actions:

1. Determine need and requirements, starting with vendor software demos and resulting in an RFP for selected vendors.
2. Budget and implement.

Discussion:

Schedule 25 is a powerful space scheduling system from CollegeNET that generates classroom schedules with maximum speed and efficiency. It is fundamentally a bulk scheduler whose input data is prepared prior to execution.

Resource 25 is an on-line, interactive system for class and event management. It is designed to quickly and easily assign, view, and change reservations for campus spaces. Class schedule data generated by Schedule 25 will be directly loaded into Resource 25 for on-line modification.

For both apps, PeopleSoft Schedule of Classes remains the system of record with class schedule information exported to Schedule 25 then scheduled classrooms re-imported back to PS.

The goals of the Schedule 25 / Resource25 packages are:

- Maximize number of classes placed
- Maximize departmental preferences
- Maximize space optimization

Schedule 25 and Resource 25 are tools to help schedule and manage courses and special events. Departmental courses utilizing departmental space are not scheduled by Schedule 25.

The *Schedule25*® classroom scheduling optimizer lets you assign an entire term of classes to classrooms in seconds. *Schedule25* automatically figures out the optimal space allocation for your campus, maximizing efficiency and saving you weeks of scheduling time. Because *Schedule25* is fully integrated into the *Series25*® campus-wide class and event scheduling system, you enjoy seamless academic scheduling.

Schedule25® evaluates your room inventory and class roster and determines the optimal matching, according to the room attributes, constraints, and preferences you specify.

Schedule25's proven algorithm yields the best use of space over time while satisfying the unique needs of your school's departments, students, and faculty.

With Schedule25 you can:

- Schedule an entire term of classes in seconds instead of weeks
- Create your class schedule according to your specific criteria – required room features, department and class location preferences, and so on
- Delay final scheduling until you have the most accurate class demand data
- Assign a term's worth or a subset of classes into any set of rooms
- Prepare alternative schedules for disaster recovery, space remodeling, and other planning purposes

With Schedule25 you will:

1. Save time and resources
2. Increase efficiency
3. Ensure the best possible use of your space
4. Prevent scheduling conflicts and bottlenecks
5. Meet department, student, and faculty needs
6. Be well positioned to reschedule after room or building closures
7. Find possible alternatives to new construction

Investment:

This information is based on a proposal received from CollegeNET in 2010 for the license and implementation of both S25 and R25 district wide.

Initial annual license fee \$98,000.

Recurring annual maintenance fee \$19,570.

Incremental cost of hosting on CollegeNET servers, annually \$19,570.

Implementation could be handled by an in-house team; however it is likely we will want to engage these services from CollegeNET who estimates these costs in the range of \$40K to \$60K (\$2,000 per day) for implementation and rollout over a 4 to 6 month period.

Total 3 year investment is estimated at \$197,500.

Summary of Net Benefits:

Objective and subjective benefit categories are described above. While there is undoubtedly a cost savings to Peralta we have not attempted to estimate them here. Benefits from this system are believed to be medium in scale.

	1 st year	2 nd year	3 rd year
Savings (not estimated)	not estimated	not estimated	not estimated
Initial license cost	(\$98,000)		
Recurring annual license - assumes we host the app locally	\$0	(\$19,750)	(\$19,750)
Implementation services from CollegeNET (\$40k to \$60K)	(\$60,000)		
Annual net savings (cost)	(\$158,000)	(\$19,750)	(\$19,750)
Cumulative savings (cost)	(\$158,000)	(\$177,750)	(\$197,500)

Sources of Risk:

Medium risk. Outside contractor installing significant system interfacing with PeopleSoft.

Resource Constraints:

Available project management.

Interdependencies:

Need to evaluate whether the upgrade to PS 9.1 should be accomplished first. In many cases where only standard data is involved, the migration between PS 8.9 and 9.1 will not be an issue and can be scheduled independently.

3.4 Reduce Back Office Cost: Field Service

Opportunity:

Implement the PeopleSoft Field Service module which Peralta already owns. The Field Service module is designed to make the Facilities operations more efficient by providing a sophisticated ticket-based service request system with a wide variety of features including:

1. Automatically track, maintain, and monitor accurate information about your installed base—from initial order through ongoing maintenance. This capability allows you to effectively manage every aspect of your field service operation, from preventive maintenance programs to service-related costs.
2. Access to detailed information about customers, their installed products, historical and current cases, and related service orders.
3. Accurate order management.
4. Integrated scheduling of preventive maintenance.
5. Intelligent assignment and dispatch. The dispatch board provides agents with an intuitive interface to quickly assign and dispatch internal or third-party technicians, based on skills, customer preferences, location, and availability.

Recommended Actions:

- Review module capability and Facilities department current and desired operations to determine which features should be implemented.
- Budget and schedule.
- Implement the module and redesign department processes and procedures around the advanced capabilities.

Discussion:

None.

Investment:

Investment is estimated based on an assumed four month (17 week) implementation by outside contractors. This assumes that the implementation is straightforward and puts it on the shorter end of module implementations which on average are more typically 6 months.

It appears that the major complexity in implementation will be loading the data about acquisition date, warranty, and service schedules for each major component to be managed through this system. If we fully implement Asset Management then much of this information will be captured at the time of purchase or receipt. Legacy data is assumed to be entered by the same employees currently performing these tasks, and if

this portion of the schedule proves to be too long, then this data entry could be prioritized and allowed to continue after the system go-live in order to minimize outside costs.

We assume one full time techno-functional and one part time project manager / business analyst, and that acceptance testing is conducted entirely with PCCD resources (no dedicated external testing support). All resources are assumed to be local and travel would be an additional cost.

Estimated total three year investment: \$199,000.

PCCD already owns the PS module and recurring annual license fees are budgeted elsewhere in the total PS support budget.

Summary of Net Benefits:

Objective and subjective benefit categories are described above. While there is undoubtedly a cost savings to Peralta we have not attempted to estimate them here.

Benefits are estimated to be in the medium category.

	1st year	2nd year	3rd year
Savings (not estimated)	not estimated	not estimated	not estimated
Implementation services from an external contractor	(\$199,000)		
Annual net savings (cost)	(\$199,000)	(\$0)	(\$0)
Cumulative savings (cost)	(\$199,000)	(\$199,000)	(\$199,000)

Sources of Risk:

Risk is judged to be medium. Implementation of a new PS module by an outside contractor.

Resource Constraints:

None.

Interdependencies:

Need to evaluate whether this implementation needs to be delayed until after the upgrade to PS 9.1 or whether it can be scheduled independently.

Also need to evaluate whether this should occur after the implementation of Asset Management in order to automatically capture newly added equipment and their warranty data.

3.5 Reduce Back Office Costs: eProcurement

Opportunity:

Peralta owns and should implement the PeopleSoft eProcurement module. The existing implemented purchasing module focuses on centralized purchasing operations. eProcurement provides a decentralized, web-based self-service procurement system that optimizes purchase of indirect or MRO (maintenance, repair, operations) goods, such as office and cleaning supplies and similar that are ordered by individuals throughout the organization. It is based on role-based catalogs, powerful search capability, workflow enabled approvals, and allows suppliers to self-manage their electronic catalogues including price.

Implementation typically reduces cost of indirect goods by centralizing their purchase through approved electronic catalogs, and increases customer satisfaction as individuals are able to more directly order exactly what they need with little 'red tape'.

Recommended Actions:

1. Conduct a brief study of the benefits and costs of implementing the module including a more detailed project plan, timeline, and estimate of costs and resources, plus a more detailed quantification of benefits.
2. Budget, schedule, implement.

Discussion:

eProcurement manages spend through increased visibility and control of indirect goods. It achieves that objective by making an organization's procurement processes more efficient and by leveraging their supply base to their competitive advantage.

PeopleSoft eProcurement is a web-based solution used to decentralize, automate, and control purchasing. PeopleSoft eProcurement streamlines processes by using intuitive pages and powerful search capability to guide requesters through the steps of procurement. It enables:

- Deployment of common procurement functionality for an entire organization.
- Streamlining of supplier relationships and effective tracking of supplier performance.
- Dramatic reduction of processing, material costs, and inventory levels.
- Leveraging of spend to negotiate better contracts with suppliers.
- Real-time access and validation, including on-hand inventory quantity.

Investment:

eProcurement is a large and complex implementation. It touches many other modules, principally finance and purchasing, and requires the identification and notification of potential vendors, achieving their agreement to participate with electronic catalogues that they must maintain, and then their development and implementation of those e-

catalogues. While many large vendors are likely already participating in such programs with others, higher education must also consider preferential treatment of certain vendor classes, vendor diversity, and other issues that add complexity. On the funding side, the system must be able to accurately purchase from grants and restricted funds as well as the general fund which requires the creation and monitoring of many different rules to be embedded in the system.

We have a very preliminary estimate for a 9 month (39 week) project utilizing outside contractors. We project team is projected to be one part time project manager / business analyst, one full time senior techno functional, one full time developer, and 8 weeks of dedicated acceptance testing support.

Assuming all resources are local we estimate the professional service fees to be \$769,000 which is also the three year investment.

PCCD already owns this module and recurring annual license fees are budgeted elsewhere under overall PS licensing.

Summary of Net Benefits:

In the industry literature, providers of eProcurement systems claim payback in 6 to 18 months with an on-going stream of additional purchase and manpower savings thereafter. In this benefit calculation we assume the payback period is in the 18th month following implementation. In subsequent years, annual savings equate to 2/3rds of implementation cost or about \$510K per year. Although these levels are not fully achieved until the fourth year, we categorize this as a high benefit project.

Before undertaking this project, we should most likely engage Oracle to conduct a 3 or 4 week scoping and ROI study to lay out a firm estimate of savings and actual time to pay back, given the complexities of this project. We estimate the cost of this scoping study to be about \$50,000.

	1st year	2nd year	3rd year
Savings	\$0	\$510,000	\$510,000
Scoping and ROI Preliminary Study	(\$50,000)		
Implementation services from an external contractor	(\$769,000)		
Annual net savings (cost)	(\$819,000)	(\$0)	(\$0)
Cumulative savings (cost)	(\$819,000)	(\$309,000)	\$201,000

Sources of Risk:

High level of effort and complex implementation particularly with respect to gaining supplier cooperation and agreement to maintain their electronic catalogs timely and accurately.

Resource Constraints:

Available project management.

Interdependencies:

Probable linkage to Asset Management Implementation and to the Upgrade to PS 9.1.

3.6 Reduce Back Office Cost: Implement Asset Management

Opportunity:

Peralta owns the PeopleSoft Asset Management module and should implement it in order to increase accuracy and reduce annual inventory costs.

The recording of assets and operation of the depreciation tables was implemented in the fall of 2011. However the important linkages to purchasing and to the financials has not yet been configured or implemented.

Recommended Actions:

Budget, schedule, and implement the Asset Management module.

Discussion:

Peralta's policy is to capitalize all assets with a value of \$50K or more. This is a fairly limited group of assets comprised mainly of buildings, site improvements, and some large pieces of equipment and IT systems. These are currently reasonably well controlled through the portion of Asset Management that has been implemented, however newly acquired assets are not captured automatically and must be added manually.

More labor intensive is the BAM requirement for Peralta to tag and track other assets in the range of \$1,000 to \$50K (down to \$500 for some IT equipment). This list is many thousands of items long. Particularly in this area the link to purchasing, so that these tag & track items can be automatically recognized when purchased and received is critical.

Peralta currently incurs a substantial yearly cost performing the annual inventory. While the item cannot be eliminated, it can be materially reduced by having better control on both the fixed assets and the tag & track equipment.

As a second issue, separate from this implementation, the cost to conduct the annual inventory can be dramatically reduced if Peralta elects to use a RFID based tag system, different from the bar code tag currently used. During the inventory, a bar code gun must be held in close proximity to each inventoried item. Using RFID tags allows the RFID reader to be in reasonable proximity to the tag to read it. So for example, the RFID reader could read an entire room full of inventoried items in just a few seconds while located anywhere in the room reducing a step that might take 30 to 60 minutes to just a few seconds. The cost of implementing RFID tags and readers is over and above this implementation but can pay back quickly through reduced inventory cost and much better inventory accuracy.

Investment:

The full implementation of asset management was originally estimated to require a part time project manager, dedicated senior techno-functional, and 8 weeks of a dedicated tester. The total time was estimated at 31 weeks including rollout and training.

Only the setup of the fixed asset tables was authorized leaving approximately 24 weeks remaining or about \$333,000 (no travel) for the same staffing.

Summary of Net Benefits:

Benefits include

1. Reduced labor and reduced rework in purchasing and in inventory.
2. Better control over both fixed assets and tag & track equipment.
3. More accurate and quicker financial postings reducing labor in preparing the monthly financials.

Estimated benefits over three years are expected to be high.

	1 st year	2 nd year	3 rd year
Savings	not estimated	not estimated	not estimated
Implementation Cost (24 weeks)	\$333,000		
Annual net savings (cost)	\$333,000	\$0	\$0
Cumulative savings (cost)	(\$333,000)	(\$333,000)	(\$333,000)

Sources of Risk:

Risk is judged to be medium for an outside contractor implementing a major PS module.

Resource Constraints:

None.

Interdependencies:

The implementation schedule for any PS module is dependent on the decision regarding if and when to conduct the PS upgrade to 9.1 discussed in a separate project.

This project is a likely precursor to eProcurement.

3.7 Reduce Back Office Cost: Student Financial Aid System

Opportunity:

The current Student Financial Aid System (SAFE) is a mainframe product run on our existing mainframe. Peralta is the last remaining client for this 3rd party mainframe system by ESI and all annual update costs now fall on Peralta only, rapidly escalating our costs. The prospects for ESI maintaining this system over the long term (at a reasonable cost) are poor. Also the hardware on which we run the system is well past its lifespan and even programming support must come from Peralta retirees whose willingness and ability to continue in this role is questionable.

Peralta already owns the PeopleSoft Student Financial Aid module and should implement it. There are design problems with the delivered module that we will need to engage PeopleSoft to overcome, but they have already given us assurances that this can be done.

This project has high up-front costs but much lower long term support costs and maintaining the current system is not a reasonable option.

Recommended Actions:

1. Engage PeopleSoft to conduct a detailed evaluation of the modifications needed to fully meet Peralta's needs and a detailed implementation plan which can be used as a planning guide to the project.
2. Determine whether the work should be wholly or partially led by PeopleSoft or whether it should be bid out to other integration vendors.
3. Budget, schedule, implement.

Discussion:

Any new system will need to be scheduled to go live on January 1, the beginning of a new application year. The existing ESI SAFE system must operate in parallel to complete the processing of the existing year for at least an additional 9 months.

The earliest implementation date then would be January 1, 2012; however, if we delay implementation until the upgrade to PS 9.1 is complete, the most likely date would be January 1, 2013.

This also means maintaining the current ESI system through about September 30, 2013. As part of this project we also will need to expand the IT support staff to include an analyst dedicated to the support of this PS system.

Investment:

Because this will require modification of the delivered product by Oracle, complexity is high. The project needs to begin with a 4 week study by Oracle to ensure our needs can be met, to estimate any costs associated with PS modification, and to lay out an implementation plan in some detail. This study is estimated to cost \$100,000 and should be undertaken immediately (2012).

Implementation is estimated at 6 to 9 months and assumed to rely on an external contractor team (possibly Oracle). Implementation cost is estimated at \$1,000,000.

Based on these costs only, the project would begin generating annual savings in 2016 and in subsequent years would create savings of about \$185,000 per year compared to the continued operation of the current ESI mainframe system. These annual savings would be used to fund the internal costs of the additional IT Analyst required for system support.

Including these additional labor costs in the comparison of the two alternatives, the PeopleSoft alternative would breakeven and begin generating net savings in 2020.

Summary of Net Benefits:

ROI cannot be a primary consideration in this project since our current system will soon be non-viable as both the hardware and the software lose support or become simply too costly.

The new system will have the same functionalities as the existing system (while resolving some of its technical problems such as being able to see all class enrollment and support from all colleges for each student). It is unlikely to create any new savings.

Savings may also occur as a result of avoidance of costs. Historically these arise when the DOE or state funding authorities conduct full audits and determine that aid given was not eligible and therefore must be repaid (a direct cost to Peralta). In the few occasions this has occurred in the past, the source of the problem has been human error except for one case with the Regent system where the system was reported to be partially or wholly at fault in creating a \$400,000 repayment liability. Presumably the new system would remove this risk.

	1st year	2nd year	3rd year
Savings	not estimated	not estimated	not estimated
Investment			
Scoping Preliminary Study	(\$100,000)		
Implementation services from an external contractor		(\$900,000)	(\$100,000)
Ongoing cost of supporting the ESI mainframe system	(\$150,000)	(\$165,000)	(\$165,000)
Peralta Systems Analyst and external project manager	(\$150,000)	(\$300,000)	(\$150,000)
Annual net savings (cost) through implementation	(\$400,000)	(\$1,365,000)	(\$415,000)
Cumulative savings (cost)	(\$400,000)	(\$1,765,000)	(\$2,180,000)

Note that the \$480,000 spent in these three years to continue to support the existing ESI mainframe system will be incurred whether or not this project proceeds. It is unclear whether the full amount for ESI would be required for all of the third year of this estimate.

Sources of Risk:

Risk is considered high as this is a non-standard application of a PS Module implemented by an outside contractor.

Resource Constraints:

Available project management.

Interdependencies:

Interdependent with the project to upgrade to PS 9.1. Since the student and financial systems change materially in this upgrade, that project will almost certainly need to be completed first.

3.8 Reduce Back Office Cost: Automated Budget Development System

Opportunity:

The annual budget preparation process is wholly manual and relies on the email exchange of Excel spreadsheets containing both current and historical actuals and forecasts, managed separately for payroll and non-payroll costs. From December through June this process has a very high labor support requirement, can contain erroneous historical and current actual data because of manual entry, and makes version management very complex as colleges and the district try to work quickly to modify their entries as the budget evolves.

This manual system can be replaced by a custom developed automated system which dramatically improves the efficiency and accuracy of this process and replaces much of the manual labor.

Recommended Actions:

1. Determine specifications.
2. Schedule, budget, implement.

Discussion:

Some features of this system would include:

- The system will cover payroll and non-payroll operating expense.
- Actual prior year cost is loaded directly and automatically from PeopleSoft financials.
- The account structure mirrors Peralta's combination code structure allowing separate entries and review/approval at the location, fund, cost center, object, and program level.
- New accounts not previously used by a location or to be used only for planning purposes may be created and utilized by a location.
- Detail object code entries will roll-up automatically (at user command) to 2 and 3 digit summary levels.
- Individual budget entries (presumably at the 4 digit object code level or higher) will allow users to enter comment fields to explain the value, and also the ability to attach documents directly to each line in support of the forecast.
- Should be able to save various versions as required. These versions and time periods can be locked by appropriate owners of the versions.
- Should have a basic workflow to manage the budget cycle status per an organization structure of planning users.

Investment:

Peralta has already received one competent bid for this system in the range of \$319,000 to \$424,000. Development is expected to take 20 weeks or less.

Summary of Net Benefits:

There will direct and indirect savings from reduction in labor for preparing budget versions and in rework when correcting inadvertent errors, however it is expected that this labor will be reallocated to higher value tasks with no hard cost reduction.

Soft benefits include increasing the speed and accuracy of budget preparation and the ease with which the colleges can revise, approve, and forward subsequent versions to the district.

We have not attempted to quantify these savings.

	1st year	2nd year	3rd year
Savings	not estimated	not estimated	not estimated
Implementation Cost (20 weeks)	(\$424,000)		
Annual net savings (cost)	(\$424,000)	\$0	\$0
Cumulative savings (cost)	(\$424,000)	(\$424,000)	(\$424,000)

Note: \$319,000 if completed in 16 weeks.

Sources of Risk:

Medium. Outside contractor developing small to mid-size custom app with interface to PS.

Resource Constraints:

None.

Interdependencies:

None.

3.9 Reduce Back Office Cost: Adjunct FTEF Tracking

Opportunity:

The largest single discretionary expenditure made from the general fund each year is the budget for adjunct instruction. Likewise, the largest single source of risk to meeting the budget is the ability to track the expenditure to ensure that all colleges are indeed staying within their agreed budgets. Use of payroll data lags at least 30 days behind when the funds are obligated and more like 60 to 90 days behind when classes are first scheduled, first creating the obligation to pay. For this reason, the Chancellor has requested a system that will show actual and forecast FTEF by month based on data from the Schedule of Classes.

Such a custom developed program can be developed in 30 to 60 days based on the same logic and principles incorporated in the Prorata Payroll System and will show not only the FTEF for the current month but for several forward months. Since adjunct FTEF vary significantly at the beginning of a term as classes are added and cancelled, the ability to see this metric over several months is important to forecasting the total actual cost for a term.

The data could be detailed at the college and department level and would be a valuable tracking metric for the colleges, as well as for the district.

Recommended Actions:

1. Determine requirements.
2. Budget, schedule, implement.

Discussion:

Based on conversation with Ron Gerhard there appear to be three competing options.

1. What apparently the Chancellor has asked for is a hard stop in the Schedule of Classes that would automatically prevent the colleges from exceeding budgeted FTEF. This would be complex and involve direct modification to the PS SoC and may result in unwanted rigidity since scheduled FTEF varies significantly at the beginning of each major term as courses are cancelled and added especially in the first and second month, and even into the third month of a term.
2. The proposed alternative is shown above which is a management warning report showing actual and forecast FTEF (equated hours) for each month and which obeys the payroll rules for combined classes and non-credit and the like so that it correctly reflects the impact on payroll which is the true financial metric. This would be derivative of the Prorata Payroll System.
3. The third alternative may be the existing Student Data Warehouse which is reported to already contain such a report, but it is unclear whether it correctly reflects the payroll rules and therefore correctly reflects the desired financial metric.

Investment:

Assuming the second alternative for a warning report using the logic derivative of the Prorata Payroll System, development is expected to take 4 to 9 weeks with a part time business analyst / project manager and one full time developer (no travel assumed).

If 4 weeks: \$47,000

If 9 weeks: \$105,000.

Summary of Net Benefits:

Hard savings will be realized to the extent that Peralta succeeds in staying within its budget and not having to draw down reserves or reduce other expenditures to the extent that individual colleges exceed budget limits.

We do not currently have any history regarding what these overages may have been and therefore have not attempted to quantify these savings.

Benefit is assumed to be at least medium.

	1st year	2nd year	3rd year
Savings	not estimated	not estimated	not estimated
Implementation Cost (9 weeks)	(\$105,000)		
Annual net savings (cost)	(\$105,000)	\$0	\$0
Cumulative savings (cost)	(\$105,000)	(\$105,000)	(\$105,000)

Note: \$47,000 if completed in 4 weeks.

Sources of Risk:

Low. Small report based custom app based on existing programming performed by an outside contractor.

Resource Constraints:

None.

Interdependencies:

None.

3.10 Reduce Back Office Cost: Implement the Time & Labor and Absence Management PS Modules.

Opportunity:

Essentially all of the processes for collecting and entering hourly labor, tracking employee absences and paid time off, and correctly accounting for these entries is manual. Peralta owns and should implement the Time & Labor and Absence Management modules in PeopleSoft which together will fully automate these functions.

Recommended Actions:

1. Solicit bids from qualified vendors – this step already complete.
2. Budget, schedule, and implement.

Discussion:

Time & Labor allows for a variety of different methods to capture hourly employee time for pay and correctly assign it for accounting purposes. Implementing this module will eliminate the manual completion of timesheets and replace it with one of several options for electronic entry, and then routes these electronic timesheets to the appropriate approvers. The electronic forms and workflow elements of this module will eliminate the last minute rush to hand carry physical timesheets from approver to approver to payroll, and should also eliminate lost time sheets and late pay for employees who do not complete their timesheets on time.

In addition timesheet data is loaded directly to PS payroll eliminating about ½ FTE in payroll currently dedicated to manually transcribing hours from the time sheets into the payroll records.

Absence Management is broadly applicable to all Peralta employees, not just hourly, and automatically awards new paid time off and sick, enforces rules regarding the priority in which these must be used, and provides for electronic entry and approval of requested time off, as well as automatically posting these ‘takes’ against available balances.

Both Time & Labor and Absence Management provide for employee self-service in entering data and allowing monitoring of balances and viewing the details of past and requested future transactions, eliminating the requirement for calls or visits to HR. Absence management records are currently mostly manually managed within HR and implementation is estimated to eliminate at least ½ FTE in HR used for this entry and tracking.

Investment:

Peralta has received firm quotations in the range of \$750K to \$1M for this implementation which is expected to require approximately 6 months to implement.

Summary of Net Benefits:

There will direct and indirect savings from reduction in labor in Payroll and HR, as well as reduced time in the approval process and from no longer having to physically transport

time sheets. It is expected that this labor will be reallocated to higher value tasks with no hard cost reduction.

Soft benefits include increasing the speed and accuracy of payroll and financial reporting, as well as the ease of reviewing and approving both time and requested time off.

We have not attempted to quantify these savings. Benefit is assumed to be at least medium.

	1st year	2nd year	3rd year
Savings	Not estimated	Not estimated	Not estimated
Implementation Cost	(\$1,000,000)		
Annual net savings (cost)	(\$1,000,000)	\$0	\$0
Cumulative savings (cost)	(\$1,000,000)	(\$1,000,000)	(\$1,000,000)

Sources of Risk:

High: This is the simultaneous implementation of two complex inter-related modules by an outside vendor requiring careful planning, implementation, testing, and training. The modules impact payroll, finance, and HR at fundamental levels.

Note that in the current version of PS 8.9 utilized by Peralta these two modules require significant customization to be made to work together seamlessly. One consideration to reduce risk and required rework is to delay implementation until after we have upgraded to PS ver. 9.1 where these integration problems have been resolved.

Resource Constraints:

- Adequate project management.
- Adequate time from staff at district and the colleges to participate in the project team.

Interdependencies:

The two modules are interactive and require customization to work properly in our current PS ver. 8.9. This project is interdependent with the project to upgrade to PS ver. 9.1 and a decision must be made whether the requirement for later rework (if implemented now) out-weighs the lost benefit from having these functionalities delayed by about a year.

This project was originally authorized to begin in the fall of 2011 and is currently delayed pending this decision.

4.1 Business Intelligence: Financial Data Warehouse

Opportunity:

Peralta owns the PeopleSoft data warehouse and business intelligence tool for the Finance process but it has not been implemented. With modest cost and effort this capability can be brought on line to provide valuable insight and reporting capability. The core benefits of BI are a reduction of manpower required to gather and manipulate data from multiple sources, a single set of master data recognized as accurate by all users (single version of the truth), and the potential efficiencies and management insights available through the ease-of-use and enhanced analytical capabilities that these systems provide.

Recommended Actions:

1. Determine requirements.
2. Budget, schedule, implement.

Discussion:

None.

Investment:

The data warehouse projects for finance, HR, procurement, and the bond program all have the same investment.

We have an estimate from Oracle to implement the standard reports package for each of these areas of two consultants for two months each, estimated at \$80,000.

In addition, these four areas would share one new hire data warehouse specialist in IT at a fully loaded cost of \$140,000, or \$35,000 allocated to each project. All projects are assumed to be completed in year one for a cumulative three year cost of \$185,000.

Summary of Net Benefits:

Benefits are the additional management insights available from using these systems and the resulting increases in effectiveness and efficiency. Assumed to be medium benefit.

	1 st year	2 nd year	3 rd year
Savings	not estimated	not estimated	not estimated
Implementation cost	(\$80,000)		
¼ FTE data warehouse specialist new hire	(\$35,000)	(\$35,000)	(\$35,000)
Annual net savings (cost)	(\$115,000)	(\$35,000)	(\$35,000)
Cumulative savings	(\$115,000)	(\$150,000)	(\$185,000)

Sources of Risk:

Low.

Resource Constraints:

None.

Interdependencies:

None.

4.2 Business Intelligence - HR Data Warehouse

Opportunity:

Peralta owns the PeopleSoft data warehouse and business intelligence tool for the Human Resource process but it has not been implemented. With modest cost and effort this capability can be brought on line to provide valuable insight and reporting capability. The core benefits of BI are a reduction of manpower required to gather and manipulate data from multiple sources, a single set of master data recognized as accurate by all users (single version of the truth), and the potential efficiencies and management insights available through the ease-of-use and enhanced analytical capabilities that these systems provide.

Recommended Actions:

1. Determine requirements.
2. Budget, schedule, implement.

Discussion:

None.

Investment:

The data warehouse projects for finance, HR, procurement, and the bond program all have the same investment.

We have an estimate from Oracle to implement the standard reports package for each of these areas of two consultants for two months each, estimated at \$80,000.

In addition, these four areas would share one new hire data warehouse specialist in IT at a fully loaded cost of \$140,000, or \$35,000 allocated to each project. All projects are assumed to be completed in year one for a cumulative three year cost of \$185,000.

Summary of Net Benefits:

Benefits are the additional management insights available from using these systems and the resulting increases in effectiveness and efficiency. Assumed to be medium benefit.

	1st year	2nd year	3rd year
Savings	not estimated	not estimated	not estimated
Implementation cost	(\$80,000)		
¼ FTE data warehouse specialist new hire	(\$35,000)	(\$35,000)	(\$35,000)
Annual net savings (cost)	(\$115,000)	(\$35,000)	(\$35,000)
Cumulative savings	(\$115,000)	(\$150,000)	(\$185,000)

Sources of Risk:

Low.

Resource Constraints:

None.

Interdependencies:

None.

4.3 Business Intelligence - Procurement Data Warehouse

Opportunity:

Peralta owns the PeopleSoft data warehouse and business intelligence tool for the Procurement process but it has not been implemented. With modest cost and effort this capability can be brought on line to provide valuable insight and reporting capability. The core benefits of BI are a reduction of manpower required to gather and manipulate data from multiple sources, a single set of master data recognized as accurate by all users (single version of the truth), and the potential efficiencies and management insights available through the ease-of-use and enhanced analytical capabilities that these systems provide.

Recommended Actions:

1. Determine requirements.
2. Budget, schedule, implement.

Discussion:

None.

Investment:

The data warehouse projects for finance, HR, procurement, and the bond program all have the same investment.

We have an estimate from Oracle to implement the standard reports package for each of these areas of two consultants for two months each, estimated at \$80,000.

In addition, these four areas would share one new hire data warehouse specialist in IT at a fully loaded cost of \$140,000, or \$35,000 allocated to each project. All projects are assumed to be completed in year one for a cumulative three year cost of \$185,000.

Summary of Net Benefits:

Benefits are the additional management insights available from using these systems and the resulting increases in effectiveness and efficiency. Assumed to be medium benefit.

	1st year	2nd year	3rd year
Savings	not estimated	not estimated	not estimated
Implementation cost	(\$80,000)		
¼ FTE data warehouse specialist new hire	(\$35,000)	(\$35,000)	(\$35,000)
Annual net savings (cost)	(\$115,000)	(\$35,000)	(\$35,000)
Cumulative savings	(\$115,000)	(\$150,000)	(\$185,000)

Sources of Risk:

Low.

Resource Constraints:

None.

Interdependencies:

None.

4.4 Business Intelligence: Bond Program Public Reporting

Opportunity:

Meeting the legally required and desired levels of reporting to the public on the Bond Program currently requires a great deal of manual effort, drawing data from disparate sources which may not be consistent over time. Utilizing a data warehouse and a business intelligence tool will reduce labor and create consistent reporting from a master data source.

Recommended Actions:

1. Determine requirements.
2. Budget, schedule, implement.

Discussion:

None.

Investment:

The data warehouse projects for finance, HR, procurement, and the bond program all have the same investment.

We have an estimate from Oracle to implement the standard reports package for each of these areas of two consultants for two months each, estimated at \$80,000.

In addition, these four areas would share one new hire data warehouse specialist in IT at a fully loaded cost of \$140,000, or \$35,000 allocated to each project. All projects are assumed to be completed in year one for a cumulative three year cost of \$185,000.

Summary of Net Benefits:

Benefits are the additional management insights available from using these systems and the resulting increases in effectiveness and efficiency. Assumed to be medium benefit.

	1st year	2nd year	3rd year
Savings	not estimated	not estimated	not estimated
Implementation cost	(\$80,000)		
¼ FTE data warehouse specialist new hire	(\$35,000)	(\$35,000)	(\$35,000)
Annual net savings (cost)	(\$115,000)	(\$35,000)	(\$35,000)
Cumulative savings	(\$115,000)	(\$150,000)	(\$185,000)

Sources of Risk:

Low.

Resource Constraints:

None.

Interdependencies:

None.

5.1 Mobile Learning: Increase Bandwidth and Improve User Experience with Wireless at the Colleges

Opportunity:

The colleges currently enjoy state-funded 1 Gigabyte service through CENIC. However, as student usage follows the patterns of our society as a whole with much greater bandwidth demand for streaming video and similar high-utilization services, this capacity is already strained. Peralta is already on warning from CENIC for excess usage and their response to continued excessive demand will be to degrade the service available creating greater student dissatisfaction with Internet service on campus. Also, Peralta currently makes little use of streaming video content for instructional purposes and as this trend in educational delivery expands our need for bandwidth on campus will grow rapidly.

This project does not suggest expanding bandwidth at this time, but rather conducting a study of needs and establishing Quality of Service standards and policies and procedures to support them. These are currently completely undefined. This will likely also result in specific usage policies that apply to student use and the active blocking of some high-demand streaming sites that we agree have no educational function.

Recommended Actions:

1. Determine which collaborative body is most appropriate for establishing these standards.
2. Develop standards, policies, and procedures.
3. Implement

Discussion:

CENIC is currently considering expanding capacity to 10G or 100G but it is unclear if this will occur and in what time frame. Given the financial condition of the state, we cannot rely on this as a solution.

Investment:

The only investment anticipated at this time is \$50,000 for the study.

Summary of Net Benefits:

Benefits are all subjective, especially student satisfaction with the availability of WIFI on campus. Benefit level is believed to be medium.

	1st year	2nd year	3rd year
Quantifiable savings	not quantifiable	not quantifiable	not quantifiable
Expected investment	\$50,000	\$0	\$0
Annual net savings (cost)	\$50,000	\$0	\$0
Cumulative savings (cost)	\$50,000	\$50,000	\$50,000

Sources of Risk:

Low.

Resource Constraints:

None.

Interdependencies:

None.

5.2 Mobile Learning: Streaming Content from Smart Classrooms to Mobile Devices and Other Web Platforms

Opportunity:

Peralta should actively promote the use of new digital technologies to enhance learning. These include streaming content from smart classrooms to student’s mobile devices for viewing in real time or later. In addition, we should actively seek to post video of instruction on such web venues as iTunesU and Academic Earth. All of these initiatives are intended to provide the students with more options in receiving and reviewing instructional content.

This project has two elements:

1. Create governance, standards, and leadership for this activity under Ed Services.
2. Automate the process of live streaming of instruction on each campus through existing studios and smart classrooms.

Recommended Actions:

1. Ed Services leads the process of establishing governance and standards for this activity.
2. Evaluate technical solutions for live streaming of instruction.
3. Budget, schedule, implement.

Discussion:

None.

Investment:

The cost of a technical solution to automate live streaming of instruction is estimated to be \$100,000 per college, or \$400,000 three year cumulative cost.

Summary of Net Benefits:

Benefit level is believed to be medium.

	1st year	2nd year	3rd year
Quantifiable savings	not estimated	not estimated	not estimated
Expected investment	\$400,000	\$0	\$0
Annual net savings (cost)	(\$400,000)	\$0	\$0
Cumulative savings (cost)	(\$400,000)	(\$400,000)	(\$400,000)

Sources of Risk:

Medium.

Resource Constraints:

None.

Interdependencies:

None.

5.3 Mobile Learning: Mobile Templates for PeopleSoft/Passport

Opportunity:

Some universities have found it valuable to give faculty and students access to PeopleSoft content via mobile devices in areas such as registering for classes, schedule look-ups, doing grade checks, and ad hoc drops/adds. Rather than simply shrink a web site to the size of a mobile screen, the preferred solution is to develop web templates (html5) specifically to optimize the information and interaction on a 320 X 240 mobile device screen.

Peralta may be able to develop these directly or may evaluate after-market products such as those offered by BlackBoard Mobile Apps (no direct link to PS) or GreySparling's Mobile Enablement for PeopleSoft project (used by TCU). It is unclear whether Oracle offers such a delivered application. This is a rapidly evolving area and some initial research would be the logical starting point.

In the near term however, it should be Peralta's goal to accommodate mobile devices for these types of activities just as we have provided management, employee, and student self-service via PC browsers.

In this project we propose a proof of concept project probably targeting student schedules for iPhone.

Recommended Actions:

1. Conduct initial research with vendors and compare to building these in-house to resolve the make/buy decision.
2. Budget, schedule, implement.

Discussion:

For a discussion of the TCU experience see:

<http://greysparling.com/Blog/tcu-discusses-grey-sparling-mobile-solution-on-heug-forum>

Investment:

We assume a proof of concept app can be developed for not more than \$50,000.

Summary of Net Benefits:

Benefits are subjective but increasingly students will expect to be able to use mobile devices for data access and may use this criterion in selecting the college of their choice.

Benefit level is believed to be medium.

	1st year	2nd year	3rd year
Quantifiable savings	not estimated	not estimated	not estimated
Expected investment	\$50,000	\$0	\$0
Annual net savings (cost)	(\$50,000)	\$0	\$0
Cumulative savings (cost)	(\$50,000)	(\$50,000)	(\$50,000)

Sources of Risk:

Low.

Resource Constraints:

None.

Interdependencies:

None.