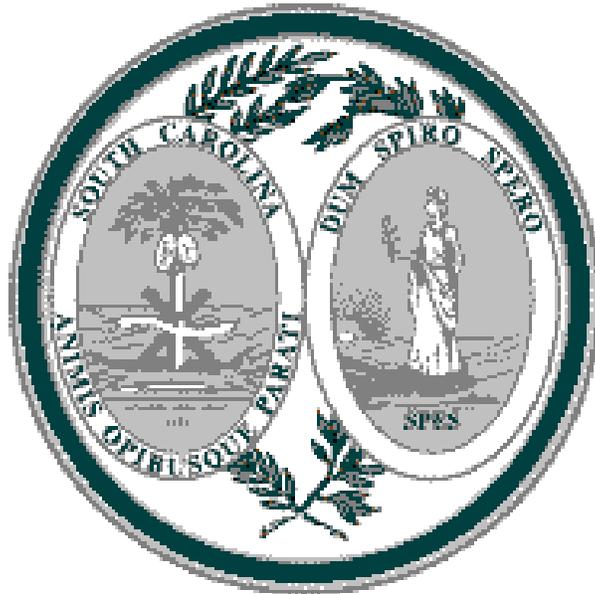


**South Carolina
Enterprise Information System
(SCEIS)
Business Case Study Review & Update**



**By:
Science Applications International Corporation**



January 12, 2009

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Executive Summary

Business Case Study Review & Update (2008)

South Carolina Enterprise Information System (SCEIS)

Results in Brief

Key Findings

1. Savings estimates were overstated in 2003. This may have been due to one of the following:
 - a. basis of estimate
 - b. Survey Response
 - c. Efficiency Improvements
 - d. Live Agencies part of Survey

	2003 BC	2008 BC
Basis	Appropriations	FTE's
Survey Response	42 of 74 agencies	57 of 70 agencies
FTE's represented	82.6%	98.3%

2. All savings computations were based on classified employee average compensation plus fringe benefits. Certain fringes, however, were double counted as both benefits and part of base compensation in 2003. This was corrected in the 2008 Review & Update.
3. 2003 Cost Estimate contained inadequate risk adjustments. Only a 1.5 % contingency was added. Typically, acquisition costs for public sector project are much larger.
4. 2003 Document Management Benefits were overstated. Copying, filing, and retrieval efficiencies may have included originals and were double counted

Purpose: To provide a Review & Update to the 2003 SCEIS Business Case Study and benefit estimates:

The 2003 Benefits & Cost estimates are assumed to be valid per State direction in 2003. The 2008 actual costs through FY 2008 plus estimates for fiscal years subsequent to FY 08 are assumed to be valid per State direction for purposes of this Review & Update. These costs were not validated as part of this review.

Net Savings Results reflect classified employee compensation averages at the end of FY 08 plus fringe benefits. These rates were not adjusted for cost of living adjustments in future years; however, Return on Investment (ROI) estimates were adjusted for Net Present Value (NPV) based on the then prevalent Fed Bond Rate of 4.6% at the end of FY 2008. NPV discount rate application should compensate for any cost of living adjustments as well, particularly in light of recent market trends.

Conservatism:

Benefits computations for Finance, Procurement, Human Resources, and Documentation Management (Working documents attached) reflect Conservative, Likely, and Aggressive scenarios. These relationships and how they were applied to benefits did vary by application area based on reviewer experience and discussions with State personnel. Please refer to Appendix A: Benefit Estimates for detailed computation results.

For purposes of this Review & Update, only conservative & Likely computations were used to calculate ROI (NPV and IRR). Applying aggressive results will improve ROI, but the State should consider ramifications of setting expectations as aggressive. In order to adapt additional conservatism, ROI was calculated at four levels of realization expectations, 25%, 50%, 75%, and 100%. Please see Appendix B: ROI Analysis for details and computations.

Savings Benefit Estimate

Benefit updates reflect a refined methodology, 2008 survey results, and a conservative view of potential savings. Potential conservative savings, if SCEIS efficiencies are fully realized, approximate \$ 166.8 million during start-up and roll

as process efficiencies. In addition, no consideration was given to the cost of imaging incoming documents. However, document management savings were limited to process. Much of the savings to be realized may come from space management, supplies, and equipment efficiencies.

5. Some cash savings based on interest on additional Cash being added to the General Fund as a result from process savings. In the 2008 review, we concluded that interest on savings was unrealistic and did not count it as a benefit.
6. Simple averages were applied versus weighted averages in some process savings calculations in the 2003 Study. This may have distorted savings by agency.
7. 2003 Assumptions were too optimistic. Workflow assumed that copying would be totally eliminated, This was not practical.
8. System Upgrades: \$3 million per year for upgrades to current systems is understated. To remain viable, most State accounting & procurement systems must be replaced or significantly upgraded in the short term if SCEIS is not fully implemented. Although this number was not inflated for the 2008 study, it should be. Legacy system are typically inefficient, inflexible, and cannot keep up with current technological requirement.
9. SCEIS is essential to the future of the State. There is no question something is necessary to replace current legacy systems, some of which are over 40 years old. Based on this Study, SCEIS is that system and is financially justified.
10. Consideration should be given to leveraging the State's investment within other State entities such as education, municipalities and counties.

out of initial systems to participating agencies (5 years through FY 12).

After full implementation, the State should, conservatively, realize \$ 68.4 million in savings per year over the investment horizon (through FY 17). The below graphic breaks down the savings estimates into general categories of Finance, Accounting, Human Resources, and Document Management. Further breakdown of this analysis is contained in Appendix A & B for reference.

Potential Annual Process & Cash Savings (\$ millions)

SCEIS (SAP) Module	1 st 5 years Total	Annual Total after 1 st 5 years
Finance & Accounting + Grant Mngt	37,956,629	20,850,834
Procurement & Materials Management	44,756,925	24,712,039
Human Resources & Payroll	17,335,429	10,968,498
Document Management	20,293,908	11,801,978
Cash Savings	49,834,034	1,935,973
Total	170,176,925	70,269,322

ROI analysis

ROI analysis takes into consideration early SCEIS investments from FY05 through FY07. Cost projections from Implementation and Operational costs were projected throughout the investment horizon of 10 years from FY08 through FY17.

Based on the savings shown above and ROI projections, four levels of expectation were scrutinized. As you will see in the below table, there was a negative NPV realization of \$ 161.9 million at the 25% level. In converse, a healthy \$708.6 million realization is possible at 100% realization over the conservative investment horizon.

Conservative Approach			
% Benefits	Cumulative NPV Realization	Annual IRR Realization	10 Year Net Benefit (Loss)
25%	\$ (161,893,054)	1.37%	\$ 68,501,128
50%	\$ 228,364,550	17.83%	\$ 184,003,537
75%	\$ 418,420,481	25.89%	\$ 299,505,946
100%	\$ 708,577,248	32.29%	\$ 415,008,356

11. The 2008 survey and this Review & Update are based on FTE's and available funds at the end of FY 08. Since that time significant cost cuts have occurred. Although these cuts were not based on SCEIS implementation, their impact should be softened by SCEIS and be considered part of realization.

If Internal Rate of Return (IRR) is used for ROI analysis, the result is a positive IRR over the investment horizon at a 25% realization level at 1.37%. At 100% realization, IRR increases to 32.29%. IRR is actually a form of NPV without taking into consideration a discounted interest rate. As implied, IRR is internal.

In the ROI section of this document (Section 6), Conservative and Likely scenarios have been shown Graphically in detail.

Conclusion

The 2008 Business Case Study Review & Update was conducted from a totally independent perspective with no bias except in the best interests of the State. Our results are purposely conservative. While the breakeven point is typically in FY 11, depending upon realization of expectations, they are significant, realistic and obtainable, in our opinion.

Realization will depend on a number of factors including adoption of new processes and management of expectations based on improved efficiencies, realignment of personnel. Implementation of SCEIS will save the State a considerable amount of real capital if the implementation is successful and State agencies embrace the concepts even marginally.

There is no question, based on this analysis that the project should continue to a successful conclusion. In addition, it is also our opinion that SCEIS staffing is appropriate and that the State's methodology of maintaining control plus using individual outside contractors, instead of deferring to an integrator is the right approach and should be continued for the remainder of the implementation.

The only concern that we have, which will have impact on the success of the implementation is training. As with any major endeavor such as SCEIS, success is measured by how well people adapt to the changes that impact the "old ways". Positive, proactive, and continuing education, which should include classroom, online, direct and indirect support, will impact success..

Comparative Analysis

In summary, a comparative view of this Review & Update will show that the savings estimates are conservatively lower by 43%. Project costs based on Actual through 2008 plus projected costs through FY 11 are also lower than the 2003 study by 22%.

It should be pointed out that the new numbers do not suggest any reduction in applications addressed or cost shortcuts detrimental to the project. The reduction in costs may, in fact, be attributable to the State's action to assume control and responsibility rather than depending upon an outside integrator to assume these responsibilities.

With respect to ROI analysis, the 2003 study did not employ a discounted interest rate to NPV; therefore we have ignored those results. With a discounted interest applied at 4.6%, the project still reflects a \$137 million dollar positive NPV for the investment life at 50% savings expectation level. This is more than acceptable for any investment.

With respect to IRR for the investment life, using the same level of expectation, the State can expect a positive IRR of 24% at 50% realization of benefits. Again, this is more than acceptable.

Finally, the payback or breakeven should be expected in FY 11. By this time, all implementation of primary applications should be completed. Most agencies should be able to take advantage of and will be able to embrace SCEIS.

Comparative Financial Metrics (in Millions) at 100% Realization

Metric	2003 Study	2008 Study
10 Year Benefit	\$ 899 M	\$ 568 M
10 Year Cost	\$ 164 M	\$ 202 M
NPV (@ 4.6% Discount)	Not calculated	\$ 911 M
Cumulative ROI	\$ 817 M	\$ 461 M
IRR @ 100%	16%	36.45%
Payback Period	6 years from FY 03	7 Years from FY 05

Management Implications and Next Steps

- Since Procurement and Accounts Payable are the largest areas of potential savings, the State should verify Accounts Payable invoice and Procurement processing costs to ensure and validate survey-driven results. Then reassessment of those areas should occur at least 12 months after implementation.
- Assess need for re-engineering and/or staff re-alignment. Many potential savings will only be realized if processes are re-engineered and /or staff reductions or reassignments occur. Due to recent budget cuts, many of the FTE reductions may have already been realized verses the end of June personnel and costs used for these projections. In some agencies, further reductions may not be required to meet SCEIS benefit realization.
- The State must re-assess training needs. During interviews, additional training was described as being relatively ineffective. Training is critical to the success of the project. This will become more important as processes are re-engineered and larger agencies are added to the mix.
- Validate potential efficiency savings with high volume State agencies to ensure efficiency savings are possible, recognizing that some State agencies are already very efficient. Others, of course, have room for improvement.
- Assess the needs of the remaining decentralized organization. Many benchmarks assume an even more centralized organization in which downsizing is more easily accomplished.

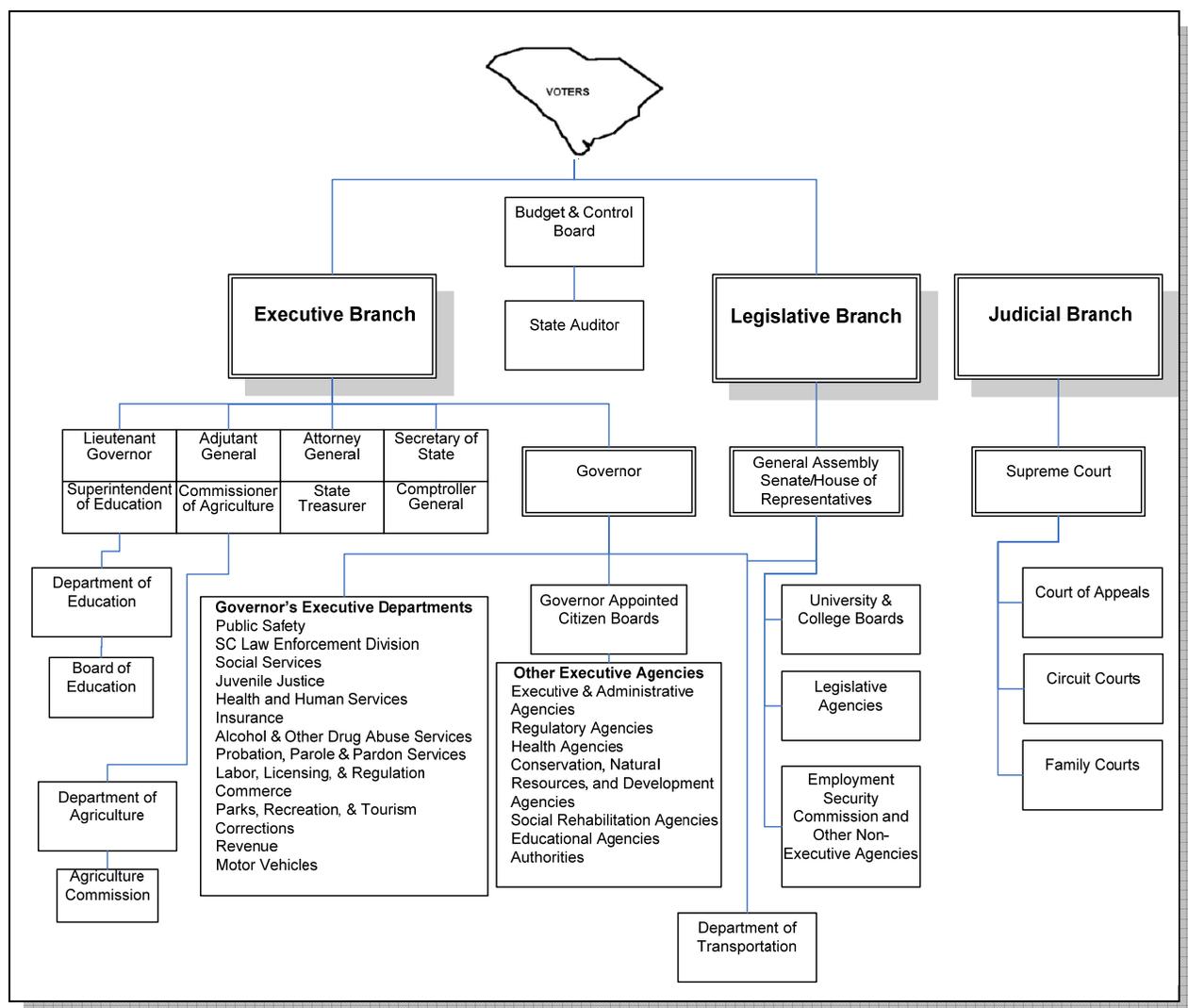
1 Introduction

This section discusses the South Carolina Enterprise Information System (SCEIS) investment background, including a legacy environment overview and a SCEIS project status. This section also summarizes the SCEIS Business Case objectives, methodology, scope, key assumptions, and document organization.

1.1 Background

The State of South Carolina has 70,386 permanent employees (2008 CAFR) and manages a \$20.8 Billion annual budget for FY 09. Approximately 100 state agencies (including 26 colleges and universities) serve 4.4 million residents and 105,000 businesses. The organizational chart in Figure 1 reflects the diversity of services within the State.

Figure 1: State of South Carolina Organizational Chart



For the past 25 years, these state agencies have relied heavily on six central mainframe systems to manage finances, procure goods and services, manage human resources and pay employees. These central systems are often not integrated and lack functionality common to all state agency operations, and impede the State's effectiveness and efficiency. In general:

- **Legacy systems are unable to adapt to changing operational requirements** – Due to its size, complexity, and monolithic architecture, the legacy environment cannot readily adapt to new requirements. To accommodate new requirements and day-to-day operational needs, State agencies developed 169 work-around or homegrown stovepipe systems, ad hoc local end-user applications, spreadsheets, and various manual processes. As a result, the legacy environment is characterized by numerous, independent, stand-alone systems and applications.

State agencies manually prepare, route, and approve financial, purchasing, and human resource documents and forms such as disbursement vouchers, time sheets and leave requests. Legacy systems do not incorporate imaging technology and do not link all financial transactions to the Comptroller General's electronic files.

- **Inadequate integration and information sharing hinders operational effectiveness** – Since the central mainframe and stand-alone systems operate on different platforms and there are no data format standards, information is not readily shared inter-agency or intra-agency. There is duplicate data entry, redundant business processes, and processing delays.
- **Poor data quality hampers operational performance** – The lack of integration causes duplicate data entry which increases data entry errors and special reconciliation procedures. Data is often captured in one system and then re-entered and reconciled with the central payroll or financial systems. For example, the South Carolina Materials Management Office (MMO) used to maintain a set of vendor files to manage large State contracts, while the Comptroller General maintained another set of vendor files for tax reporting purposes.

Additionally, agencies throughout the State maintained their own respective vendor files which duplicate records maintained by the MMO and the Comptroller General. The same duplication exists with agencies maintaining their own chart of accounts, employee files, and customer files. Duplicate data entry is inefficient, requires extra time to reconcile differences, and is a factor causing chronic problems with data timeliness, completeness, and accuracy.

- **Lack of standardized processes impedes accurate and timely reporting** – The number and diversity of business processes mirror the number of IT systems and their diversity. Manual data entry and reentry, then performing redundant checks and balances in multiple systems is time-consuming, resource-intensive, and costly.
- **Inadequate information technology systems hamper trend analysis and resource management** – The State is hampered by antiquated and inadequate information systems which cannot link operational performance to financial budgets and plans. The lack of

integration among 169 systems and applications also impede management's ability to obtain reliable performance and management reports.

Recognizing the need for an integrated statewide financial system, the State issued a Request for Qualifications (RFQ) in April 2000. Based on the RFQ results, the South Carolina Comptroller General's Office and the Budget and Control Board (B&CB) issued a request for proposals to qualified vendors for a statewide financial management system, including document imaging capabilities. The State selected the SAP R/3¹ software, selected BearingPoint as its implementation consultant, and selected Team 1A to provide document imaging software. In November 2001, the Department of Mental Health began implementing a pilot project to automate the financial and procurement process and went live a year later.

To evaluate the potential merits of an integrated statewide financial management system, the previous study conducted a return-on-investment (ROI) analysis. In February 2003, under the direction of the South Carolina State Legislature and the B&CB, the State of South Carolina and the contractor jointly submitted the SCEIS Business Case Study. The Study estimated that over a 10-year investment horizon, the SCEIS investment would cost \$164 million and benefits would conservatively total \$899 million. These numbers do not take into consideration \$82 million savings in cost avoidance. The internal rate of return (IRR) was estimated at 187 %.

In June 2005, the General Assembly authorized the SCEIS investment. Currently, 30 state agencies plus the State's central purchasing office have implemented the Finance (FI) and the Materials Management (MM) functionality.

In November, 2009, 36 additional agencies are planned to go live with FI and MM. This includes a number of larger, more complex, agencies that require additional development to cover gaps discovered during gap analysis and 4 large agencies in the spring of 2010. On January 1st, 2010, the State is planning on going live with Human Resources & Payroll for 66 agencies already live with FI and MM. The remaining 4 agencies will go live with HR & PR on July 1st, 2010 if all goes as planned.

Business Case Objectives

In May 2008, the South Carolina legislature ratified the 2008-2009 General Appropriations Act. The Act issued the following two related directives to the Budget and Control Board (B&CB):

80A.56. (BCB: SCEIS Business Case Study) The Budget and Control Board is directed to have a study conducted to update the South Carolina Enterprise Information System business case study originally conducted in 2003. The study shall update the 2003 business case study to reflect current conditions and review and update projected savings to agencies. The results of the study shall be reported to the Chairman of the Senate Finance Committee and the Chairman of the House Ways and Means Committee by December 1, 2008. The Comptroller General's Office shall provide funding to pay for the update.

¹ SAP ERP is the new name for SAP R/3. SAP ERP is an "enterprise resource planning" software package used to manage the resources (capital, human resources, machinery, etc.) of an organization.

80A.57. (BCB: SCEIS Agency Implementation Guide) The Budget and Control Board shall have prepared by January 23, 2009, an Agency Implementation Guide for agencies required to participate in the South Carolina Enterprise Information System (SCEIS). The Agency Implementation Guide should provide agencies guidance for implementation of SCEIS and guidance to potential savings identified in the updated business case study performed pursuant to other provisions in this Act. This guide will serve as a basis to agencies as they report their savings from the SCEIS implementation to the Senate Finance Committee and House Ways and Means Committee, so that the committees may take into account those savings as they develop the annual budget.

On November 1st, 2007, the State contracted Science Applications International Corporation (SAIC) to provide Independent Verification and Validation (IV&V) services for the SCEIS project. In October, 2008, the B&CB tasked the SAIC IV&V Team to update the 2003 SCEIS Business Case Study. This update will achieve the following key objectives:

1. Summarize the baseline (legacy) and SCEIS environment costs
2. Provide an independent estimate of SCEIS investment benefits
3. Update the financial metrics
4. Compare the 2003 Business Case Study to the current results

1.2 Business Case Methodology

During October, 2008, the IV&V Team began planning the Review & Update of the Business Case. In November, 2008, elements of SAIC's Center of Excellence, specifically Capital Planning and Investment Control (CPIC), were added to the process to update the SCEIS Business Case. The analysis followed a structured methodology outlined in Figure 2.

This methodology was adapted from a commonly-accepted Cost Benefit Analysis (CBA) methodology. The CBA methodology provides the basis for making economically-sound investment decisions by consolidating total costs and benefit estimates into investment decision criteria (i.e., financial metrics such as Return-On-Investment (ROI), Internal Rate of Return (IRR), Net Present Value (NPV), and payback period). These criteria are standard to public and private sector investment analysis. The updated CBA modifies the commonly-accepted methodology for three reasons:

1. Since a CBA is typically used to make investment decisions, a CBA is prospective – estimating future costs and benefits. Therefore, all prior expenditures are considered “sunk costs” and irrelevant to the investment decision. However, this CBA includes “sunk costs” – it is both forensic (i.e., including the past 4 years of SCEIS effort) and prospective.
2. Since a CBA is used to make investment decisions, a CBA typically analyzes the “as is” environment (i.e., Baseline), identifies the requirements of the “to be” environment, and then conducts a gap analysis (i.e., the difference between the “as is” and the “to be” environments). To fill the gap, a CBA examines several alternative cost and benefit

scenarios. Since the investment decision was made in 2005², this CBA does not examine any alternatives with respect to costs or alternative systems.

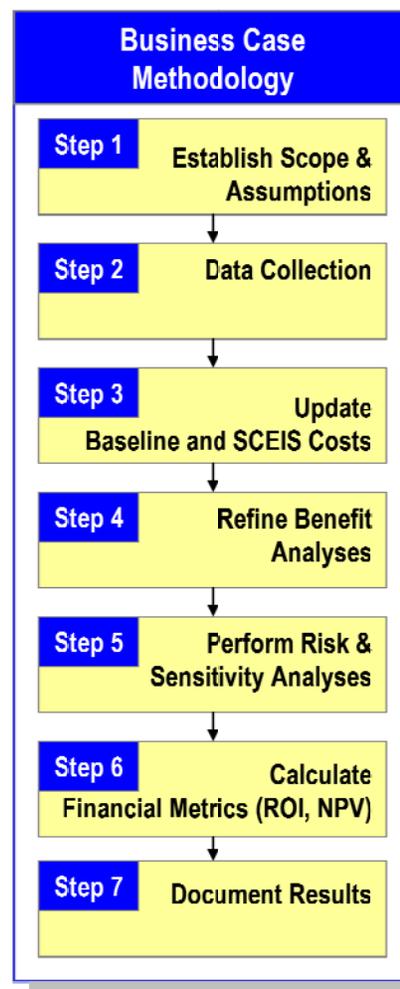
- An economically-sound financial analysis provides both risk-adjusted costs and risk-adjusted benefits. The SCEIS Oversight Committee Chair directed the CBA team to accept the Budget & Control Board, Division of State Information Technology (DSIT) cost estimates without further evaluation. Therefore, the CBA team has not determined whether these cost estimates are reasonable or whether the planned functionality can be achieved within the cost estimate/budget limits. This CBA simply provides an independent benefit analysis and compares this analysis with the original Study.

The following describes the steps outlined in Figure 2. Although the steps are depicted as sequential, the steps may be iterative as additional information is gathered.

- Step 1: Establish Scope & Assumptions.** In conjunction with the IV&V Team, the CBA team identified the in-scope and out-of-scope analysis constraints, global and other SCEIS analysis-specific assumptions. High level requirements (i.e., SAP functionality or applications) were also identified.
- Step 2: Collect Data.** Similar to the 2003 Business Case, data collection occurred via detailed surveys sent to State agencies. Numerous South Carolina, SCEIS, and other industry-related documents were also reviewed. Survey results were obtained from 57 of 70 agencies representing 98.3% of State FTE's involved with implementation of SCEIS.
- Step 3: Update Baseline and SCEIS Costs.** This analysis provides the 2003 Business Case Study legacy baseline environment cost estimates adjusted forward, and the actual and estimated SCEIS acquisition and operations and maintenance (O&M) costs provided by DSIT and SCEIS.

The SCEIS cost estimates were based on actual data through June 20, 2008 (Fiscal Years 2005 to 2008), planned actual and estimated cost data from July 2008 through June 2010 (Fiscal Years 2009 & 2010) and estimated costs for five additional Fiscal Years. This analysis assumes and accepts SCEIS costs as fixed and accurate.

Figure 2: Business Case Methodology



² State of South Carolina, SCEIS Business Case Study, February 25, 2003, Report to the State, p. 2.

Consistent with best practice, this CBA adheres to the following best practice principles:

- **A CBA must include all investment-related costs and benefits.** This principle ensures that total project costs are captured and evaluated and that management can make an informed investment decision and a sound budget decision. While an investment decision and a budget decision are interrelated, they are not the same. For example, if the investment cost exceeds the available budget, the CBA should provide decision-makers with the information to determine which costs and functionality (i.e., benefits) to cut to bring the project within budgetary limits.
- **To ensure that all costs and benefits are captured, a CBA is “budget-blind”.** In short, life cycle costs, not funding sources, are irrelevant.
- **A CBA applies constant-year (i.e. nominal) dollars.** No inflation is added. When formulating a budget from a CBA, it is critical that inflation be added.
- **Step 4: Refine Benefit Analysis.** The functional requirements drive the qualitative (i.e., strategic and technical) and quantitative benefits. Quantitative benefit estimates were based on surveys sent to State agency staff and contractors. Where efficiencies had yet to be realized, industry research was performed to estimate potential benefits. The resulting quantitative benefits were categorized as **cash savings, cost avoidance or efficiency savings**. Qualitative benefits were categorized as either technical or strategic benefits.
- **Step 5: Perform Risk and Sensitivity Analysis.** Upon completion of the project benefit estimates, a sensitivity analysis using a risk analysis software tool (i.e., Crystal Ball) was also performed to assess how changes to key variables would impact ROI in terms of Net Present Value (NPV) and Internal Rate of Return (IRR). This type of analysis is helpful in understanding the uncertainty in the analysis and the underlying assumptions. Resulting sensitivity charts provided insight into key assumptions and realization of SAP benefits.

Since SCEIS costs are fixed, no risk or sensitivity analysis was conducted on costs.

- **Step 6: Calculate Financial Metrics.** Incremental time-phased costs and benefits were developed for 6 years of development and 4 years of operations and maintenance (O&M). The incremental time-phased, risk-adjusted, discounted costs and benefits were used calculate to the ROI, IRR, and payback period. NPV is the discount rate based at which the present value of benefits equals the present value of costs. An IRR that exceeds the policy-prescribed discount rate indicates worthy public investments.
- **Step 7: Document Results.** The analysis is documented in this Business Case, which includes the financial, strategic, and technical benefits. The analysis also includes a comparison to the original 2003 Business Case.

1.3 Business Case Scope

The Business Case scope is based on the planned SCEIS functionality, organizations and other IT characteristics summarized in Figure 3. The following documents were referenced for in-scope and out-of-scope functionality:

- *Financials and Procurement Business Blueprint* (June 20, 2005)

- SCEIS *Project Charter* (February 13, 2006)
- *SAP Gap Analysis* conducted by SAP (May 12, 2006)
- *SCEIS Statement of Work* in conjunction with BearingPoint (dated June 12, 2006)
- *SCEIS Change Order #5* in conjunction with Deloitte Consulting (May 18, 2007)
- *SCEIS Human Resources and Payroll Business Blueprint* in conjunction with Beeline contractors and BearingPoint (October 10, 2008)

In-Scope and Out-of-Scope Applications and Governmental Units:

Figure 3: SAP Scope

In-Scope		
Functionality	<p>Finance (FI)</p> <ul style="list-style-type: none"> ▪ General Ledger ▪ Funds Management ▪ Grants Management ▪ Accounts Payable ▪ Accounts Receivable ▪ Cash Management ▪ Asset Accounting & Tracking ▪ Travel Reimbursements ▪ Project Accounting ▪ Book of Record ▪ Budgeting <p>Imaging Solution</p> <p>Reporting</p> <ul style="list-style-type: none"> ▪ Standard SAP Reporting ▪ Business Warehouse ▪ Business Objects 	<p>Materials Management (MM)</p> <ul style="list-style-type: none"> ▪ Vendor Master ▪ Purchase Requisitions (SRM) ▪ Invitations to Bid ▪ Purchase Orders ▪ P-Card Processing ▪ Shopping Cart (SRM) ▪ Document Builder ▪ Statewide Procurement (MMO) ▪ Statewide Contract Management ▪ Inventory Management <p>Human Resources</p> <ul style="list-style-type: none"> ▪ Organizational Management ▪ Personnel Administration ▪ Employee/Manager Self Service ▪ Payroll Administration ▪ Personnel Time Management ▪ Benefits Administration ▪ Travel Management ▪ ESS Portal
Organizations	<p>Judicial Branch</p> <ul style="list-style-type: none"> ▪ Supreme Court 	<p>Executive Branch</p> <ul style="list-style-type: none"> ▪ 70 Agencies

Out-of-Scope	
Functionality	<p>Finance (FI)</p> <ul style="list-style-type: none"> ▪ Cost Accounting ▪ Project Management <p>Human Resources (HR & PY)</p> <ul style="list-style-type: none"> • Personnel Cost Planning • Compensation Management • Workforce Analytics (some analytic reporting in Scope) • Grievance Processing • Qualifications Management • Benefits (Interface is in-Scope) <p>Agency-specific, mission-critical applications – Gap Analysis to Identify Other SAP sub-systems (e.g., CRM)</p>
Organizations	<p>Entire Legislative Branch</p> <p>Select Executive Branch Agencies</p> <ul style="list-style-type: none"> ▪ Colleges and universities ▪ Athletic Commission ▪ Various small Licensing Boards & Commissions ▪ Education Lottery Commission <p>Judicial Branch</p> <ul style="list-style-type: none"> ▪ Sentencing Guidelines Commission
Other	<ul style="list-style-type: none"> ▪ Desktop hardware and software ▪ Agency network and infrastructure

1.4 Business Case Assumptions

The SCEIS project has identified the functionality, specified equipment configurations, pricing, timing, and all acquisition requirements. CBA-specific assumptions are summarized below and apply globally to all costs and benefits unless otherwise noted in the specific sections.

1.4.1 Strategic

On June 9, 2005, the South Carolina General Assembly enacted legislation (Title 11 Public Finance, Chapter 53) to authorize the SCEIS investment.

- **Section 11-53-10 Special accounts** established a special account for the purpose of funding the agency’s nonrecurring implementation expenses of SCEIS. The Comptroller General is given responsibility to monitor these special accounts.
- **Section 11-53-20 Implementation; exemptions; reports** mandates full implementation within five years. The SCEIS investment shall be for the implementation of “back office” administrative functions that are common to all agencies in the areas of purchasing, finance, human resources, payroll, and budgeting. The SCEIS Executive Oversight

Committee is responsible for project scope, implementation schedule, and associated costs.

1.4.2 Technical

- **Desktop Hardware and Software.** Each agency insures desktop hardware and software meets minimum standards for SCEIS implementation.
- **Existing Agency Infrastructure.** Each agency's existing infrastructure meets the minimum standard for SCEIS implementation.

1.4.3 Financial

- **Fiscal Year** – All years shown are State of South Carolina fiscal years. The fiscal year (FY) runs from July 1 through June 30.
- **Investment Horizon** – The investment horizon spans 10 years from FY 2008 through FY 2017. This horizon reflects 7 years of Design, Modernization, Enhancement (DME) and 5 years of operations and maintenance (O&M). For some analysis, the investment horizon was expanded to include 15 years of expected product life.
- **Person-Day** – One person-day is equivalent to 8 person-hours. According the State OHR, there are 2,080 person-hours per year (260 days). The 2003 Business case used 1840 person hours per year (230 days).
- **Average Employee Salary** – \$36,795³ is the weighted average salary of State classified personnel.
- **Fringe benefit rate** – 31.01 percent⁴, \$23.1752 per person-hour.
- **Constant Dollars:** Constant year dollars (real dollars) are used for cost and benefit estimates and comparisons. Inflation-adjusted dollars should be used for budgeting purposes.
- **Discount Rate** – Based on the Federal 2008 10-year maturity discount rate⁵, plus a 200-basis point spread to represent approximate additional market risk. A 4.6 percent discount rate is used.

1.5 Report Organization

This report is organized in the following eight sections:

- **Section 1: Introduction** which includes the background, objectives methodology, assumptions and the document organization.
- **Section 2: Baseline Cost Estimates (Formerly Assessment of Current Business Systems)** which describes the current legacy systems and costs.

³ <http://www.ohr.sc.gov/OHR/statistics/EmployeeDemographicSheet.pdf>, September 30, 2008.

⁴ Division of State Information Technology, *SCEIS Rev-Exp 2008-11-21* spreadsheet assumption for Employer Contributions with adjustments to compensate for overstatement of benefits

⁵ <http://www.whitehouse.gov/omb/circulars/a094/dischist.pdf>

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- **Section 3: Benefit Estimates (Formerly Assessment of Existing Business Processes)** which discusses the strategic, technical and financial benefits that the SCEIS investment has realized and is expected to realize over the investment horizon. The financial results reflect risk-adjusted benefit estimates.
 - **Section 4: SCEIS Cost Estimates (Formerly Estimated Costs for Implementing and Supporting SAP)** which summarizes the one-time acquisition costs and on-going operations and maintenance costs of the SCEIS investment.
 - **Section 5: Statewide Implementation Plan** which summarizes the rollout strategy and planned implementation for the SCEIS investment.
 - **Section 6: Return on Investment Results** which explains the cash flow, return-on-investment (ROI) and investment rate of return (IRR) results.
 - **Section 7: Reconciliation to 2003 Business Case** which compares and contrasts the updated Business Case results with the original 2003 Business Case results.
 - **Appendix A: Benefits Analysis Worksheets**
 - **Appendix B: ROI Analysis Worksheets**
 - **Appendix C: Acronyms** – Defines acronyms used in the business case.
 - **Appendix D: Survey Results**– Summarizes survey results used to formulate benefit estimates.
 - **Appendix E: Key Contributors** – Identifies key business case resources.

2 Baseline Cost Estimates

To meet their financial, procurement, human resource and payroll requirements, the State of South Carolina and its agencies have developed a myriad of systems. This section describes the State of South Carolina's primary legacy information technology (IT) systems and their costs.

2.1 Legacy Information Technology Systems & Cost Avoidance

There are two categories of legacy IT systems – central systems and agency systems.

2.1.1 Central Systems

The Statewide Accounting and Reporting System (STARS) is the State of South Carolina's official book-of-record for financial transactions, and it is the primary application for managing statewide budget and expenditures. It includes the Generally Accepted Accounting Principles (GAAP) Reporting System and Subsystems which supports State's Comprehensive Annual Financial Report. Agencies transmit (primarily electronic) transactional data to STARS. Although the Office of the Comptroller General manages and maintains the system, the State Treasurer's Office uses its own STARS version to write checks from approved warrants for state agency expenditures. These systems are more than 30 years old.

The Office of Human Resources uses the Human Resource Information System (HRIS) to maintain selected records for State employees. Many agencies use HRIS, although they supplement it with agency-specific subsystems. The State developed this application, and DSIT maintains the system.

The Office of the Comptroller General uses the Statewide Payroll Systems and Subsystems to maintain payroll for all State employees. The State developed this application more than 30 years ago. Agencies send gross pay information to the Statewide Payroll System, and it produces warrants for paychecks or processes direct deposit transactions. The State Treasurer's Office writes the checks with its Payroll System.

2.1.2 Agency Systems

Several agencies use one of three shared systems to meet their administrative requirements:

- Seventeen (17) agencies use the SABAR system to support their financial and procurement activities and/or human resource and payroll requirements. Palmetto Software built and maintained the SABAR package.
- Fourteen (14) agencies use the Basic Agency Reporting System (BARS) software package to support their financial activities.
- Five (5) agencies use the GAFRS system to support their financial and procurement activities. The DSIT maintains GAFRS.
- All CIO functions referred to in the 2003 Business Case and this Business Case Review & Update are now performed by the Division of State Information Technology (DSIT)

Many State of South Carolina agencies, commissions, and boards have acquired or developed their own customized systems to manage financial, procurement, human resource, and payroll

information and processes. To identify these systems, the Office of the Comptroller General and BearingPoint conducted a systems inventory survey for the 2003 Business Case that reflected data from 37 of 74 agencies. (The 37 organizations represented 87 percent of State appropriations in FY 2001-2002.) These organizations collectively identified 169 systems. At that time, the average age of those systems was over 10 yrs.

A significant net savings is realized from the SCEIS implementation. These savings reflect removal of costs associated with legacy systems plus costs to update or replace these systems. Cost to operate existing systems was provided by DSIT. This analysis includes both agency level costs and cost at DSIT for various centralized systems. These costs include the cost of maintenance, annual support, personnel, monitoring, and custom programming/reporting.

Cost avoidance also includes costs to acquire new software if SCEIS is not fully implemented. A very conservative figure of \$3 million per year has been estimated for new software, support, implementation, and maintenance. Of course, some of these costs have been offset by and incorporated into the Operational Cost estimates for SCEIS, also reflected in ROI analysis.

Figure 4 reflects the current legacy costs that will be replaced by SCEIS during the investment horizon beginning FY08 and running through FY17. Since the decision was made in FY05 to proceed with SCEIS, replacement costs for FY06, FY07, and FY08 are shown in FY08. The dollars shown below were used in the ROI analysis.

Also, please note that systems do not come off line all at once. During startup, some legacy systems are still available to support historical data. By FY11, all legacy systems should be offline for agencies as well as for Centralized systems.

Figure 4: Legacy Cost Estimates

	FY8	FY9	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	Total
EXISTING COSTS, FINANCE & PROCUREMENT SYSTEMS											
Agency											
SABARS	\$ -	\$ 878,443	\$ 878,443	\$ 878,443	\$ 878,443	\$ 878,443	\$ 878,443	\$ 878,443	\$ 878,443	\$ 878,443	\$ 7,905,987
BARS	-	72,049	72,049	72,049	72,049	72,049	72,049	72,049	72,049	72,049	648,441
GAFRS	-	-	-	877,605	877,605	877,605	877,605	877,605	877,605	877,605	6,143,235
Custom	-	880,959	1,115,138	1,115,138	2,230,276	2,230,276	2,230,276	2,230,276	2,230,276	2,230,276	16,492,891
Central											
CG (STARS)	-	398,591	265,318	495,921	926,955	926,955	926,955	926,955	926,955	926,955	6,721,559
B&CB (Various)	-	39,754	26,462	49,461	92,450	92,450	92,450	92,450	92,450	92,450	670,376
Treasurer (STARS)	-	284,721	325,562	608,527	662,143	662,143	662,143	662,143	662,143	662,143	5,191,668
Total, Existing Costs, Finance & Procurement Systems	\$ -	\$ 2,554,517	\$ 2,682,971	\$ 4,097,143	\$ 5,739,921	\$ 43,774,157					
EXISTING COSTS, HR AND PAYROLL SYSTEMS											
Agency											
SABARS	\$ -	\$ -	\$ -	\$ 303,220	\$ 303,220	\$ 303,220	\$ 303,220	\$ 303,220	\$ 303,220	\$ 303,220	\$ 2,122,540
BARS	-	-	-	15,624	15,624	15,624	15,624	15,624	15,624	15,624	109,368
Custom	-	-	-	433,482	866,963	866,963	866,963	866,963	866,963	866,963	5,635,260
Central											
CG (STARS)	-	-	-	173,146	494,704	494,704	494,704	494,704	494,704	494,704	3,141,370
B&CB (Various)	-	-	-	268,336	766,673	766,673	766,673	766,673	766,673	766,673	4,868,374
Treasurer (STARS)	-	-	-	5,339	15,254	15,254	15,254	15,254	15,254	15,254	96,863
Total, Existing Costs, HR and Payroll Systems	\$ -	\$ -	\$ -	\$ 1,199,147	\$ 2,462,438	\$ 15,973,775					
Estimated Annual Cost for Upgrades and Replacements to Agency Legacy Systems	3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 36,000,000
GRAND TOTAL, ALL SYSTEMS	\$ 3,000,000	\$ 5,554,517	\$ 5,682,971	\$ 8,296,290	\$ 11,202,359	\$ 95,747,932					
CUMULATIVE CURRENT SYSTEMS COSTS	9,000,000	14,554,517	20,237,488	28,533,778	39,736,137	50,938,496	62,140,855	73,343,214	84,545,573	95,747,932	

2.2 Data inconsistencies found in the 2003 cost estimates:

- 2.2.1** Benefits percentage appears to include either costs for vacation, holidays, and sick leave twice in that these benefits are captured in the base pay, and then in benefits; or, an unknown factor was applied for overhead. In our opinion, salaries should be calculated to include the average classified rate plus known fringe benefits, then averaged for the difference between married and single State personnel. This methodology was employed in the 2008 Review & Update.
- 2.2.2** In the 2003 study, 230 days, or 1,840 hours were used to estimate costs. The State, however, is using 260 days, or 2080 hours in most internal calculations. Although we feel this number of working days per year may be high, this number was used to calculate results in this study. Using a lower number hours and days would result in higher benefits; however, in the interests of conservatism, we chose the higher # of days which results in a lower hourly rate.
- 2.2.3** The above inconsistencies have been corrected in the Review & Update. The annual rate, including benefits used herein is \$48,204.25 (see compensation calculator spreadsheet used in the 2008 Study) at the end of FY 2008. Based on a 2080 hour working schedule, this converts to \$23.18 (23.1752) which was adopted for all calculations. $\$23.1752 * 8$ is a \$185.40 daily rate.

2.3 Summary

The Baseline environment is characterized by “stove-pipe” monolithic systems and applications. There is some interoperability, but it is limited. Interoperability and ability to share data inter-agency or intra-agency is often achieved through manual or application-to-application specific interfaces. The legacy statewide mainframe application architecture is difficult to modify or extend, and as a result, the State has had difficulty responding to new needs. This situation has led to a proliferation of special purpose systems that lack the ability to share data or operate together.

There are limited standard data definitions between systems; therefore, duplicate data entry is normally required into multiple systems. Data that management needs to manage performance is often missing, inaccurate, inconsistent, or spread across a variety of non-integrated systems that are difficult and time consuming to compile and analyze.

Legacy costs are estimated to total \$11.2 million annually. Through the SCEIS investment horizon, the legacy environment and cost avoidance savings is estimated at \$95.7 million as shown in Figure 4, above.

3 Benefit Estimates

In large information technology (IT) investments, not all benefits are quantifiable, and identifiable financial benefits may be insufficient to justify an investment. This is not the case for South Carolina. Nonetheless, non-quantifiable benefits can be sufficiently compelling to add to the justification of an investment, even if it had negative financial realization.

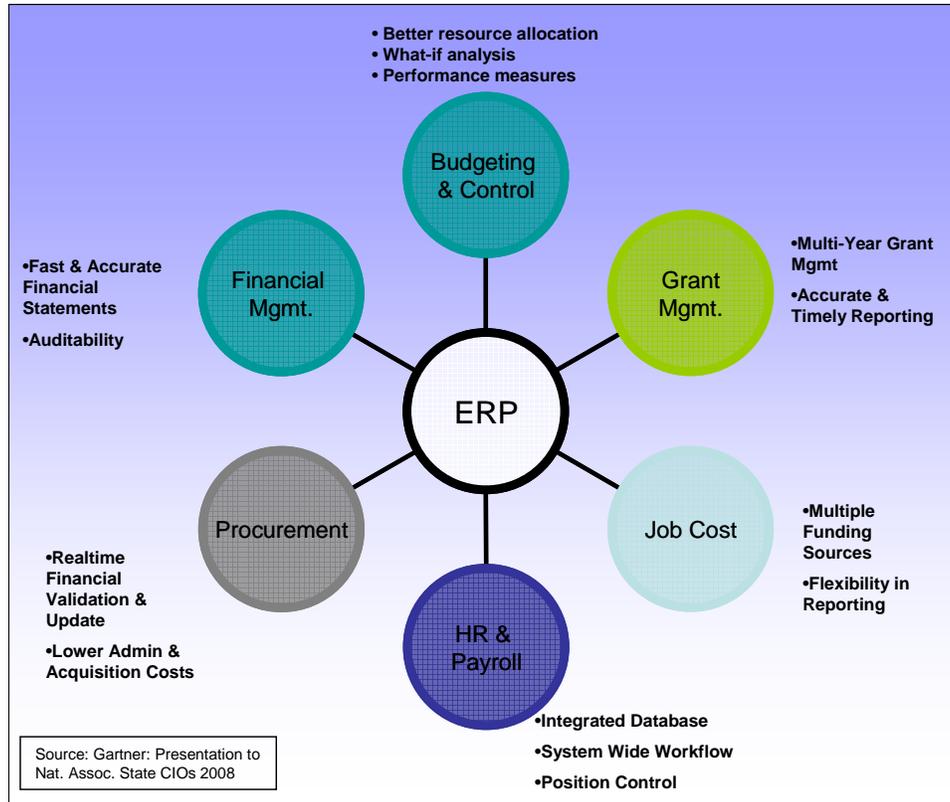
Investing in current technology can improve efficiencies, customer service and managerial capabilities, but may not be cheaper. Therefore, it is important to document both non-quantifiable and financial benefits. We have attempted to point out non-quantifiable benefits in this section in addition to the obvious financial justification.

The State of South Carolina's legacy environment is characterized by:

- Multiple, aging legacy systems at risk of failure and loss of vendor support
- Redundant data and information sources
- Proprietary custom solutions supporting diverse business processes
- Challenges with coordination of accounting, budgeting, procurement, HR, analysis & compliance

Continuing with piecemeal upgrades and patches to the current legacy systems is not attractive strategically, technically, or operationally. The 2003 Business Case Study made a compelling case for change, and the justification today is more relevant. According to Gartner Research, Enterprise Resource Planning (ERP) applications deliver many public sector benefits as:

Figure 5: Public Sector Benefits from ERP Implementation



This analysis re-assesses and categorizes potential benefits based on an updated survey of business processes, SCEIS user experience, and SAP expectations.

This section summarizes the SCEIS benefit analyses. This analysis categorizes benefits as strategic, technical or financial. Financial benefits are organized by functionality and described as a cash savings, cost avoidance or efficiency savings. Appendix D, Benefit Notes provides amplifying basis of estimate.

3.1 Strategic Benefits

The SCEIS enhanced functional capability results in important and wide-ranging strategic merits. These benefits include:

- **Supports the State’s mission goals and objectives** — The SCEIS investment is a cornerstone for implementing the State of South Carolina Information Technology Strategic Plan mission and vision. It enables the state to meet its commitments to improve citizen and constituent services as embodied in the Plan’s key results.
- **More accurate and reliable information** — SCEIS will eliminate duplicate, manual error-prone data entry, providing more accurate and more reliable information. Users will have better access to information due to web-based

IT Strategic Plan Mission: Through increased cross-agency information sharing, expanded resource coordination and the development of a formalized process for prioritizing enterprise information technology (IT) investments, agencies will be able to leverage information technology to deliver high quality, efficient services for citizens and constituents.

applications. With more reliable and accurate information, reconciliation reports can be reduced or eliminated.

- **Improves Information Sharing, Process Standardization and Interoperability** — SCEIS will automate and standardize many manual processes, enabling management to collect and disseminate important financial data and trends on a real-time basis. Analytical and forecasting capabilities will improve management reporting. SCEIS will also create interoperable databases and enhance user interfaces that permit timely and relevant information exchanges. Documents will be filed electronically to facilitate storage and retrieval. In doing so, timely access to SCEIS data and other intra-agency and inter-agency databases will be achieved between central State management and its agency partners.
- **Enhances Customer Service** — By enabling streamlined, automated processes, SCEIS can speed vendor or grantee payments or provide back-office personnel the capability to respond quickly and efficiently to questions.
- **Empowers Employees** — Through the employee self-service capability, employees will have access to career development and benefit information. Access to state-of-the-art technology enables employees to do their job more effectively, improves morale, and benefits employee career development perceptions by fostering training and skills in in-demand technologies and knowledge.
- **Provides Performance and Productivity Accountability** — By increasing government-wide transparency and enabling shared business processes and capabilities, the SCEIS project will allow a greatly enhanced opportunity for measurement and analysis. Timely access to comprehensive data will allow management to evaluate efficiency, value, and performance more effectively.

3.2 Technical Benefits

The SCEIS investment provides a technical solution to promote information sharing and interoperability. Other technical benefits that address baseline deficiencies include:

- **Provides Critical Infrastructure Reliability (24x7)** — SCEIS will modernize the IT infrastructure, to reliably and effectively support the State Agency business activities and mission goals.
- **Available technology** — By moving away from legacy customized and decentralized tools and processes, the Government of South Carolina is adopting one of a few principal industry standards for which a future technology roadmap is assured. The wide user base also guarantees an available pool of skilled practitioners and consultants and will allow management to benchmark against best practice more effectively.
- **Offers a Scalable and Flexible Solution** — The SCEIS software application is scalable and flexible. As needed, the State and its agencies have the capability to add agency-specific applications.
- **Creates a Single Infrastructure Platform** — SCEIS will implement a single, back-office operating environment and a refresh strategy that will facilitate maintenance and minimize downtime.

- **Improves IT Security** — SCEIS will establish a security foundation that will ensure overall IT security. The system will authenticate users and establish a single standard physical and logical access control mechanism.
- **Reduces IT Management Complexity** — Despite the initial challenge of a complex migration to a new platform, over time the use of a centralized ERP solution should reduce management complexity, which must currently contend with a large estate of systems and processes.

3.3 Financial Benefits

Financial benefits are limited to those for which a dollar value can be assigned. For example, a time-savings or materials reduction, while numerically stated, only becomes a financial benefit once it is given a financial value. The financial benefits are categorized as cash savings, cost avoidance or efficiency savings.

- **One-Time Savings** represents sale of obsolete inventory and reduction of inventory plus carrying costs based on more efficient materials handling and increased number of inventory turns.
- **Cost avoidance** reflects “soft savings” or action taken to reduce future costs, such as Operation and Maintenance of legacy systems. It is assumed, for purposes of this case study that most legacy systems will be shut down or phased out beginning in FY 2011. Cost avoidance also includes the cost of hardware, software, and services that will not be required due to implementation of SCEIS.
- **Efficiency savings** represent improved processing time or throughput achievable with SCEIS plus elimination of most of the paper records currently maintained by the State. Efficiency savings will most likely enable agencies to operate with fewer personnel than were required in FY 2008. Efficiency savings, however, can be a slow process. No efficiency savings should be expected or are recognizable during the first 6 months following GoLive within an agency. During the following year, many of the efficiency savings will be realized after users are fully trained and in full production with SCEIS. For purposes of this study, savings were calculated in the following fiscal year if the agency was live at least 6 months during the prior fiscal year.

Much efficiency savings will be realized due to more efficient entry and approval processes, elimination of duplicate entry, and elimination of copying and filing of documents. These benefits will result in fewer personnel requirements over the 10 year investment horizon.

The benefits have also been adjusted for timing and implementation. Benefits accrue in proportion to the SCEIS project deployment. A simplifying assumption is that benefits accrue in direct proportion to live agencies’ proportion of total FTE employees. In addition, a simplifying assumption was also used to approximate a “learning curve” which represents the common lag between implementing or learning a new process and the ability to make full use of its benefits. Agencies achieve 75% of the benefits of new capabilities in the year they are implemented, 85% in year 2 and 100% in year 3.

Because some agencies have already gone live, emphasis on assessing benefits is placed on recorded improvements in performance following SCEIS implementation. In practice, statistically, there were few “live” agencies returning positive results. The updated analysis however, was often able to use the results to validate rules of thumb or ERP software benchmarks. This approach was used for benefits deriving from the financial and materials management modules which some agencies are using.

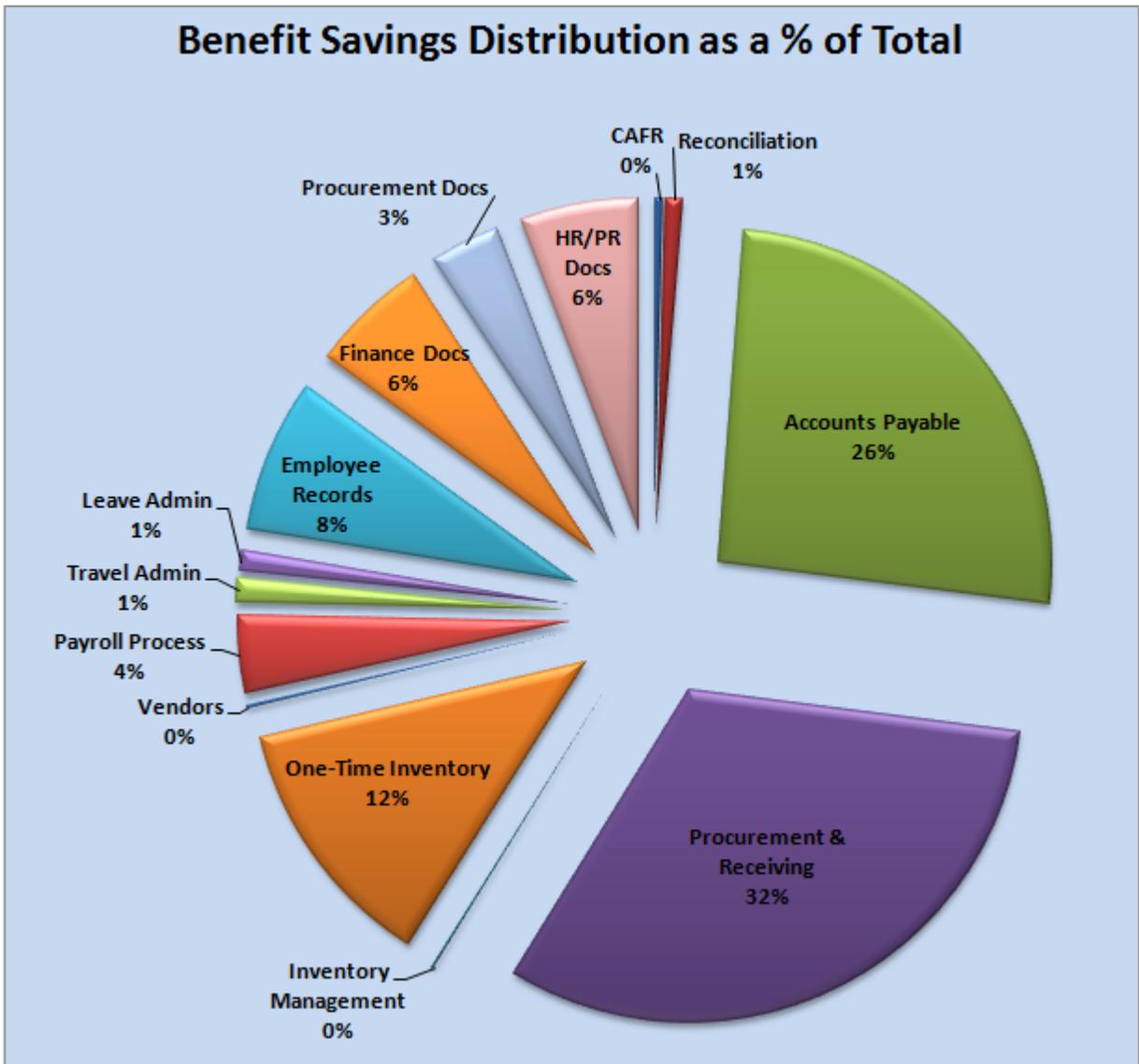
Using the conservative methodology, it is expected that the SCEIS investment will realize a total \$46.3 million in one-time savings driven largely by inventory adjustments and more efficient procurement, \$95.7 million in cost avoidance as legacy systems come off line; and, conservatively, \$508.9 million in efficiency savings, for total benefits of \$617.4 million over the 10-year investment horizon. All benefits are summarized in Figure :

Figure 6: SCEIS 10-Year Benefit Estimates

SCEIS Module	One-Time Savings	Cost Avoidance	Efficiency Savings	Total
Finance (FI)	\$ 0	Cost avoidance includes legacy systems O&M plus cost of new replacement hardware & software	\$ 142,210,799	\$ 142,210,799
Materials Management (MM)	\$ 46,294,387		\$ 168,944,165	\$ 215,238,552
Human Resources / Payroll (HR PR)	\$ 0		\$ 72,177,921	\$ 72,177,921
Document Management	\$ 0		\$ 79,303,797	\$ 79,303,797
Total	\$ 46,294,387	\$ 95,747,932	\$ 462,636,682	\$ 617,423,080

The percentage of benefits accruing by process is depicted in Figure 7 below.

Figure 7: Percent of Total Benefits from SCEIS Process



As the graphic illustrates four process benefits (Accounts Payable, Processing Purchase Orders, Benefits Administration and Payroll) represent over 72% of targeted benefits.

The following sections explain the benefit assumptions and calculations for each SCEIS Module. Appendix E, Survey Results provides the raw data collected from each agency to support benefit calculations. Raw data is then rolled into process calculation spreadsheets which may be found in Appendix A: Benefits Calculations.

4 Process Benefits

This section describes the business processes and current estimated costs before the SCEIS investment based on a agency survey taken in November 2008. Based on the costs, the efficiency savings can be derived from the implementation of SCEIS Financial Accounting module. (SAP FI)

4.1 Finance Benefits

4.1.1 Preparing the State's Comprehensive Annual Financial Report

The Comptroller General is responsible for preparation of the State's Comprehensive Annual Financial Report (CAFR). To develop the CAFR, the Comptroller collects financial information from all state agencies, boards, commissions, and universities, either through a series of detailed closing packages or via independent agency financial statements.

Agency personnel collect the requested financial data from a number of disparate and non-integrated systems and manually-maintained records. The CG's office will consolidate all data received and prepare the Statewide Annual Financial Report including preparation of all supporting documentation.

The Office of the State Auditor (OSA) reviews the CAFR in detail to assure that the financial information is free of material misstatement. This audit is performed both by State personnel and an independent auditor outside of the State. Once the CAFR has survived scrutiny by OSA, the CG's office aggregates and formats audited financial information and prepares related notes and statistics for the CAFR. If the State issues the CAFR within 6 months of the fiscal year end the State is awarded a *Certificate of Achievement for Excellence in Financial Reporting* from the Government Finance Officers Association's.

Person-hour estimates to prepare the CAFR are based on the following:

- The agencies reported in the 2008 survey that preparing the CAFR require a total of 11,302 person-hours (see Appendix A, Figure E-1). Based on 11,302 person-hours for respondents, 181 person-hours (1.6 percent) are assumed for non-respondents, totaling 11,483 person-hours.
- In 2008, the Comptroller's office reported using 6 full time FTE's for 6 months and 2 part time FTE's for 4 months. Based on this level of utilization, 7, 627 person-hours will be required from the CG's office.
- In 2008, the Office of the State Auditor (OSA) reported using 7 full time FTE's for eight weeks. This level of utilization converts to 2,240 person hours. OSA also subcontracts out a review to an outside auditing firm, Clifton Gunderson, for approximately \$132,000 annually.

This analysis estimates that the cost to prepare the CAFR totals \$626,779 annually.

With SCEIS, the Comptroller will have direct access to current, accurate financial records for most agencies, commissions, and boards. Therefore, the number of closing packages should be

dramatically reduced. In this analysis, we conservatively estimated a 40% reduction in the number of closing packages and data collection requirements after full implementation.

In addition, we have estimated similar efficiencies in the CG's office and in OSA, including the outside auditing firm. These reductions should also be reflective in future contracts for external auditing. The rationale for these reductions is the fact that most information that affects the CAFR is collected automatically for agencies and is automatically consolidated within SCEIS in real-time.

A single statewide financial management system with integral audit and controls capabilities will result in fewer errors and will provide a clear audit trail for OSA year-end reviews. State agencies, boards, and commissions will spend time preparing closing packages and related CAFR-preparation activities.

Agencies that have implemented the SCEIS FI module report that they have realized savings ranging from 20 percent to 75 percent. Using a conservative percentage for time reduction of 40%, the annual CAFR-related savings of \$250,712 should be realizable.

Since SCEIS will not become the Book-of-Record until the spring of 2009, Savings will not be recognized until FY 2010 for 58% of the agencies and FY2011 for all agencies on SCEIS. A summary of CAFR benefits is shown below in Figure 8.

Figure 8: Annual CAFR Cost & Benefit Estimate

Organization	Current Survey Costs			% Change	SCEIS Estimated Costs			Savings 5 Yr Total
	Hours	Cost/Hr	Total		Hours	Cost/Hr	Total	
Agency Time	11,483	\$ 23.18	\$266,117	40%	6,890	\$23.18	\$159,706	\$ 106,447
Comptroller General	7,627	23.18	176,750	40%	4,576	23.18	106,076	70,700
State Auditor's Office	2,240	23.18	51,912	40%	1,344	23.18	31,154	20,795
Outside Auditors			132,000	40%			\$79,200	52,800
Total	21,350		\$626,779		12,810		\$376,136	\$ 250,712

In the original 2003 Business Case, the estimated savings was based on manually entered numbers totaling 24,312 hours. The Hours were multiplied by \$22.22, which was inconsistent with the rate per hour established earlier based on 230 days per year. The total cost for 2003 was \$540,293 vs. \$626,779 shown above. Savings was then based on a 60% savings of only agency time. No consideration was given to Comptroller General or State Auditor efficiencies. The net result was \$137,498 in savings and does not represent the full analysis of CAFR preparation.

4.1.2 Monthly GL & Grant/Fund Reconciliations

Each month, agency, board, and commission financial staff compare recent financial transactions recorded in their own general ledger records with corresponding entries in the Statewide Accounting and Reporting System (STARS) general ledger accounts. The purpose is to identify, analyze and resolve exceptions or discrepancies between the two sets of records throughout the year rather than waiting until the end of the FY. Reconciliation exceptions most commonly result from one of three situations:

- Timing differences in posting a disbursement (that is, between transactions posted in STARS and in agency records)
- Errors made when disbursements or receipts are posted to the wrong object or ledger code
- Missing Transactions

Large state agencies have developed automated programs to help identify exceptions between agency systems and STARS. Most agency financial staff must manually reconcile their respective records for federal grants/program funds, cash, and appropriations to the “official” Comptroller records.

Based on 2008 survey results and estimates, monthly reconciliations are estimated to cost the State over \$1 million annually as shown in Figure . The person-hours estimates are based on the following survey results and estimates:

- The agencies reported in the 2008 survey that reconciling grant/project account balances require 10,699 person-hours (Appendix A, Figure E-2). After adding 1.6% for non-reporting agencies, the total is 10870 hours.
- The agencies reported in the 2008 survey that reconciling cash balances requires 20,347 person-hours (Appendix A, Figure A-2). Based on 20,347 person-hours for respondents, 326 hours are estimated for non-respondents for a total 20,673 person-hours.
- The agencies reported in the 2008 survey that reconciling appropriation balances require 11,714 person-hours (Appendix A, Figure A-2). Based on 11,714 person-hours, 187 hours are estimated for non-respondents for a total of 11,901 hours.

Using SCEIS, state agencies and the Comptroller General will all be working on the same general ledger and the same data. Consequently, most timing differences and reconciliations are eliminated. Also, the system will be configured to alert or preclude users from posting a transaction to an incorrect or invalid cost center or ledger code. While coding errors and missing entries may still occur, these issues will typically be identified and resolved during the accounts payable and other posting processes.

Eliminating reconciliation requirements, the State can eliminate most agency resource costs currently dedicated to identifying, analyzing, and resolving exceptions in federal grants/program funds, cash, and appropriations. Agencies that have implemented the SCEIS FI module indicate that they have realized savings from 27 percent to 100 percent. Using a conservative 65 percent as an expected reduction (see Appendix A for calculation), the monthly reconciliation conservative savings total \$654,435 annually, as shown in Figure 9.

Figure 9: Annual - Monthly Reconciliations Cost and Benefit Estimates

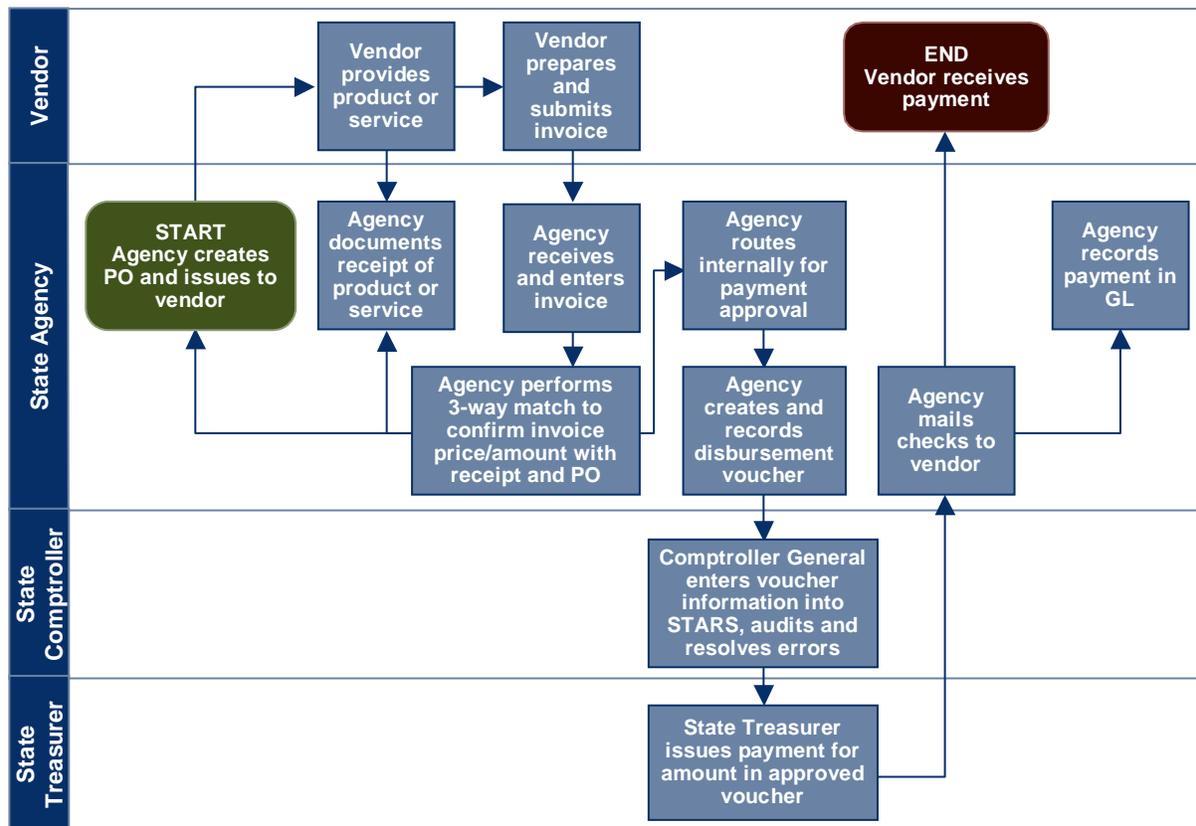
Reconciliation Area	Current Cost Estimates			%Change	SCEIS Cost Estimates			Savings
	Hours	Cost/Hr	Total		Hours	Cost/Hr	Total	5 Yr Total
Federal Grants/Programs	10870	\$23.18	\$ 251,914	65%	3805	\$23.18	\$ 88,170	\$163,744
Cash Balances	20673	23.18	479,101	65%	7236	23.18	167,685	311,416
Appropriations	11901	23.18	275,808	65%	4165	23.18	96,533	179,275
Total Cost	43444		\$ 1,006,823		15205		352,388	\$654,435

In the 2003 Business Case, the total number of hours for all reconciliation activities was 31,415 vs. 43,444 hours in 2008. Again, based on \$22.22 per hour, the total cost was \$698,085 vs. \$1,006,835. The conservative percentage used in 2003 was 70% savings vs. 65% in 2008. We feel this difference in totals is not reconcilable; therefore, the 2008 numbers should be considered an accurate measurement of costs and savings.

4.1.3 Accounts Payable

Although procedures vary by agency, the general accounts payable procedure follows the process flow illustrated in Figure 10.

Figure 10: Accounts Payable Process Workflow



In FY 2008, state agencies processed 1.49 million vendor invoices. State agencies indicated in the 2008 survey that they spend a weighted average of 1.08 hours processing a single vendor invoice (see Appendix A). By implication (Number of vendor invoices * 1.08 * hourly labor costs) suggests agency costs of \$37.3 million annually. Figure 5 summarizes the current cost estimates.

SCEIS can help the State reduce its current annual cost of processing vendor invoices by enabling the following process improvements:

1. Automate the three-way match of vendor invoices with purchase orders and receipts
2. Automate and expedite the process of gaining internal agency approval to pay invoices
3. Eliminate duplicate entry of invoice and disbursement voucher details (by the accounts payable staff in the Comptroller General's Office and in each agency)
4. Automate and expedite the process of authorizing payment approval by the Comptroller General and payment check issuance by the State Treasurer
5. Simplify the audit function currently provided by the Comptroller General of Agency entries

6. Eliminate paper forms and automate filing and recordkeeping

Organizations that have implemented the SAP FI module indicate that they have realized 50 to 87 percent reduction for accounts payable processing time, averaging a 67 percent reduction. Without SCEIS, some agencies report that they already process vendor invoices at rates that exceed SCEIS efficiencies. Therefore, the following schedule of target process time reductions were applied to the respective agencies (See Appendix E).

Current Agency Processing Time	Target Reduction
0 to 0.5 hours	0%
.51 to 1.5 (median)	33%
1.51 and greater	67%

Based on this schedule, a 53.3 % weighted average is the overall expected conservative reduction. This will result in State agencies saving almost \$20 million per year. The ability to re-engineer processing will also reduce the Comptroller General’s 10 full time FTE’s to 5 full time FTE’s resulting in additional savings for the Comptroller General of over \$240 K annually. For purposes of the Business Case, we used a conservative reduction of 1 FTE from the CG’s office, but believe this number is low.

Finally, as a direct result of better Accounts Payable management, it is expected that the State can take better advantage of vendor discounts, when offered. In the 2008 Business Case, we assumed that only 5% of vendor invoices will be eligible for discounts that could be taken as a direct result of SCEIS. Of that 5%, we assumed a 1% average discount. Based on a volume of \$3.7 billion in State invoices, this is equal to a \$1.8 million increase in vendor discounts that should be recognized as cash savings.

Figure 5 summarizes the SCEIS accounts payable benefit estimate at \$21.8 million annually.

Figure 5: Annual Agency Staff Accounts Payable Processing Cost Estimate

Unit	Current Cost Estimates			% Change	SCEIS Cost Estimates			Savings
	Hours	Cost/Hr	Total		Hours	Cost/Hr	Total	5 Yr Total
Agency	1,606,199	\$ 23.18	\$37,319,789	53.32%	751,703	\$ 23.18	\$17,420,878	\$19,897,475
Comptroller	20,800	23.18	482,044	1 FTE	18,720	23.18	433,930	48,204
Discounts							(1,840,684)	1,840,684
Total Cost	1,631,133		\$37,801,834		770,423		16,014,124	\$21,286,363

In the 2003 Business Case, there were 1,254,671 invoices recognized from the survey or a little over 232,000 fewer invoices. The Annual Total Cost was \$29.3 million vs. \$37.8 million. This is considered to be a reasonable variance over 6 years. In the 2003 Business Case, Discounts of 2% were used vs. 1% in 2008 and a 2 FTE reduction in the CG’s office vs. 1 FTE reduction in 2008. The net savings forecast in 2003 was \$18.3 million vs. \$21.8 million in 2008. Based on the increase in the number of invoices processed, and the increase in hourly rates, these variations appear reasonable.

4.1.4 Cash Management

In the 2003 Business Case Cash Management was seen as an area of savings for the State by assuming cash saved was added to the General Fund, Central Supplies & Equipment Fun, and the General Fund Reserve. We do not believe that this will, in fact, will happen and should not be an expected result of the SCEIS implementation. Therefore, we have not included this area of savings in the 2008 Business Case, but do show the calculations that were used.

4.2 Materials Management (Purchasing and Inventory Management)

This section describes the business processes and estimated costs before the SCEIS investment. It also describes the savings derived from implementing the SCEIS Materials Management (MM) module. The most obvious area of potential savings is in the procurement process; however, this is one of the most labor intensive processes in SCEIS and also one of the most difficult to learn and effectively utilize.

In the 2008 Business Case, we have treated procurement as other applications; however, in general practice, this will be the application that will be subject to the biggest learning curve. Training has often been an area subject to scrutiny in South Carolina. In keeping with this concept, do not expect procurement savings to be realized quite as quickly as Finance or even Human Resources primarily due to effective training or lack thereof.

4.2.1 Creating a Purchase Order

State agencies use purchase orders (PO's) to acquire products and services from a designated vendor. Agencies issue PO's for a single procurement or against statewide contracts issued by MMO for multiple procurements from the same vendor. Although procedures vary by agency, the current process for creating and issuing a PO includes the following common steps:

1. Create a requisition (a document identifying product or service specifications or requirements)
2. Check agency and departmental budgets to confirm that funding is available
3. Determine whether required products or services are included in existing term contracts or, alternatively, if PO value is sufficiently large, solicit and evaluate quotes from known vendors. MMO typically does solicitations for all new procurement where the total value of the procurement exceeds \$50,000. Agencies may procure up to \$50,000, but must execute a solicitation for all procurement between \$10,000 and \$49,999.
4. Create the PO (some agencies current use a combined requisition/PO form)
5. Circulate the completed requisition and/or PO for internal agency review and approval
6. Send the approved PO to the vendor, requesting delivery and invoicing of the required product or service
7. Enter or re-enter the requisition or PO data, typically from paper forms to automated purchasing systems that may be later used during receiving and invoicing. In some agencies, this step is not done because PO's remain on paper until invoiced.
8. Copy and file requisitions, quotes, PO's, and other supporting documents

According to the 2008 survey and estimates for non-respondents, state agencies generated approximately 267 thousand PO's and spend an average 5.64 hours per PO for a total 1,5 million hours to process PO's annually (Appendix A, Figure E-). Based on a bottoms-up survey analysis approach, the implied estimated annual cost to prepare PO's totals \$34.9 million annually in agency staff time.

In some agencies, number of PO's very large; however, the number of lines per PO is very small, usually one line. For these agencies, the number of PO's was divided by 4 to place this

procurement within the overall average of 4 lines per PO. The number of PO's above incorporates these adjustments.

The State can cut its current annual cost of preparing and issuing purchase orders significantly using SCEIS by enabling the following process improvements:

1. Using SAP's Supplier Relationship Management system (SRM), agencies can create an electronic requisition document, add vendors and items, and route as appropriate for approval.
2. Using SAP provided templates; users can set up commonly used requisitions to further speed the process.
3. During the requisition process, SCEIS performs an automated check to confirm purchasing authority and budget availability at the time the requisition is created. A similar check is performed when the requisition is converted to a PO. In the interim, budget funds are automatically earmarked to support the requisition transaction.
4. Route requisitions electronically for internal agency review and approval
5. Create electronic PO's from requisitions, and pre-populate with data such as vendor term contract prices and delivery details
6. Issue the PO to vendors via e-mail
7. Automatically electronically file requisition/PO information pending receipt & invoice processing thereby eliminating the need for additional copies during or after the process is complete.

Organizations that have implemented SAP's MM module report that they have realized 11 to 94 percent reduction for PO processing time with a 50 percent average reduction. Without SCEIS, some agencies report that they already process vendor invoices at rates that exceed SCEIS efficiencies (i.e. 76 minutes). Therefore, the following schedule of target process time reductions were applied to the respective agencies. (See Appendix A, Figure E- for calculation details)

Current Agency Processing Time	Target Reduction
0 to 76 minutes	0%
77 minutes to 5 hours (median)	25%
5 hours and greater	50%

Converted to conservative time equivalents for intermediary processes, average PO process time in SAP breaks down as indicated below:

- | | |
|------------------------------------------------|------------------------------------------------------|
| 1. Create requisition | 20 minutes |
| 2. Check budget for funding availability | 0 minutes (This is automatic in SAP) |
| 3. Circulate requisition for review & approval | 15 minutes (Does not include extended wait time) |
| 4. Get Vendor Quotes or check term contract | 50 minutes (Required solicitations will take longer) |
| 5. Create PO document from requisition | 5 minutes |
| 6. Issue PO & file supporting documents | 10 minutes (Normally, no paper required if emailed) |
| Total | 100 minutes |

Based on the results, the overall weighted average target reduction totaled 70 percent. Figure 12 summarizes SCEIS purchase order benefit estimates at \$24.6 million annually.

Figure 12: Annual Purchase Order Cost and Benefit Estimate

Business Unit	Current Cost Estimates			% Chg	SCEIS Cost Estimates			Savings 5 Yr Total
	Hours	Cost/Hr	Total		Hours	Cost/Hr	Total	
Agency	1,504,934	\$ 23.18	\$ 34,877,146	70.47%	451,480	\$ 23.18	\$10,463,144	\$ 24,414,003
Total Cost	1,504,934		\$ 34,877,146		451,480		\$10,297,744	\$ 24,579,430

In the 2003 Business Case, the following, Figure 12, shows comparative results obtained.

Figure 6: Annual Purchase Order Cost and Benefit Estimate from 2003 Business Case

Business Unit	2003 Cost Estimates			% Chg	SCEIS Cost Estimates			Savings 5 Yr Total
	Hours	Cost/Hr	Total		Hours	Cost/Hr	Total	
Agency	1,541,740	\$ 22.22	\$ 34,263,000	70.47%	435,804	\$ 22.22	\$ 9,683,570	\$ 24,893,373
Total Cost	1,504,934		\$ 34,263,000		435,804		\$ 9,683,570	\$ 24,893,373

It should be noted that the % Chg found in 2008, 70.47%, was identical to the change found in the 2003 analysis. The 2008 survey and analysis were made without the benefit of the 2003 data except for reporting agencies during the survey. In almost all cases, the 2008 data reported by the agencies was significantly different from data reported in 2003.

4.2.2 Inventory Management

State agencies acquire inventories to keep ready supplies of frequently-used items or critical products that require lengthy procurement lead times. State agencies reported in the 2008 survey that they hold a combined \$117.3 million in inventories (see Appendix E for survey results). By using SCEIS to more effectively purchase and manage inventory turns, it is estimated that state agencies can realize significant one-time and annual savings.

It should be noted that the original Blueprint showed Inventory Management as one of the deliverables. When a change was made from BearingPoint to Deloitte, Change Order 5 removed this deliverable from consideration in the interests of going live in November 2007. After the State took control of implementation efforts from Deloitte in January 2008, Inventory Management was placed back on the list of items to be accomplished. As of the 2008 Business Case Review & Update, no agencies have activated Inventory Management; but, as will be seen below, this effort can realize a significant level of savings for the State and for those agencies that do take advantage of the technology.

In addition, some inventory items cease to be needed or are not useful, or items are damaged or deteriorated to a degree that they no longer provide value. These items accumulate in agency stores until they are sold (typically at a discount) or are written off. Eighteen state agencies reporting in the 2008 survey carry average inventory totaling \$117.3 million. Obsolete or damaged inventory is estimated at \$2.3 million (Appendix E, Figure E-5). This analysis assumes that a one-time sale of obsolete or damaged inventory at, conservatively, 40% of inventory cost, can net an estimated \$918,797 in one-time cash as summarized in Figure 7.

Figure 7: Annual Obsolete Inventory Sales One-Time Savings

	Current Inventory Value	Obsolescence Factor	Obsolete Cost	Value Factor	Net Value
Obsolete Inventory	\$ 117,293,207	1.96%	\$ 2,296,992	40%	\$ 918,797

Based on the 2008 survey results, state agencies turn their inventory an average of 2.42 times yearly (Appendix E, Figure E-5). Based on stated agency turnover and inventory on hand minus obsolescence, the annual cumulative inventory totals more than \$278.3 million. Since one agency (J04) did not estimate their inventory or turnover rate, and it represents a large portion of the State's overall inventory, this analysis did not estimate a cumulative inventory total or project any savings for this agency. If Health & Environmental Control were added to the projection, the savings would likely be considerably higher.

For the remainder of state agencies that do maintain inventory, the overall cumulative inventory turnover rate is estimated at projected to be 2.42 turns per year. Organizations with strong inventory management practices commonly buy items on a just-in-time basis, maintain small inventory levels, and turn over these inventories as often as 10 to 12 times per year. Several state agencies already report that they turn inventory at rates 12 times per year.

This analysis assumes net inventory to be \$115.0 million (considering sale or disposal of obsolete goods). This analysis assumes that with SCEIS, agencies should be able turn inventory, conservatively, 4 times per year. Assuming this is a true analysis, the level of inventory should

be reduced to \$ 69.6 million. As inventory levels are reduced, the State should realize a one-time savings of \$ 45.4 million. This is considered to be a very conservative estimate, but without knowing the true nature of the inventory being held, lead times required, and a number of other constraints, it is difficult to suggest that the industry standard of 10 to 12 turns per year is achievable.

Based on the above analysis, the following calculations were made with respect to inventory management.

Figure 8: Annual Inventory Turnover Cost and Benefit Estimate

	Current Inventory Scenario			SCEIS Inventory Scenario		
	Inventory Value - Obsolescence	Current # of Turns	Total Annual Inventory	Inventory Turns	Resulting Avg Inventory	Net One-Time Savings
Inventory Valuation	\$ 114,996,215	2.42	\$ 278,290,840	4.00	\$ 69,620,625	\$ 45,375,590

Since lower inventories result in higher cash balances, the State’s inventory “carrying costs” are lower. Based on 6-Month U.S. Treasury yield in June 2008, the annual savings are, conservatively, estimated at \$95,289.

Figure 9: Annual Inventory Carrying Cost Benefit

	Current Inventory Value	SCEIS Value	Inventory Reduction	T-Bill Rate	Annual Cash Interest
Inventory Carrying Costs	\$ 114,996,215	\$ 69,620,625	\$ 45,375,590	0.21%	\$ 95,289

For the 2003 Business Case, agencies reported differently than in 2008, which may explain why the data is quite different. In 2003, agencies reported “consumable” inventory; therefore, inventory that was not considered “consumable”, such as machine parts, backup equipment, firearms, etc. were not reported. Consumable inventory are typically not on the balance sheet as assets since they are normally expensed at the time of purchase. For 2008, we wanted all inventory on hand, asset and expensed, but not used.

In addition, agencies reported 9 turnovers per year vs. 2.42 turnovers per year in 2008. Again, this may be due to the fact that not all inventories were reported; or, the inventories from agencies that have a great deal of inventory were not amongst those that reported. Nonetheless, the numbers are startlingly different making it difficult to draw a comparison as can be seen in the below table. We believe the 2008 values are much more in line with actual.

Figure 10: 2003 Business Case Comparisons

Reporting Year	Inventory Value	Current # of Turns	Obsolete Factor	Proj Inv Turns	New Avg Inventory	One-Time Savings	Annual Savings
2003 Inventory	\$117,293,207	2.42	1.96%	4.00	\$ 69,620,625	\$45,375,590	\$ 95,289
2008 Inventory	\$ 33,985,129	3.0 to 9.0	9% to 18%	10	\$ 27,833,821	\$ 3,092,647	\$ 37,112

Aside from the differential being huge, we feel the logic was flawed in 2003. We have corrected this in 2008. The savings, both in sale of obsolete goods as well as annual savings, is estimated

to be more in 2008. In fact, excess inventory was treated the same as obsolete in 2003. This, in our opinion, would not happen. Excess would be consumed over time. Obsolete would be sold.

4.2.3 Maintaining Vendor Information Files

The South Carolina Division of Procurement Services, Materials Management Office (MMO), maintains vendor files to manage contracts, while the Comptroller General maintains another set of vendor files for tax reporting purposes. Additionally, state agencies maintain their own respective vendor files—which either duplicate records maintained by the MMO and the Comptroller General, or contain information that is not easily shared.

Maintaining current and accurate vendor files is crucial to efficient and effective procurement and payment processes. Government organizations commonly maintain selected records on past and prospective vendors—information required by staff to solicit bids, prepare purchase orders, and pay invoices. These vendor information files typically include:

- Company name and business address
- Business type (Corp, LLP, or LLC)
- Product / services and descriptions
- References to existing state contracts
- MBE/DBE/WBE designation/status
- Name and title of contact person
- Vendor Quality or suspension
- Telephone, fax and e-mail address
- Pricing, ordering, delivery data
- Federal Tax ID Number or SSN

Consequently, many companies and government bodies centralize this function, creating a single set of “official” vendor files accessible to procurement and accounts payable staff.

With SCEIS, vendor files are consolidate into one database to support all agencies, MMO, and the CG’s Accounts Payable functions. Benefits of this approach include:

- More accurate and current vendor records and contract information
- More effective sharing of vendor records among all South Carolina state agencies
- Significant reduction in staff time in maintaining vendor information files

State agencies reported that they maintain 53 different vendor files and it takes them 8,800 person-hours to maintain these files. (Appendix A, Figure E-6). The total cost to maintain vendor files is estimate to total \$204,015.

Governmental organizations that have implemented SAP MM report they have realized 75 to 92 percent reduction time in managing vendor files. Using a, conservative, 65 percent average as an expected reduction, state agencies are expected to save \$132.6 thousand as summarized in Figure 18.

Figure 11: Annual Vendor Management Costs and SCEIS Benefit Estimate

Vendor Maintenance Comparison	Current Maintenance		SCEIS Vendor Maintenance		
	Surveyed Hours	Total Cost	Time Reduction	New Cost	Cost Reduction Value
2008 Vendor Maint	8,803	\$ 204,015	65%	\$ 71,406	\$ 132,609
2003 Vendor Maint	10,871	\$ 241,587	65%	\$ 84,556	\$ 157,031

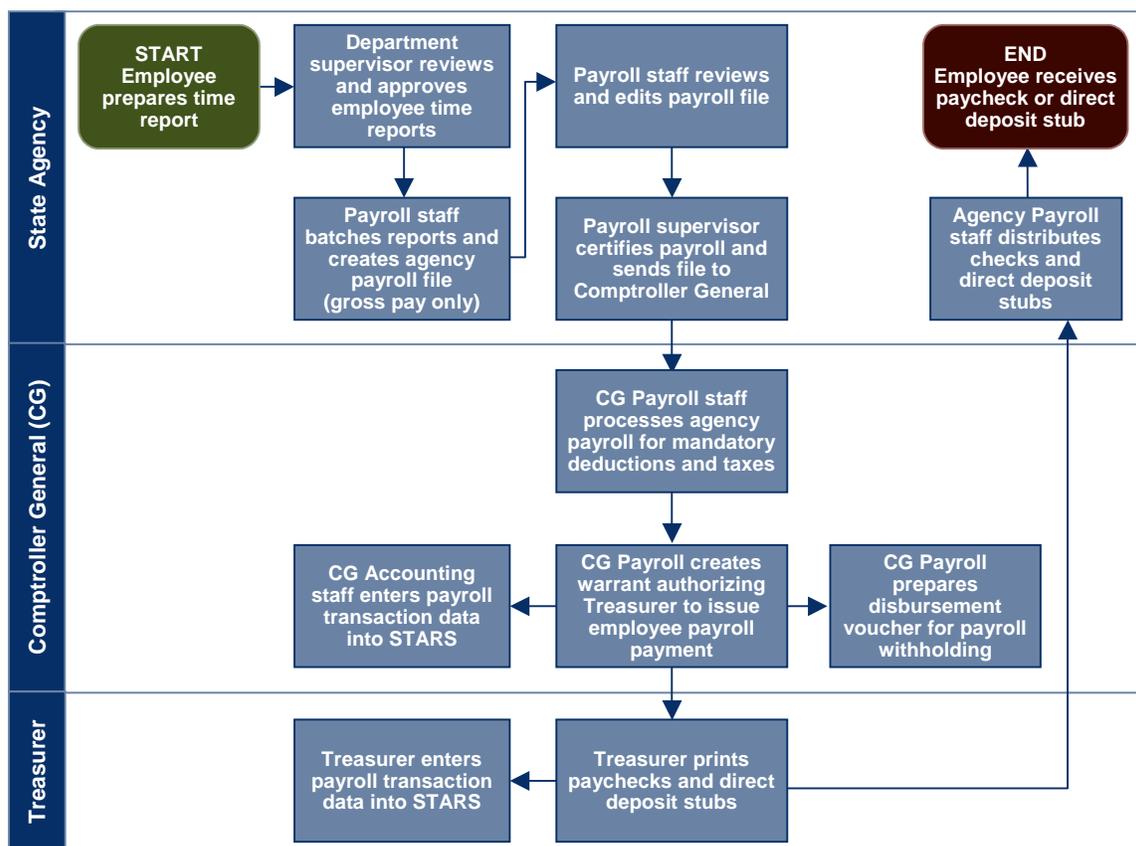
4.3 Human Resource and Payroll

This section describes the business processes and estimated costs before the SCEIS investment. It also describes the estimated savings expected from SCEIS Human Resources and Payroll (HR/PR) module.

4.3.1 Payroll Processing

State employees are paid twice each month. The procedures and systems used by each agency to conduct this recurring process vary somewhat, but includes the basic activities and workflow presented in Figure 12.

Figure 12: Workflow for Processing Employee Payroll



It is estimated that processing payroll costs \$6.42 million annually as summarized in Figure 13. The person-hours estimates are based on the following:

- Survey response indicating 252 thousand agency hours dedicated to Payroll Administration within Agencies. This translates to an annual cost of \$5.84 million.
- Comptroller estimates that 8 FTE’s focus on payroll processing.
- The State Treasurer’s Office estimates that 4 FTE’s are dedicated to payroll processing.
- The combined cost of central staff is \$578,453 annually.

2007 benchmark data for target payroll costs for high-performing organizations was obtained to update the 2003 study.⁶ The Hackett Group conducted a study surveying companies with annual revenue between \$700 Million and \$127 Billion to investigate payroll costs. Two relevant findings for this business case were:

- The businesses in the top-quartile spend an average of \$117 per employee [per year], while bottom quartile companies spend an average of \$407 per employee on payroll – more than a 300% differential.
- In first-quartile companies, an average of 715 employees is supported per payroll staff versus 208 (or fewer) employees per payroll staff in the bottom-quartile companies.

Given 24 pay periods, the top quartile benchmark is \$4.88 per employee per pay period. The equivalent South Carolina figure is \$128.19 per year or \$5.34 per pay period (assumes 50,000 employees receiving payroll).

Based on the above analysis, the State of South Carolina is doing reasonably well; however, since the State’s payroll is relatively simple with a large number of simple salary or hourly employees compared to a typical commercial payroll, there is still room for improvement. The State, at a minimum, should be able to compare favorably with top quartile payrolls as described above and should strive to reduce the number of FTE’s to one per every 750 employees. The number should include all CG and Treasurer’s Office employees that work with the Payroll.

With the planned rollout of Payroll to participating agencies, and implementation of Employee Self Service (ESS) for most employees, each agency should require no more than one payroll administrator per 750 employees to administer to Payroll and Human Resource activities. Most agencies will require no more than part of a single FTE to respond to payroll issues since most agencies have fewer than 750 employees.

If the above assumptions are true, approximately 54 FTE’s (including partial FTE’s) will be required by the agencies to administer to Payroll. This is a 53% reduction in agency staffing requirements for Payroll. Since Centralized Payroll can be operated in one location instead of both in the CG’s office and the Treasurer’s Office, Central requirements should be conservatively reduced by 50% after full rollout and implementation. This, of course, will not happen on day one, so sufficient staffing should be retained until any anomalies within SCEIS are worked out of the system.

Figure 13: Annual Payroll Processing Cost and Benefit Estimate

Payroll Process Function	Current Payroll Scenario			SCEIS Payroll Scenario			Annual Savings
	# of FTE's	Annual Hours	Annual Cost	# of FTE's	Annual Hours	Annual Cost	
Intra-Agency	121.2	252,096	\$ 5,842,375	56	116,021	\$ 3,036,873	\$ 2,805,502
Comptroller	8	16,640	385,635	4	8,320	192,818	192,818
Treasurer	4	8,320	192,818	2	4,160	96,409	96,409
Total	133.2	277,056	\$ 6,420,828	62	128,501	\$ 3,326,100	\$ 3,094,729

⁶ Data collected from article on www.efficientpayroll.com; additional corroborating detail can be located on the Hackett Group website: www.thehackettgroup.com

In comparison, the 2003 Business Case estimated that the State spent at a little less time than 2008, 189K vs. 252K hours processing payroll for \$4.6 million. The payroll size at that time was shown to be 50,404 paychecks. They study further estimated cost per employee per year was \$92.50, which was slightly lower than the 2008 estimate. The math logic, however, was flawed in that an estimated cost of per employee per pay cycle using SAP, \$.81, was subtracted from the true cost to arrive at a likely scenario of \$3.04 net savings. The \$.81 was not derived, but entered as a plug number.

We found that, even though the savings between the two studies were relatively close, the methodology used to arrive at the savings was more sound than that used in the 2003 study. The comparative table below in Figure should bear out this conclusion.

Figure 14: Annual Payroll Processing Cost and Benefit Estimate

Payroll Process Function	# of FTE's	Process Hours	Payroll Size	Total Cost	Current Annual Cost/empl	Proj PayCk Cost/cycle	Annual Savings
2003 Business Case	100.8	188,990	50,404	\$4,662,281	\$92.50	\$2.59	\$3,130,063
2008 Business Case	133.2	252,096	50,089	\$6,420,833	\$128.19	\$2.77	\$3,094,729

4.3.2 Travel Reimbursement

The State reimburses its employees for business travel expenses. To collect reimbursement, state employees spend an estimated 20 minutes to complete and submit a Travel Support Document (STARS Form No. 62), which itemizes meals, travel, lodging, and other expenses. Agency accounting staff use information entered on this form and another 15 minutes to complete a Disbursement Voucher for Reimbursement for Travel (STARS Form No. 80).

These vouchers are forwarded to the Comptroller General for review and approval. When the voucher is approved, the Comptroller General prepares a warrant and sends it to the Treasurer, requesting payment. The Treasurer prepares a check or processes a direct deposit transaction for the employee. These last two steps are estimated to take an additional 10 minutes to process the travel expense. In total, it is estimated that each travel voucher takes 45 minutes to process.

In FY 2008, state agencies issued 165,533 employee travel reimbursement vouchers. Each voucher takes, on the average, 45 minutes of employee time to process. It is estimated that 124,150 person-hours are required to process travel reimbursements. The total annual costs are estimated at \$2.88 million.

By using SCEIS ESS, the State can automate the process of creating, reviewing, and routing disbursement vouchers of this type and related support documents as well as minimize calculation and submission errors encountered in a form driven system. This analysis assumes that the traveler will still spend 15 minutes to complete an automated travel expense request, 10 minutes or less for review and approval, and no more than 5 minutes per voucher by the CG's Office to process and issue a warrant form an approved travel request. This totals conservatively on the high side, 30 minutes, or a 33% improvement.

This analysis assumes that the State can reduce its current cost of processing travel reimbursement payments by an average 33 percent on the overall process. The annual savings are, conservatively, estimated at \$958,105.

Figure 15: Annual Travel Reimbursement Cost and Benefit Estimate

Travel Requests	Current Travel Scenario				SCEIS Travel Scenario				Annual Savings
	Min	# of Trans	Annual Hours	Annual Cost	Min	# of Trans	Annual Hours	Annual Cost	
Entry Time	20	165,533	55,178	\$ 1,278,753	15	165,533	41,383	\$ 959,065	\$ 319,688
Rev/Apprv	15	165,533	41,383	959,065	10	165,533	27,589	639,377	319,688
CG Process	10	165,533	27,589	639,376	5	165,533	13,794	319,688	319688
Total	45	165,533	124,150	\$ 2,877,192	30	165,533	82,766	\$ 1,918,130	\$958,105

In comparison, the 2003 Business Case reflected 114,344 travel reimbursement vouchers at a cost of \$1.905.850. The 2003 study projected a 40% reduction in time with a conservative annual savings of \$762,340. In general, the difference is reflected in the lower number of vouchers and a less conservative projection of savings percentage vs. the 2008 study

4.3.3 Leave Administration

State employees accrue annual leave (i.e., vacation and personal time) and sick leave benefits throughout the year—typically at a rate of 1.25 days per month for all leave types. To use these leave hours, employees complete leave request forms, which they submit for supervisor approval. Approved leave forms are typically filed and maintained with an employee’s annual and sick leave records, and include the following required information:

1. Number of hours earned and used during the current calendar year
2. Number of hours carried forward from the previous calendar year (or maximum authorized accrual totals)
3. Number of hours in the employee’s work week and work day
4. Leave accrual rates

State Human Resources Regulation requires annual reviews or written reports of leave record totals and usages for each employee. The State has no standard leave form or common system for maintaining records of leave balances, accrual rates, and leave hours used by each employee. Some agencies have automated their leave record administration activities using custom desktop applications or central systems. However, for most agencies, it remains a paper-intensive process.

State agencies report in the 2008 survey that more than 54,429 person-hours were consumed performing leave administration by employees and administrators of employee leave balances and usage (Appendix A, Figure A.3-3). It is estimated that administering leave requests totals \$1,261,389 million as summarized in Figure 16.⁷

SCEIS will provide the means for state agencies to automate leave request and records administration activities by integrating these tasks with employee time entry and payroll functions. The 2003 Study estimated an average 75 percent reduction in the time that state agencies currently devote to leave records administration activities. The total estimated annual savings associated with this reduction in workload is \$2.6 million as presented in Figure 16.

Figure 16: Annual Leave Administration Cost and Benefit Estimate

Leave Administration	Current Leave Administration			SCEIS Leave Administration		5 Year Savings
	# of Hours	Annual Cost	% Reduction	# of Hours	Annual Cost	
Leave Form Prep	47,219	\$ 1,094,299	65%	16,527	\$ 383,008	\$ 711,301
Leave Admin	7,210	\$ 167,090	65%	2,524	\$ 58,483	108,611
Total	54,429	\$ 1,261,389	65%	19,050	\$ 441,491	\$ 819,903

⁷ The original 2003 Business Case Study assumed that employees spent 10 minutes preparing leave request forms and estimated that step to cost \$3.0 million. While this may be accurate, SCEIS would still require employees to complete an automated leave request through ESS.

4.3.4 Employee Records Management and Benefits Administration

State agencies must maintain complete and accurate records for each of their employees, including common personnel information outlined in Figure . It is crucial that this information be securely maintained. It is also vital that the employer and employee be able to periodically review this information and make updates as changes are warranted (such as name change, address or phone change, promotion, etc).

Figure 23: Typical Employee Personnel Records

General Employee Information	State Employment Work History	Other Miscellaneous Information
Employee name	Initial hire date	Ethnicity
Employee address	Agency/agencies where employee has worked	Education
Employee phone number	Titles and positions held (current and past)	Military experience and status
Employee social security number	Years of continuous service (including dates of any interim separations)	Certification and license information
Emergency contact information (name and phone number for designated contact persons)	Pay grade (current and past)	Disciplinary records (if any)
	Retirement eligibility date	Criminal history

Another major human resource management function is benefits administration. State agencies are obligated to provide cost and coverage information about mandatory and elective benefits to new and to current employees. This information includes details about the following common plans and programs:

- Health insurance
- Dental insurance
- Life insurance
- Long-term disability
- Tuition assistance
- Pension/retirement
- Deferred compensation
- Workers compensation
- Dependent care
- Medical spending

The State must also process employee enrollments in these plans and programs, maintain current and accurate records of employee benefit elections, and make periodic changes in an employee's benefit status or record. This includes such details as name or address changes, additional or dropped beneficiaries, and physicians.

Each agency’s human resources management staff or other administrative personnel perform these duties. The State has no central system for administering these functions or maintaining related employee records except interfaces to other systems for health and 401K benefits.

State agencies report that approximately 220 FTE’s are involved in maintaining employee personnel records and 227 FTE’s support benefits administration activities, for a total 447 FTE’s to provide both functions. The total annual cost for the State to maintain employee personnel records and provide benefits administration functions is more than \$21.7 million as calculated in Figure 17.

Using SCEIS, state agencies will be able to manage employee personnel records and benefits administration activities using a common system and database. The State will significantly reduce its current HR management workload and associated costs using the online employee self-service (ESS) functions. Using ESS, state government workers can view, create, and maintain their own personnel records and evaluate and make benefit selections themselves. Common tasks that employees can perform directly using ESS include:

- Viewing and making changes in an employee’s name, address, and phone number
- Viewing and making changes in an employee’s emergency contact information
- Direct deposit enrollment, changes, and updates
- Reviewing, evaluating, and selecting employee benefits online
- Designating physicians and other preferred providers
- Adding or deleting beneficiaries or dependents from existing insurance policies
- Reviewing copies of pay stubs and the past years’ W-2 forms
- Completing state and federal withholding forms (W-4s) online
- Downloading copies of common forms

In *HR Department Benchmarks and Analysis 1995*, the Society for Human Resource Management reported an overall average staffing ratio of 0.7 human resource professionals per 100 employees for government organizations. Based on this benchmark and the result from the survey that half of human resources staff spend time on benefits and employee administration duties, this analysis uses a conservative benchmark of 0.8 FTE’s per 100 employees. The corresponding process cost savings would be nearly \$16.7 million per year. Figure 17 presents a summary of these cost savings projections.

Figure 17: Annual Benefits Administration Cost and Benefit Estimate

Employee Records	Current Records Scenario			Reduction to .8 Staff per 100	SCEIS Employee Records Scenario			Annual Savings
	# of FTE's	# of Hours	Annual Cost		# of FTE's	# of Hours	Annual Cost	
Benefits Admin	219.8	457,184	\$10,595,898		158.1	328,848	\$ 7,621,118	\$ 2,975,150
Employee Records	230.4	479,232	\$11,107,695		165.7	344,656	\$ 7,987,472	\$ 3,120,612
Total	450.2	936,416	\$21,703,593	323.8	323.8	673,504	\$ 15,608,589	\$6,095,762

In contrast, the 2003 Business Case estimated \$6,770,002 in annual savings based on 21,353,224 for current costs. This estimate was based on .7 staff per 100 employees. The 2008 estimate is somewhat more conservative at .8 staff per 100 employees. The savings is still dramatic.

4.4 Workflow Automation (Document Management)

Nearly all State financial, purchasing and human resource functions require hard-copy documents to facilitate workflow and maintain for future reference. Most of these documents are subsequently copied and filed for future retrieval. While the below analysis accounts for the time required to copy, route, and file many of these documents, it does not account for the huge amount of supplies used in the process such as paper, file folders, filing cabinets, and ink. For archival purposes, most of these documents are stored for a designated number of years. This study also does not account for the huge amount of space required for storage.

In terms of workflow, SCEIS will automate most core business processes. Consequently, most of the paper business forms and documents commonly used today will be processed and filed electronically. Some documents, such as invoices from vendors, must be imaged into a digital format before they can be stored electronically. Since files will be electronic, it follows that retrieval is much simpler, exact, and can be accomplished using search criteria. This functionality is impossible in a paper driven environment. In many instances, the original paper document may be completely eliminated with the implementation of SCEIS.

In the 2003 Business Case, BearingPoint estimated the labor costs associated with copying and maintaining documents. We have concluded that they correctly assumed, based on 1995 criteria from the International Records Management Council, that there would be significant savings as a result of not having to copy, retrieve, or find missing documents. We disagree, however, based on our survey results, with task times suggested in the 2003 Business Case and offer the following adjustments relative to the State of South Carolina:

Figure 18: Task Time Differential between 2003 and 2008 Business Cases

Task	2003 BC Estimate	2008 BC Estimate	2003 BC Cost / Task	2008 BC Cost / Task
Copying, Distributing, & Filing of Documents	5 minutes	5 minutes	\$ 1.85	\$ 1.93
Retrieving Filed Documents	54 minutes	30 minutes	\$ 20.00	\$ 11.59
Retrieving Missing or Misfiled Documents	5.4 hours	3 hours	\$ 120.00	\$ 69.53
Retrieving Missing or Misfiled HR Documents	5.4 hours	45 minutes	\$ 120.00	\$ 17.38

Per the 2008 survey, Figure 26 summarizes the totals for selected key documents managed by the State during Fiscal Year 2008. During FY 2008, the survey indicates that 14.62 million documents were handled by State agencies. This compares with 12.3 million documents handled in FY 2002, or a 19.1% increase. Totals for the documents selected are contained in Figure 26, below. It should also be pointed out that this represents only a fraction of all documents that state agencies create, print, copy, distribute, and archive; however, we feel it is an adequate sampling with which to estimate cost benefits.

Figure 19: Current Annual Document Management Workload and Lost Files—Selected Documents

Document	Form #	2002 Survey	2008 Business Case Survey		
		Includes Copies	Originals	Copies	Total 2008
Finance & Accounting					
Journal Voucher	STARS Form 01	69,087	26,899	79,114	106,012
Appropriation/Cash Transfer	STARS Form 30	43,028	14,029	41,262	55,291
Interdepartmental Transfer	STARS Form 40	99,300	14,629	43,027	57,656
Disbursement Voucher	STARS Form 60	4,694,652	1,631,214	4,797,688	6,428,902
Transmittal Control Doc	STARS Form 100	251,541	49,000	141,847	190,075
Total Documents Processed		5,157,608	1,735,770	5,105,207	6,840,977
Procurement					
Requisitions		609,832	211,050	197,859	408,909
Purchase Orders		1,541,757	266,606	638,743	905,349
Total Documents Processed		2,151,589	477,656	836,602	1,314,258
Human Resources / Payroll					
Employee Time Sheets		2,553,173	986,894	2,527,077	3,513,971
Leave Requests		1,796,070	287,844	737,064	1,024,908
Employee Record Changes		463,135	406,146	1,039,993	1,446,139
Change in Employee Benefits		145,388	135,634	347,309	482,943
Total Documents Processed		4,957,766	1,816,518	4,651,443	6,467,961
Total Documents Processed		12,266,963	4,022,422	10,593,253	14,615,675

Based on the data contained in the table above, the following costs are incurred within the current environment without SCEIS and in an environment within SCEIS. In total, the State can conservatively save approximately \$11.8 million annually with more efficient management and retrieval of State documents. As stated above, the below savings are based on efficiency alone. Cost of Supplies, equipment, and archival space has been left out.

Figure 20: Annual Document Management Cost and Benefit Estimate

Cost Efficiency Task Areas	Current Legacy Costs	Conservative SCEIS Costs	Net Savings	Comments
Finance & Accounting				
Copying Documents	3,352,238	670,447	2,681,791	Not Required
Retrieving Documents	2,011,343	670,448	1,340,895	30 to 5 minutes
Finding Missing Documents	603,403	160,908	442,495	45 to 15 minutes
SubTotal	5,966,984	1,501,803	4,465,181	
Procurement				
Copying Documents	2,538,184	507,636	2,030,548	Not Required
Retrieving Documents	761,455	253,818	507,637	30 to 5 minutes
Finding Missing Documents	152,291	40,611	111,680	45 to 15 minutes
SubTotal	3,451,930	802,065	2,649,865	

Human Resources/Payroll				
Copying Documents	3,508,183	701,637	2,806,546	Not Required
Retrieving Documents	1,052,455	350,818	701,637	30 to 5 minutes
Finding Missing Documents	2,210,155	1,031,406	1,178,749	45 to 15 minutes
SubTotal	6,770,793	2,083,861	4,686,932	
Grand Total	16,189,707	4,387,729	11,801,978	

In addition to the above process savings, state agency staff will enjoy other intangible or non-quantifiable benefits, such as:

- Capability for multiple employees to view or use the same file simultaneously
- Ability to access files remotely (for example, by employees working out of the office)
- Improved document security
- Ability to fax documents or email directly from the agency's electronic file
- Significantly Reduced file space requirements
- Reduced document destruction requirements

5 SCEIS Cost Estimate

This section summarizes acquisition and operations and maintenance costs for SCEIS. The Budget & Control Board, Division of State Information Technology (DSIT) provided actual costs and cost estimates for Fiscal Year (FY) 2005 through FY 2011. As discussed in *Section 1.3, Methodology*, this was adopted without further evaluation. Therefore, the CBA has not determined whether these cost estimates are reasonable or whether the planned functionality and benefits can be achieved within the cost estimate/budget limits. For FY 11 through FY 17, the costs are estimated to be stable at \$12,345 million annually. The totals, as shown in Figure 28: below are \$63,149 million for implementation, as approved by the legislature, and \$139,114 million for operation through the 10 year investment horizon from FY 08 through FY 17. For clarity, FY 05 thru FY 08 are shown in the figure below. The totals for these years are figured into the investment horizon.

Figure 21: Total SCEIS Investment Costs (\$000)

	FY 05-06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15-17	10 Yr Total
Implementation	13,205	8,044	10,440	16,818	14,283						63,149
Operational	3,447	6,659	9,515	12,235	20,842	12,345	12,345	12,345	12,345	37,035	139,114
Total Cost	16,652	15,062	19,955	29,053	35,125	12,345	12,345	12,345	12,345	37,035	202,263

The following subsections summarize the acquisition and operations and maintenance (O&M) costs and describe major expenditures.

5.1 Acquisition (Implementation) Costs

Acquisition costs total \$63.1 million as summarized in Figure 28. All non-recurring acquisition activities are expected to conclude in FY 2010.

Figure 22: SCEIS Acquisition Costs (\$000)

	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	7 yr Total	10 Yr Total
Contractual Services	2,091	7,247	7,553	9,828	15,902	14,133	-	56,753	56,753
Supplies & Materials	-	-	-	372	-	-	-	372	372
Travel	10	49	42	91	150	50	-	392	392
Equipment (Cap Exp)	25	686	472	104	-	-	-	1,287	1,287
Intangible Assets	2,956	25	335	42	747	-	-	4,105	4,105
Equip (Non-Capital)	79	37	-	4	20	100	-	240	240
Total Cost	5,161	8,044	8,402	10,440	16,818	14,283	-	63,149	63,149

The SCEIS Contractual Services category includes consulting contracts for the following key vendors:

- **BearingPoint** – A \$2 million contract was issued to prepare the original Business Case and the Financials and the initial Business Blueprint.
- **SAP** - Subsequent to initial blueprinting, SAP America executed a detailed Gap Analysis of the Blueprint costing approximately \$5.6 million.

-
- **Deloitte Consulting** – Deloitte was contracted to take the original blueprint combined with the Gap Analysis and take the State through Realization of the FI and MM modules plus a number of ancillary activities which included training materials, imaging integration, Business Warehouse (BW), and the initial Help System. The costs attributable to Deloitte are approximately \$10 million.
 - **State Control** – As of January, 2008, the State assumed responsibility for future GoLive's and completion of unfinished Realization into all but 6 agencies that were done with Deloitte. Functions for which the State assumed control includes the following:
 - Making SAP the Book-of-Record, replacing STARS
 - All custom reporting using BW, now BI (Business Intelligence) and BO (Business Objects)
 - All future Functional Fit GoLives for FI & MM for Phase 1B, Phase II, and future GoLives planned for Nov 2009, and 1st quarter, 2010.
 - Gap Analysis for non-functional fit agencies
 - Implementation of SAP's Public Sector Budgeting statewide
 - Training, including generation of appropriate training materials, on line training, and classroom training
 - Conversion from RWD Info Pak to uPerform for online help systems
 - HelpDesk support
 - **BeeLine** – the State is augmented with contractors retained through Beeline to perform specific functions and provide specific SAP expertise not available with State resources. These resources are expected to cost approximately \$ 32.5 million during the implementation period.

Approximately \$8.3 million in SAP software purchases are included in the Intangible Assets and Contractual Services cost categories. Hardware purchases totaling approximately \$5.1 million for imaging equipment and servers are included in Contractual Services and Equipment.

5.2 Operations and Maintenance Costs

Total estimate for Operations and maintenance costs are \$139.1 million over a 10-year investment lifecycle (includes FY 05 thru FY 07 as start up years). Following “GoLive” of all primary applications, O&M costs are estimated at \$12.3 million annually. Total O&M costs are summarized in Figure 27. Annual costs after full implementation are reflected in the column representing FY 11.

Figure 23: SCEIS O&M Costs (\$000)

Major Cost Item	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13 - FY 17	10 Yr Total
Personnel Services	228	558	1,715	2,570	4,592	4,766	4,600	4,600	23,000	46,630
Employer Contributions	53	139	422	667	1,257	1,301	1,255	1,255	6,275	12,626
Contractual Services	393	1,190	2,557	4,088	3,344	7,770	6,210	6,210	31,050	62,811
Supplies & Materials	3	5	29	59	75	60	30	30	150	441
Fxd Chgs & Contributns	78	81	121	140	200	244	249	249	1,245	2,609
Equipment (Capital Exp)	-	63	-	14	227	-	-	-	-	304
Intangible Assets	-	-	-	-	-	1,225	-	-	-	1,225
Debt Service	-	655	1,664	1,961	1,961	3,267	-	-	-	9,508
Light/Power/Heat	-	-	44	8	0	0	4	4	17	55
Transportation	-	0	0	0	0	0	-	-	1	1
Equipment (Non-Capital)	-	-	107	9	250	-	-	-	-	366
Depreciation	-	-	-	-	-	1,220	-	-	-	1,220
Contingency	-	-	-	-	329	990	-	-	-	1,319
Total Cost	756	2,691	6,659	9,515	12,235	20,842	12,345	12,345	61,725	139,114

During the Implementation cycle, State salaries and fringe benefits (i.e., Personnel Services and Employer Contributions) account for \$4.6 million plus \$1.3 million respectively, or a total of \$5.9 million of the \$65 million.

The projected Personnel services of 4.6 million beginning in FY 11 are for SCEIS Team personnel. These are DSIT FTE’s and will be the core SCEIS support team. Loaned employees are not paid for out of personnel services. You should note the reduction in personnel services from FY10 to FY 11. It is anticipated that further reductions associated with the time limited and temp employees as they are phased out. Currently, approximately 10% - 15% of the SCEIS Team are associated with time limited and temp employees

Of the 6.2 million shown above in contractual services, \$4 million is internal to DSIT to support and operate the hardware/software/network infrastructure for SCEIS. \$300 K is for phone, desktop, and network support for the SCEIS Team. As noted in all documentation related to the project the intent is to fund this through the SCEIS central recurring funds and to not bill agencies. The general assembly agreed to this conceptually as they funded the implementation. The plan states that **ALL RECURRING COSTS** related to SCEIS will be centrally funded and controlled. This was anticipated in the \$12.3 million recurring funding requirement.

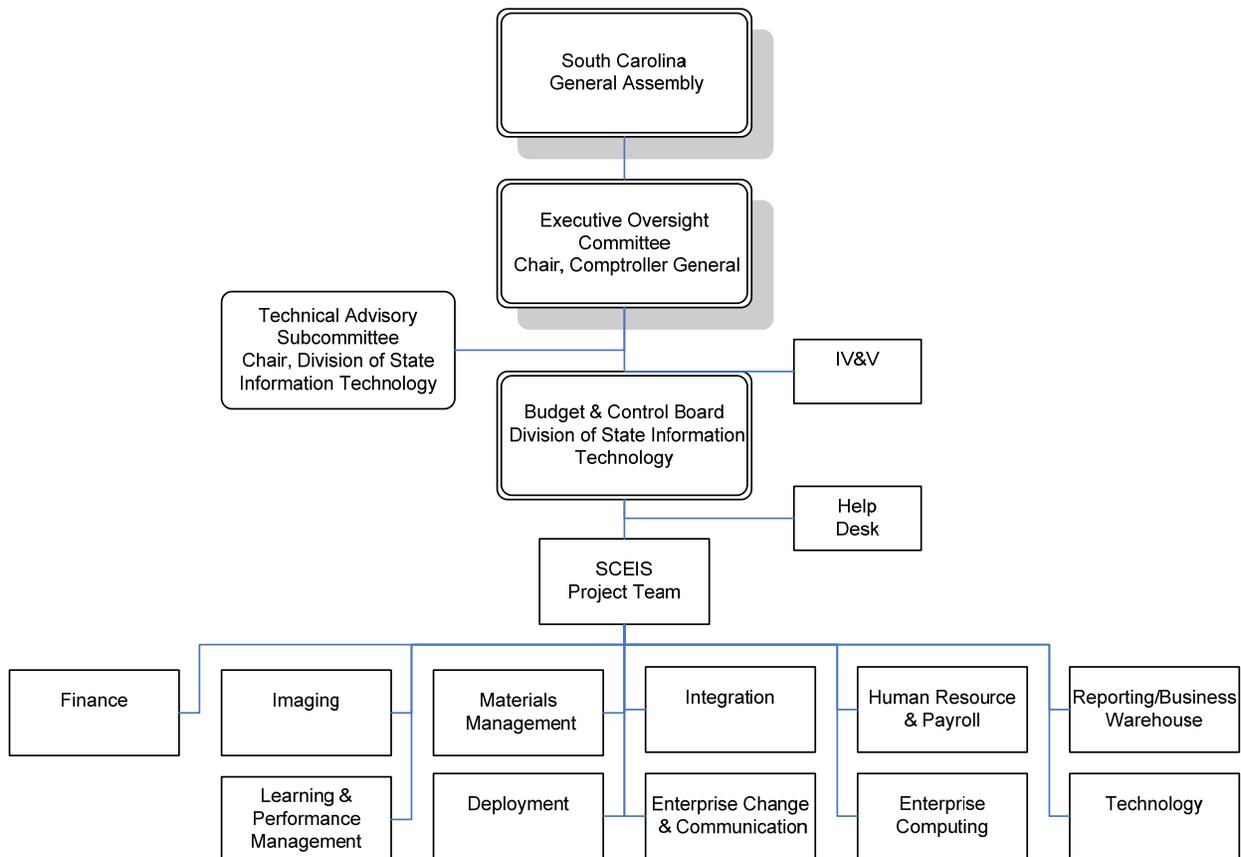
6 Statewide Implementation Plan

This section summarizes the organizational structure, rollout strategy, and planned implementation for the South Carolina Enterprise Information System (SCEIS) investment.

6.1 Organizational Structure

The General Assembly formally established the SCEIS Executive Oversight Committee, as appointed by the Comptroller General, to provide oversight for the implementation and continued operations of the system. The Oversight Committee is required to report annually to the Governor, the Chairman of the Senate Finance Committee, and the Chairman of the House Ways and Means Committee, the status of the system's implementation and on-going operations. Complicit with the SCEIS Project Charter, the SCEIS Project website, describes in detail the project team members. The overall SCEIS project reporting structure is presented in Figure 24.

Figure 24: SCEIS Organizational Structure



The SCEIS project team is comprised of over 100 SCEIS personnel (i.e. Division of State Information Technology or loaned employees) and 49 contractors.

6.2 Implementation Strategy

The SCEIS implementation plan is a 5-year rollout of four functional areas: Finance & Accounting, Procurement & Materials Management, Human Resources & Payroll, plus

conversion of the Book-of-Record from STARS and statewide Budgeting. Using the software vendor’s standardized implementation methodology (i.e., AcceleratedSAP™ or ASAP), the five ASAP phases mirror common system development lifecycle phases. The ASAP methodology standardizes the implementation process to achieve full mission-critical business functionality as soon as possible.

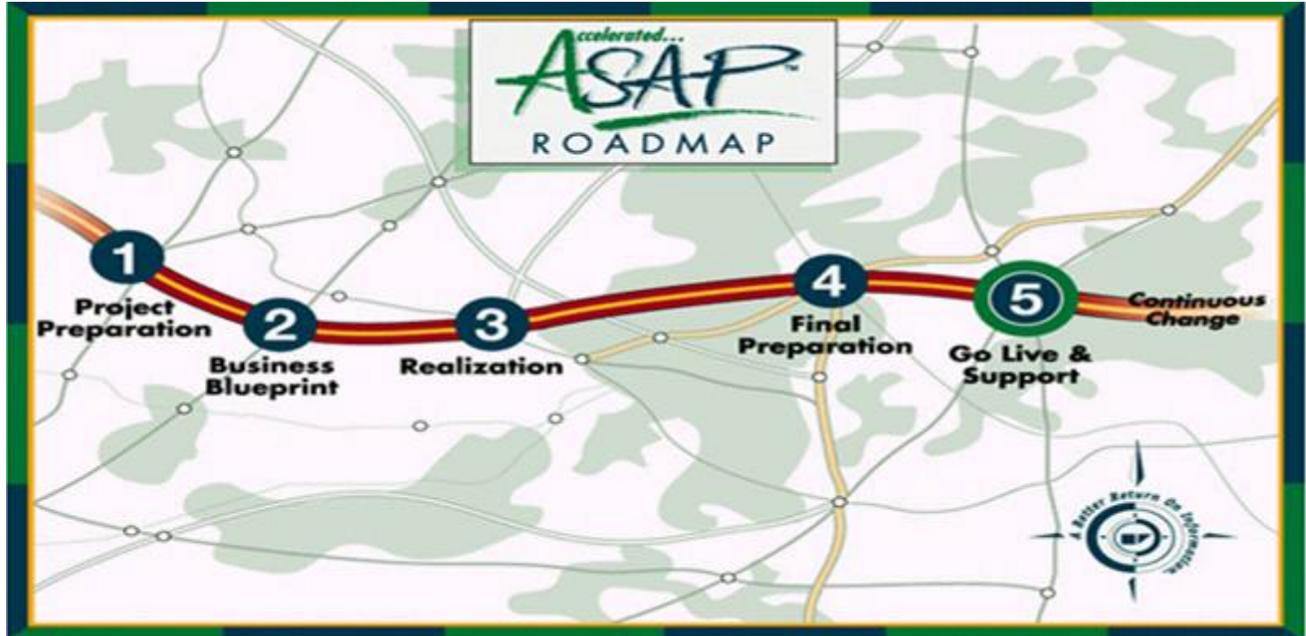


Figure 25 below provides a “thumbnail” estimate⁸ of the percentage of effort required for each phase:

Figure 25: ASAP Percentage of Effort

	Phase	Activity	% of Effort
1	Project Preparation	Scoping, staffing, team training, process fit	10%
2	Blueprinting	Enterprise modeling/business process design	25%
3	Realization	Configuration & customization / interfacing	35%
4	Final Preparation	Data migration, end user training	25%
5	Go Live & Support	Cut-over and support	5%
	Total		100%

⁸ <http://michaeldoane.com/Accelerated%20SAP%20Implementations.pdf>, Excerpted from The New SAP Blue Book, Copyright Michael Doane 2007

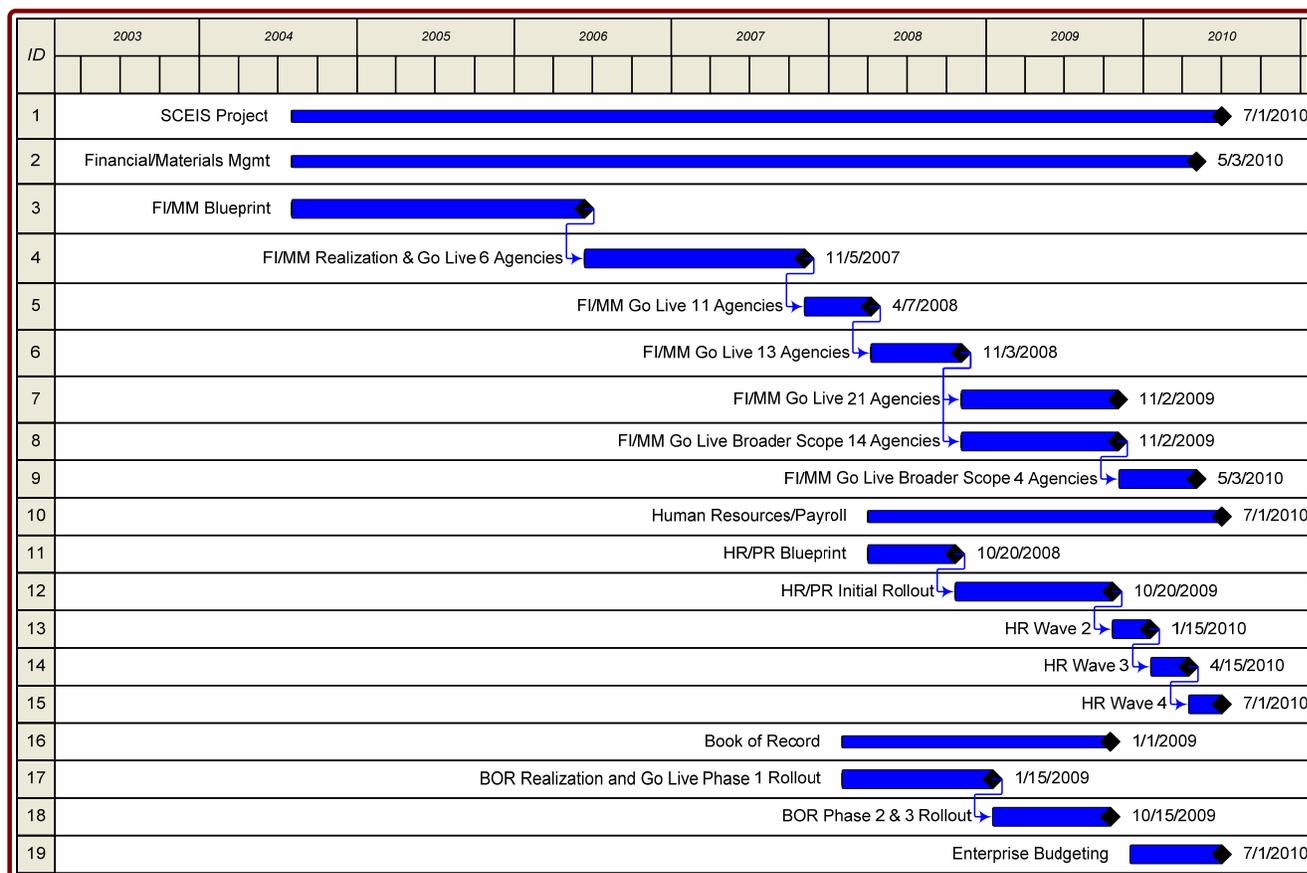
1. **Project Preparation.** During Project Preparation, the SCEIS project management office (PMO) defined the statement of work and developed detailed project plans. In addition, key team members were integrated into the process, primarily from existing State agencies. Finally, vendors were selected and contracts let to perform Blueprinting with the potential for Realization.
2. **Blueprinting.** During the Business Blueprint phase, stakeholders identified the functional area business goals and determined the business processes to support those goals. The Blueprint reflects the detailed functional requirements. For Finance & Materials Management functionality, the *Financials and Procurement Business Blueprint* was completed in June 2005 and a supplemental *Gap Analysis* was completed by SAP in May 2006. Although the State has been working on HR/PR business processes for some time, the actual HR/PR Blueprinting began in earnest in early 2008. The HR/PR Blueprint was completed in October, 2008. Concurrently, the Blueprint has been reviewed by IV&V while HR/PR realization progresses.
3. **Realization.** During the Realization phase, the project team designs, develops and configures the SAP modules. Extensive system integration testing is also conducted. This was accomplished by Deloitte through Phase 1A and carried forward by the State during subsequent phases.
4. **Final Preparation.** During the Final Preparation phase, the team completes final preparation activities such as final system testing, end-user training, data collection and cutover to the production environment.
5. **Go Live.** During the Go-Live and Support phase, the pre-production environment is transitioned into a successful, live production operation. Due to the size and complexity of the project, there were multiple GoLives which included groups of agencies and selected functional areas.

6.3 Implementation Schedule

The state agencies are divided into waves (groupings) for the Finance (FI)/Materials Management (MM) rollout and the Human Resource (HR)/Payroll (PR) rollout. Enterprise Budgeting rollout will involve all agencies simultaneously.

In summary, by legislative mandate, all functionality will be deployed by July 1, 2010. Thus far, 30 agencies, plus the central Materials Management Office have deployed with Finance (FI)/Materials Management (MM) functionality. All imaging equipment has been purchased and delivered to state agencies. In October and November 2009, the SCEIS project has planned for integration into 36 additional agencies, many of which require some modifications prior to Go Live. Finally, in early 2010, the last 4 agencies, which includes the largest of the state agencies to be implemented, are scheduled to go live. The SCEIS implementation will follow the high level schedule as depicted in Figure 26 below.

Figure 26: SCEIS Project Schedule



This schedule does not include other supporting SCEIS implementation activities such as:

- SCEIS Portal: March 2009
- Gap Analysis for 19 “Broader Scope” agencies that may require additional finance and procurement functionality: December 2008
- Year-end closing processes: July 2009 with Book-of-Record converted to SAP
- Online training development and delivery / performance management: Ongoing
- Reporting enhancements /Business Intelligence: Ongoing
- Organizational readiness for future agencies: Ongoing
- SAP enhancement packs and support packs: Ongoing
- Production support for live agencies: Ongoing

7. Return on Investment Results

This section summarizes the South Carolina Enterprise Information System (SCEIS) investment costs and benefits and describes the risk-adjusted financial metrics.

7.1 Cost Estimates

Within this document, the Implementation (Acquisition) costs and the Operations Maintenance costs have been defined in detail. Whereas the original Business Case had to estimate, or guess at these numbers, this study has the advantage of knowing real expenses from 2005 when the project was initiated through FY 2008. Beyond FY 2008, the Review & Update also provided an estimate, but it was based on past performance, not conjecture.

Both Business Cases identify 12 business areas that may be impacted financially by implementation of SCEIS. Benefits are normally defined in process times which can be converted to FTE's. The State, however, should not assume that FTE's are the only place to secure realization of Benefits, nor will these benefits be apparent immediately.

As a rule, benefits were only considered available if the implementing agency was live for more than 6 months. In reality, it may take a year before the benefits are fully realized, but they are there. Process benefits can also be realized through reduction of infrastructure such as office space, filing cabinets, storage for documents, equipment and supplies used for copying, etc. Most of these infrastructure benefits were also not considered in this analysis; but, as above, they are also there.

Figure 34 summarizes the costs associated with SCEIS over the investment life cycle, 10 years. Implementation costs have been and will occur from -3 years to 3 years after the beginning of the Investment horizon, or a total of 5 years beginning in FY 2005 as the project was ramping up. Implementation costs officially end as of July 2010, as mandated by the project charter. Total implementation costs, including actual and estimated total \$63.1 million as originally appropriated. More detail on costs is contained in section 5 of this document.

Operations & Maintenance (O&M) for the life cycle of the project is also shown in figure 34. These numbers total \$139.8 million and include \$12.3 million per year for continuing operations to run and support SCEIS for the last 5 years of the investment horizon. These costs are also broken down in section 5. The Business Case Team also found that many of these costs, approximately \$8.2 million per year is saved through shut down of legacy systems and support. The net difference between supporting the legacy systems and support for SCEIS is a little over \$4 million dollars per year after full implementation. This is further offset by new software cost avoidance estimated at a very conservative \$3 million per year. If even a small fraction of the benefits cited in this document are realized, the system will more than pay for itself.

Figure 27: 10-yr SCEIS Investment Cost Estimate (\$000)

	FY 05-06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15-17	10 Yr Total
Implementation	13,205	8,044	10,440	16,818	14,283						63,149
Operational	3,447	6,659	9,515	12,235	20,842	12,345	12,345	12,345	12,345	37,035	139,114
Total Cost	16,652	15,062	19,955	29,053	35,125	12,345	12,345	12,345	12,345	37,035	202,263

Another caveat to ROI analysis is the State must re-think many of the processes now being performed within the State and find ways to accomplish the same tasks more efficiently and effectively using SCEIS. For example, if a number of agencies perform similar procurement or human resources functions, it may be possible to consolidate those activities inter-agency or centralize selected functions at the State level. This is already being done for Payroll, Accounts Payable, and central procurement for large purchases. There may be other opportunities.

7.2 Benefit Estimates

Projected benefits have been detailed in earlier sections of this document by application. For ROI projections, the timeline considered was a 10 year investment horizon which includes three years prior to the first benefits being realized between FY 05 and FY 07. The 10 year investment horizon begins in the first year of benefit realization. Therefore, benefits will be recognized from FY 08 thru FY 17. In all tables, benefits represent conservative estimates. Figure 35: below shows benefits by application as calculated based on survey results and analysis performed within this Business Case Study. Greater detail and analysis is available in Appendix B, figure B.1.1.

Figure 28: SCEIS Benefit Estimates

One-Time	Year 1 FY 08	Year 2 FY 09	Year 3 FY 10	Year 4 FY 11	Year 5 FY 12	Year 6 FY 13	Year 7 FY 14	Year 8 FY 15	Year 9 FY 16	Year 10 FY 17	10 Year Total
Finance and General Accounting											
1. Preparing the State's Annual	\$ -	\$ -	\$ 145,532	\$ 250,712	\$ 250,712	\$ 250,712	\$ 250,712	\$ 250,712	\$ 250,712	\$ 250,712	\$ 1,900,514
2. Reconciliation of Agency	6,655	35,852	108,449	379,887	654,443	654,443	654,443	654,443	654,443	654,443	4,457,502
3. Accounts Payable	202,841	1,092,673	3,305,241	11,577,953	19,945,679	19,945,679	19,945,679	19,945,679	19,945,679	19,945,679	135,852,783
Annual Subtotal	\$ 209,497	\$ 1,128,525	\$ 3,559,222	\$ 12,208,552	\$ 20,850,834	\$ 20,850,834	\$ 20,850,834	\$ 20,850,834	\$ 20,850,834	\$ 20,850,834	\$ 142,210,799
Cumulative SubTotal	\$ -	\$ 1,338,021	\$ 4,897,243	\$ 17,105,795	\$ 37,956,629	\$ 58,807,463	\$ 79,658,297	\$ 100,509,131	\$ 121,359,965	\$ 142,210,799	
Procurement & Inventory Mngmt											
4. Processing Purchase Orders	\$ 249,965	\$ 1,346,521	\$ 4,073,110	\$ 14,267,725	\$ 24,579,430	\$ 24,579,430	\$ 24,579,430	\$ 24,579,430	\$ 24,579,430	\$ 24,579,430	\$ 167,413,899
7. Maintaining Vendor Files	1,349	7,265	21,975	76,976	132,609	132,609	132,609	132,609	132,609	132,609	903,221
Annual Subtotal	\$ 251,313	\$ 1,353,785	\$ 4,095,085	\$ 14,344,702	\$ 24,712,039	\$ 24,712,039	\$ 24,712,039	\$ 24,712,039	\$ 24,712,039	\$ 24,712,039	\$ 168,317,120
Cumulative SubTotal	\$ 251,313	\$ 1,605,099	\$ 5,700,184	\$ 20,044,886	\$ 44,756,925	\$ 69,468,964	\$ 94,181,003	\$ 118,893,042	\$ 143,605,081	\$ 168,317,120	
Human Resources and Payroll											
7. Processing Payroll	\$ -	\$ -	\$ -	\$ 1,796,410	\$ 3,094,729	\$ 3,094,729	\$ 3,094,729	\$ 3,094,729	\$ 3,094,729	\$ 3,094,729	\$ 20,364,782
8. Travel Reimbursement	-	-	-	556,155	958,105	958,105	958,105	958,105	958,105	958,105	6,304,786
9. Leave Administration	-	-	-	475,933	819,903	819,903	819,903	819,903	819,903	819,903	5,395,350
10. Maintaining Employee Records	-	-	-	3,538,433	6,095,762	6,095,762	6,095,762	6,095,762	6,095,762	6,095,762	40,113,003
Annual Subtotal	\$ -	\$ -	\$ -	\$ 6,366,931	\$ 10,968,498	\$ 10,968,498	\$ 10,968,498	\$ 10,968,498	\$ 10,968,498	\$ 10,968,498	\$ 72,177,921
Cumulative SubTotal	\$ -	\$ -	\$ -	\$ 6,366,931	\$ 17,335,429	\$ 28,303,927	\$ 39,272,426	\$ 50,240,924	\$ 61,209,423	\$ 72,177,921	
Document Management											
11. Finance & Accounting Forms	\$ 45,409	\$ 244,613	\$ 739,935	\$ 2,591,923	\$ 4,465,181	\$ 4,465,181	\$ 4,465,181	\$ 4,465,181	\$ 4,465,181	\$ 4,465,181	\$ 30,412,968
12. Procurement Forms	\$ 26,948	\$ 145,166	\$ 439,115	\$ 1,538,178	\$ 2,649,865	\$ 2,649,865	\$ 2,649,865	\$ 2,649,865	\$ 2,649,865	\$ 2,649,865	\$ 18,048,594
13. HR/Payroll Forms	\$ -	\$ -	\$ -	\$ 2,720,643	\$ 4,686,932	\$ 4,686,932	\$ 4,686,932	\$ 4,686,932	\$ 4,686,932	\$ 4,686,932	\$ 30,842,235
Annual Subtotal	\$ 72,358	\$ 389,779	\$ 1,179,049	\$ 6,850,744	\$ 11,801,978	\$ 11,801,978	\$ 11,801,978	\$ 11,801,978	\$ 11,801,978	\$ 11,801,978	\$ 79,303,797
Cumulative SubTotal	\$ 72,358	\$ 462,137	\$ 1,641,187	\$ 8,491,931	\$ 20,293,908	\$ 32,095,886	\$ 43,897,864	\$ 55,699,842	\$ 67,501,819	\$ 79,303,797	
SAVINGS	\$ 533,168	\$ 2,872,089	\$ 8,833,357	\$ 39,770,928	\$ 68,333,349	\$ 68,333,349	\$ 68,333,349	\$ 68,333,349	\$ 68,333,349	\$ 68,333,349	\$ 462,009,637
CUMULATIVE PROCESS SAVINGS	\$ 533,168	\$ 3,405,257	\$ 12,238,614	\$ 52,009,542	\$ 120,342,891	\$ 188,676,240	\$ 257,009,589	\$ 325,342,939	\$ 393,676,288	\$ 462,009,637	

7.3 Financial Results

Since benefits derived early are more desirable than benefits recognized later, a CBA best practice is to “discount” the net cost-benefit flow. A discounted result gives greater weight to earlier benefits. The discount rate reflects the cost of capital or the rate of return that a business or the government could earn if it chose another investment with equivalent risk. For governments, the cost of capital is typically calculated using a weighted average of its securities. This analysis uses a 4.6 percent discount rate⁹. Figure 36: provides the resulting cost-benefit flow in constant or nominal dollars.

Net Present Value (NPV) is a key financial metric; however, using any financial metric, financial results indicate that SCEIS meets acceptance criteria. Figure 36: provides the financial metrics for the SCEIS investment over a 10 year investment horizon beginning in FY 08 plus FY 05 thru FY 07 during startup. A 10 year + horizon was used to capture technical refresh cycles. Both durations demonstrate positive results at or above a 50% realization level.

Figure 36: SCEIS Financial Results

Metric	Definition	10-Year
Net Present Value (NPV)	The value of benefits minus present value of costs. An NPV greater than zero indicates a project is economically efficient. NPV shown is at 100% conservative realization. Decision Criteria: NPV greater than Zero	\$ 415.0 million
Internal Rate of Return (IRR)	Internal Rate of Return does not take into account the discount rate. IRR is shown as an annual value as opposed to a cumulative value as calculated in NPV. IRR is normally reflected in terms of a percentage. IRR shown is the percentage after the 10 th year in the project at 100 % conservative realization. Decision Criteria: IRR exceeds discount rate 4.6%)	32.29 %
Payback Period	The # of years after which discounted cumulative benefits exceed discounted cumulative costs. In this analysis, full payback is expected to occur in FY 12, or 7 years after project initiation.	7 Years

NPV and IRR calculations are contained in Appendix B: ROI Analysis. Multiple levels of benefit realization were applied from 25% to 100% realization. In addition, two scenarios were calculated, Conservative & Likely. Below are the graphical results of those analyses. The first four graphics represent NPV calculations based on the conservative approach to benefits. This is followed by the same graphics using the Likely approach to benefits. All calculations and numerical data used are contained in Appendix B.

⁹ The discount factor is calculated using the following formula: $Cost \times (1/(1+Discount\ Rate)^{Year})$

Figure 39: NPV Cost Benefit Analysis at 75% realization

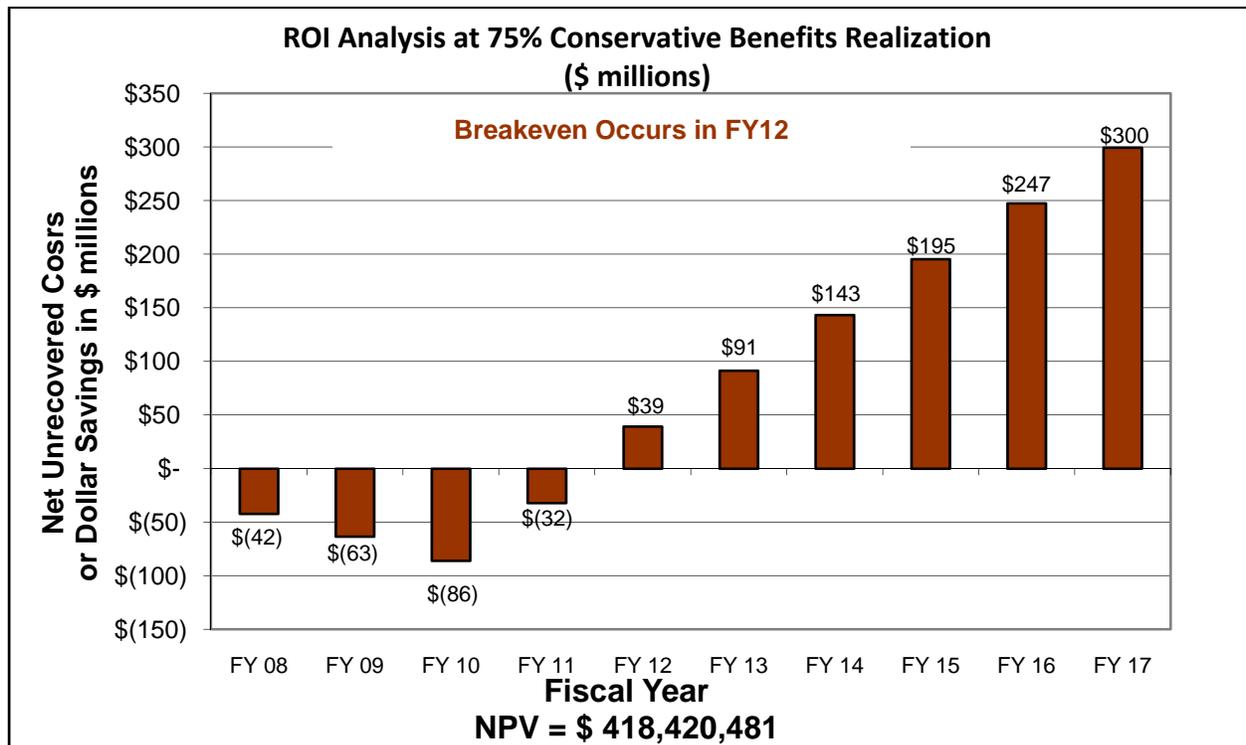


Figure 40: NPV Cost Benefit Analysis at 100% Realization

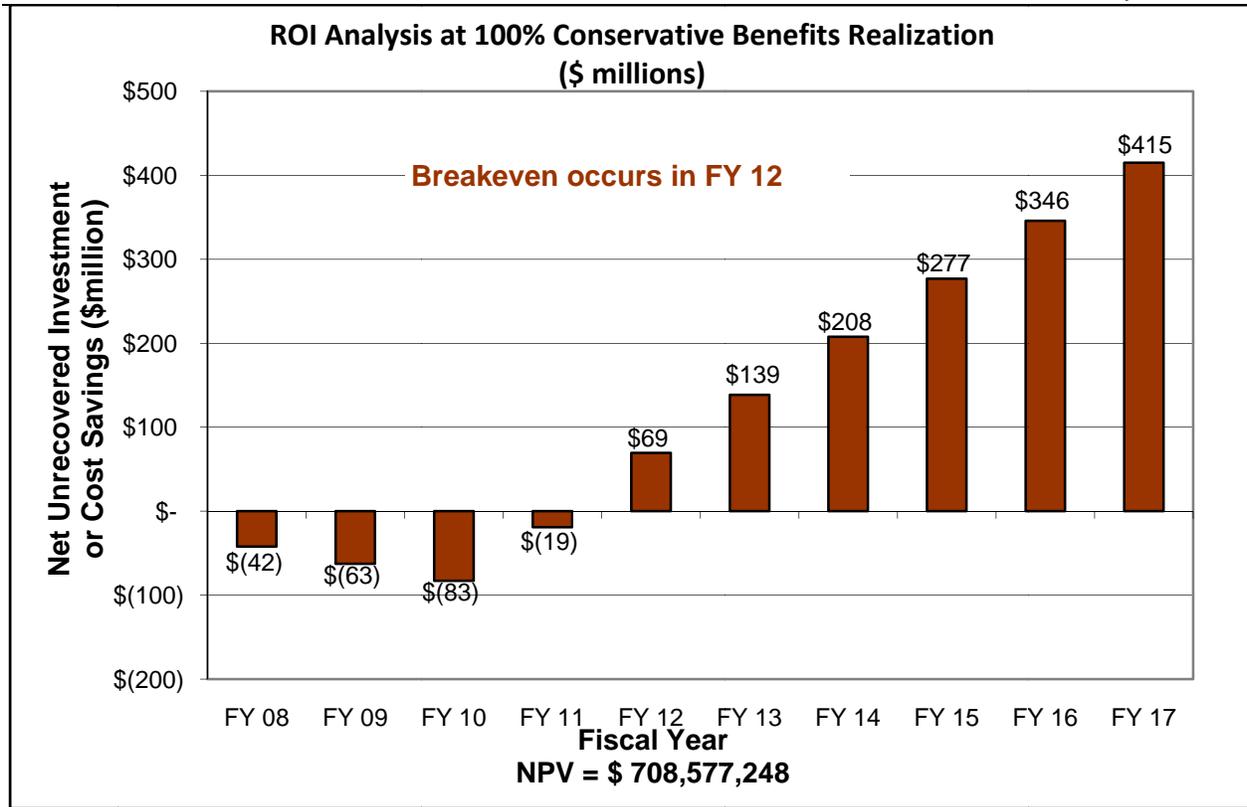


Figure 41: Internal Rate of Return, Scenario 1 at 25% Realization

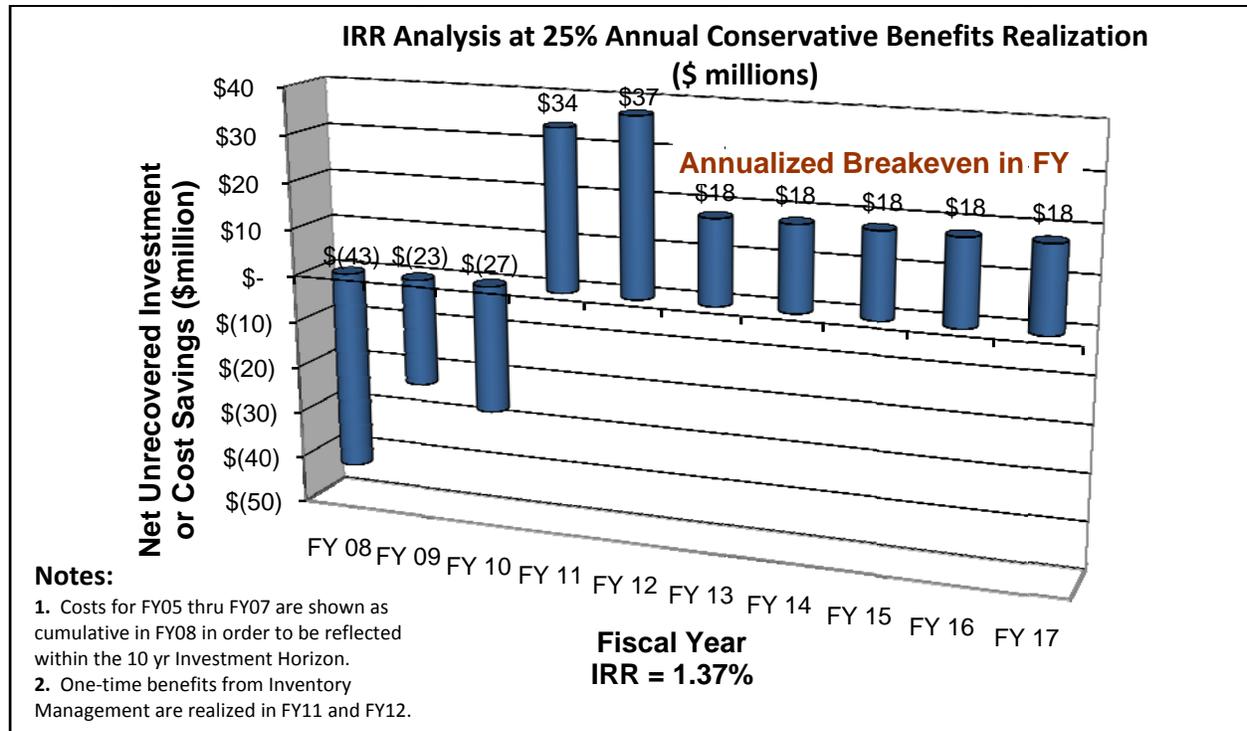


Figure 42: Internal Rate of Return, Scenario 2 at 50% Realization

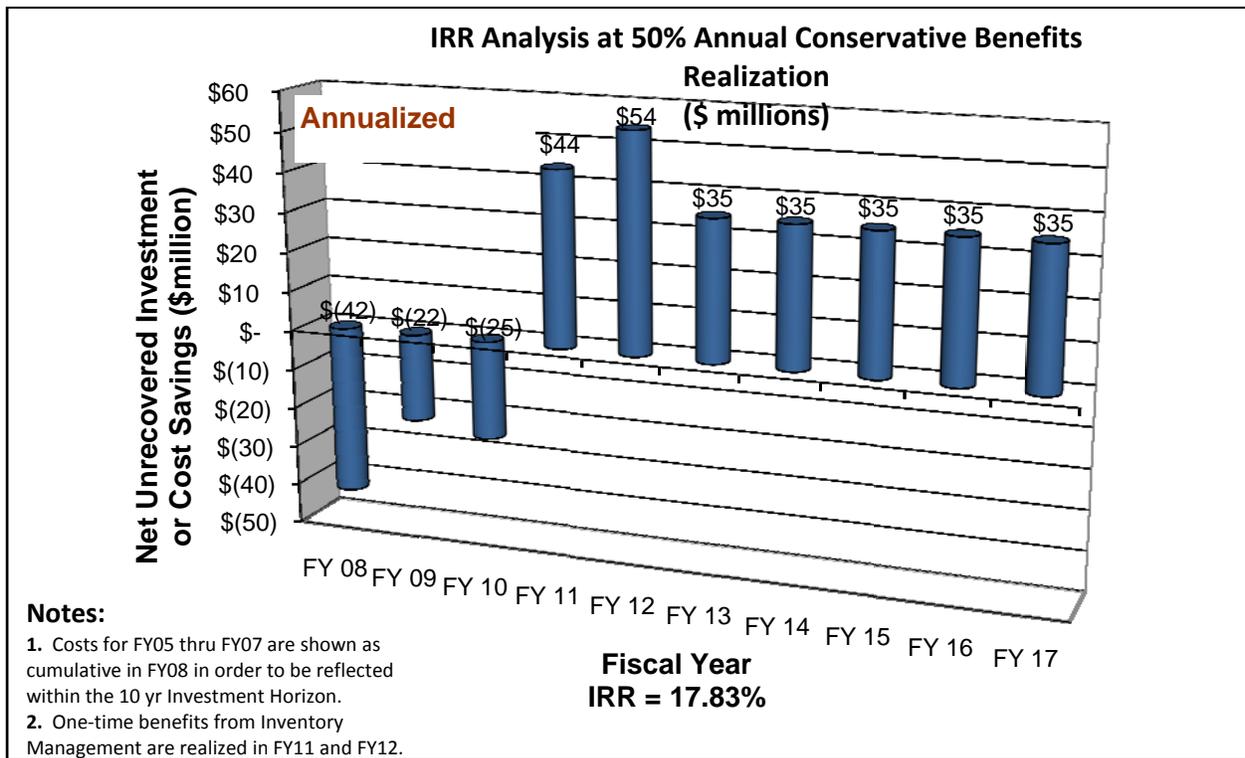


Figure 43: Internal Rate of Return, Scenario 3 at 75% Realization

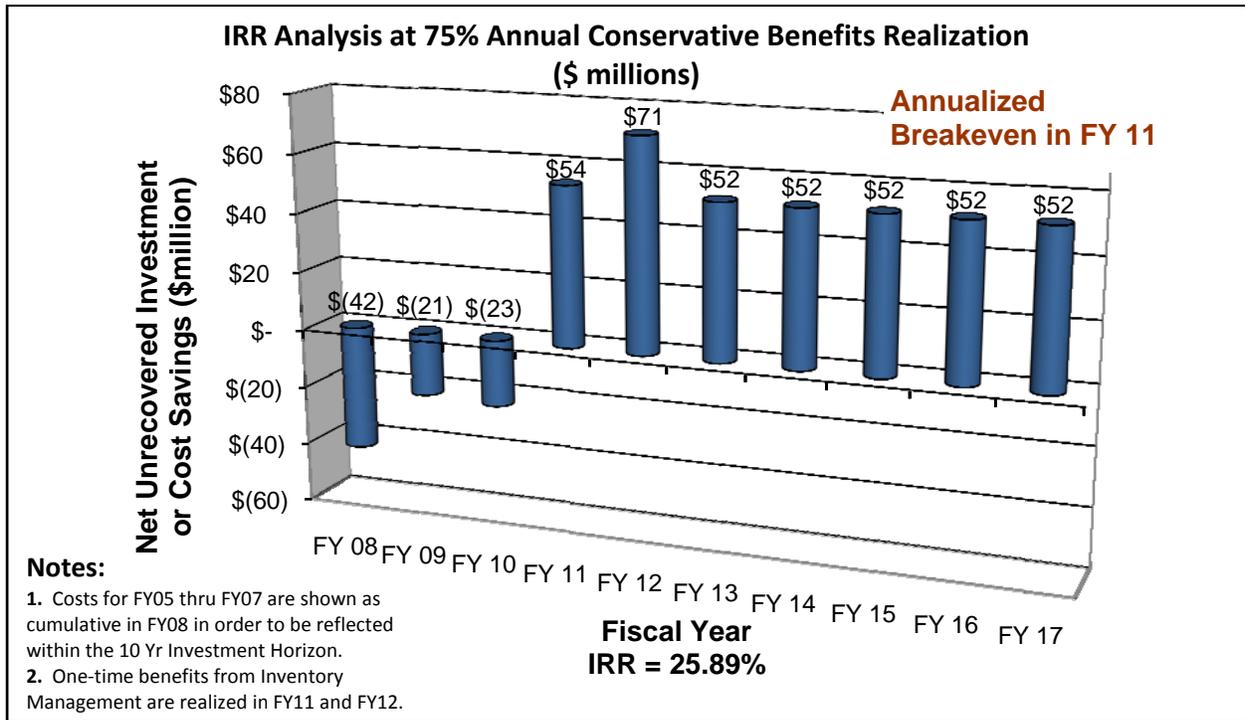
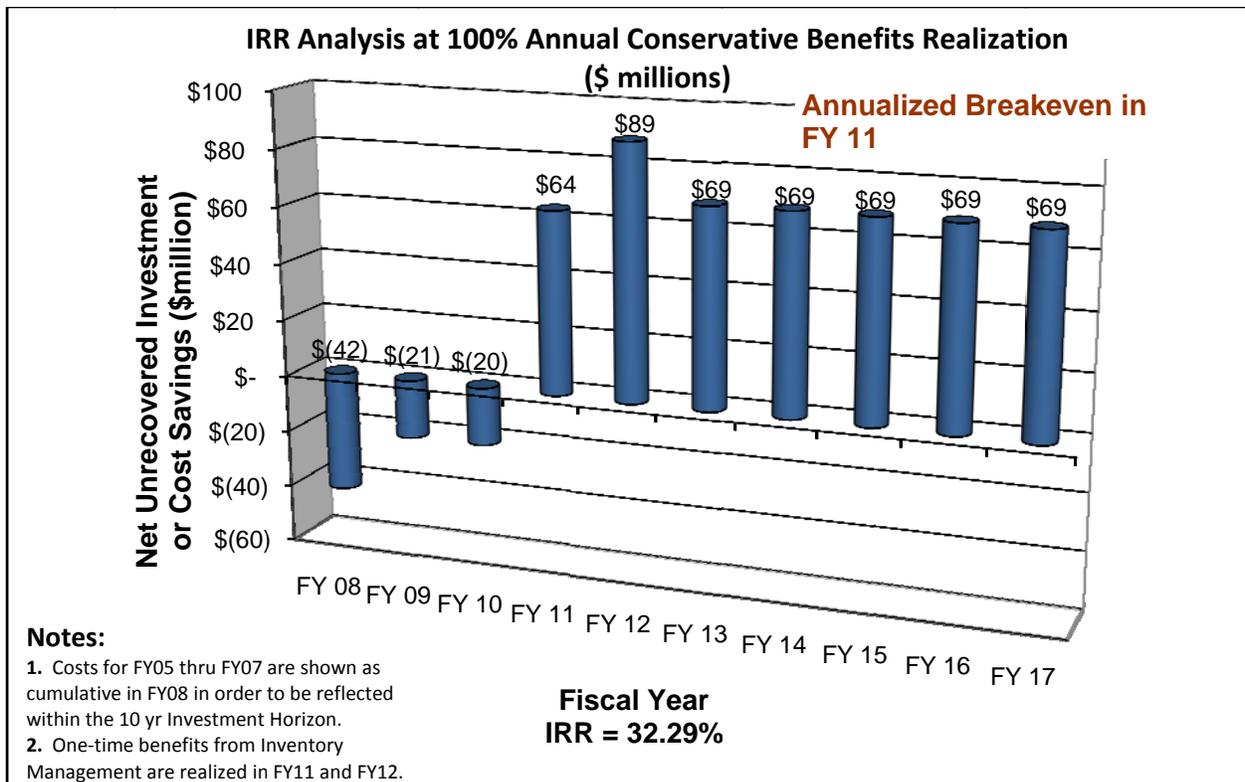


Figure 44: Internal Rate of Return, Scenario 4 at 100% Realization



7.4 ROI Summary

As shown above, the majority of benefits are attributed to efficiency/process savings. Whereas the original 2003 study calculated the State spent \$ 154 million conducting 12 key administrative processes, the current survey results (2008) indicate the State spends approximately \$ 113 million for the same 12 processes.

The lower costs may be due to increased efficiencies over the past 6 years, significantly reduced workload, the fact that 17 agencies have been on SAP for over 6 months, or inaccuracies in survey measurements. Or, it could mean that a number of agencies have taken a much more conservative posture in their estimates considering measurements to which they will be measured in the future. We submit that all of the above may be true plus in the area of Document Management, we believe that originals were added to the calculations whereas, the 2008 analysis specifically omitted originals from analysis.

SAIC also found that the 2003 study assumed more aggressive efficiency savings, whereas this analysis assumed more conservative and reasonable efficiency savings. As a result, efficiency savings are lower than the 2003 study by \$ 29 million annually. Projected process savings from the 2008 study would be equivalent to 1,418 FTE's.

The 2003 FTE costs appear excessive suggesting that state agencies over estimated time spent performing functions or double counted time in some responses. For example, responses indicate paying vendor invoices is equivalent to 1,600 FTE's and processing purchase orders is equivalent to 1,400 FTE's. The current survey shows 724 FTE's are required to process 266,000 PO's and 772 FTE's are required to process invoices within the agencies. This indicates the need to ensure that survey results, which this assessment is largely based, reflect actual costs.

Other factors that impact savings are as follows:

1. Salary for classified employees, as expected, has increased from \$31,191 to \$36,795. In 2003, Fringe benefits were reported to be 48.2%, which was unsubstantiated, in our opinion. The correct value for fringe benefits for the 2008 update is 31.01%, which does not include an overhead factor. Nonetheless, the average employee cost per hour, per this report, has risen from \$22.22 per hour to \$23.18 per hour.
2. The actual SCEIS implementation schedule was slower than originally anticipated in the 2003 Business Case; therefore, many areas of savings were delayed beyond the time frame established in 2003. In addition to other cited factors, this caused the benefits estimate and ROI analysis to be lower overall.
3. The SAIC CBA Team found that some survey data was questionable due to limited response by agencies to be implemented. Survey response for the 2008 Update included 57 or 70 agencies representing 98.4% of the FTE's within those agencies, however. The 2003 Business Case represented 47 of 74 agencies and 94% of the Appropriated Funds, which we felt was an inappropriate measurement.

Note: FTE's were considered to be a more effective number to use when calculating efficiency since many agencies are only partially funded by appropriations. Total funding could also be used, but this would include funds that are earmarked for specific projects or to be used for special or infrastructure related projects involving outside contractors, or

expensive materials such as for roads or bridges. FTE's are not a perfect benchmark either, but were seen as better than the alternatives.

8 Conclusion

The SCEIS investment has compelling strategic and technological benefits in addition to pure efficiency & financial benefits. The financial results, however, show a positive Net Present Value (NPV) and Internal Rate of Return (IRR). SCEIS will remain financially attractive assuming the cost estimates supplied by DSIT and efficiency tabulations are accurate. As stated previously, SCEIS operational costs were not evaluated as part of this study, but there was no reason to suggest that it was necessary to further scrutinize those actual & estimates. The highly favorable NPV is driven by a small number of assumptions on the benefit side, which might warrant further analysis.

Specific management considerations and next steps:

- Validate SCEIS implementation cost estimates to ensure ROI and NPV reflect actual performance. As stated earlier, no reason has been found to question these figures.
- Apply earned value techniques to track cost, schedule, and performance on the remaining SCEIS implementation activities.
- Many potential savings will only be realized if processes are re-engineered and /or staff reductions occur. This is a significant Change Management function and must be engineered carefully so as to not discredit the intentions while gaining the confidence of the users involved.
- Assess training needs. During interviews, additional training was described as being missing and critical. This will become more important if processes are re-engineered. Overall, we have found training to be under-funded and insufficient for a project of this size. The State has a significant training budget that is outside of SCEIS. Some of this funding should be re-channeled as appropriate to insure that State resources maintain a high level of knowledge and are capable of adapting to SCEIS geared to higher technologically generated results.
- Verify vendor invoice and purchase orders processing totals and representative costs to ensure survey-driven results match reality.
- Validate potential efficiency savings with high volume state agencies to ensure efficiency savings are possible, recognizing that some state agencies are already very efficient. In addition, some processes and agencies may not lend themselves to process improvements to the same degree as others. Benefits from this analysis cannot, therefore, be applied universally and evenly throughout the State.
- Assess the needs of a decentralized vs. centralized organization structure in selected areas. Many benchmarks assume centralization of selected functions or a central approach that may be used to replace activities now performed by the agencies. For example, many closing packages now prepared by agencies will no longer be necessary due to central availability of common information.

9 Reconciliation to 2003 Business Case

This business case is an update to the 2003 Business Case Study. This section explains the key differences including a discussion of the costs, benefits and return-on-investment analysis.

9.1 Investment Cost Comparison

The 2003 Business Case Study included estimated contracting costs for implementation, configuration, training, and change management. However, the Study may have minimized three important categories of typical government IT development costs:

- **Independent Contractor Costs** – Typically, a government IT investment needs third-party contractors to perform an unbiased cost-benefit analysis, planning, quality assurance, and perform independent verification and validation. These exclusions underestimated original Study costs.
- **Indirect State Costs** – Often personnel perform their normal duties and assume “collateral” responsibilities on an IT development project. Such is the case for the SCEIS project. For example, personnel will assist with requirements development (i.e., Blueprints), user testing, and training. While these activities may not require additional SCEIS investment or direct cash outlays, building a large IT system drains time and effort from other mission critical activities. Parallel to the benefit estimates “efficiency savings”, these indirect costs should also be captured.
- **Contingency** - A CBA best practice is to risk-adjust cost (and benefit) estimates. The original 2003 Study’s cost estimates included a \$2.5 million contingency (i.e., 1.5 percent of total costs). A rigorous risk-adjustment methodology would have provided a significantly higher risk adjustment. In SAIC’s experience with similar Federal Government IT projects, acquisition risk premiums are typically between 12 and 20 percent, and the O&M risk premium is typically between 3 and 9 percent. Insufficient risk reserves can force a project to drop functionality or, worse case, cease development.

To convert constant dollar cost estimates to a budget, the CBA constant dollar costs must be inflated to ensure that there are no budgetary shortfalls in the latter years of acquisition or O&M. In 2005, the General Assembly approved the 2003 Study implementation costs totaling \$62.8 million. Had the constant dollar costs been inflated using 2005 inflation estimates¹⁰, the SCEIS implementation budget should have been amended to total \$66.7 million.

By failing to inflate the 2003 Study cost estimates, the budget was inadvertently cut \$3.8 million in acquisition costs at the investment’s outset. Actual inflation has exceeded 2005 inflation estimates – representing an \$8.3 million difference between the original (i.e. nominal) and inflated (i.e., real) implementation cost estimates as reflected in Figure 29.

¹⁰ http://www.gpoaccess.gov/usbudget/fy06/sheets/12_1.xls, Budget of the United States Government, Economic Assumptions, February 7, 2005

Figure 29: Original and Implementation Cost Estimates with inflation (\$000)

	FY 05-06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15-17	10 Yr Total
Implementation	13,205	8,044	10,440	16,818	14,283						63,149
Operational	3,447	6,659	9,515	12,235	20,842	12,345	12,345	12,345	12,345	37,035	139,114
Total Cost	16,652	15,062	19,955	29,053	35,125	12,345	12,345	12,345	12,345	37,035	202,263
Inflation Factor	3.40%	2.70%	2.10%	2.30%	2.00%	2.00%	2.00%	2.00%	2.00%	6.00%	
Compounded	3.40%	6.10%	8.20%	10.50%	12.50%	14.50%	16.50%	18.50%	20.50%	26.50%	
Inflated Impl	13,653.97	8,534.68	11,296.08	18,583.89	16,068.38	-	-	-	-	-	68,137.00
Inflated Oper	3,564.20	7,065.20	10,295.23	13,519.68	23,447.25	14,135.03	14,381.93	14,628.83	14,875.73	46,849.28	162,762.33
Total Inflated	17,218.17	15,599.88	21,591.31	32,103.57	39,515.63	14,135.03	14,381.93	14,628.83	14,875.73	46,849.28	230,899.33

Despite the shortcomings in the original cost estimates, the SCEIS project intends to deliver full SCEIS functionality by the beginning of FY 2011. The CBA team was not tasked to re-estimate SCEIS project costs; therefore, an overall estimate of these omissions is not possible.

9.2 Benefits Estimate Comparison

An investment’s functionality or capabilities determine investment benefits. While the SCEIS project has fine-tuned its originally-planned functionality, the functionality remains essentially the same. Figure 305: provides a comparison of the original SCEIS functionality to the currently planned functionality.

Figure 30: Original and Current SCEIS Functionality Comparison

2003 Business Case Functionality	Current SCEIS Functionality
<p>Financials</p> <ul style="list-style-type: none"> ▪ Budget Execution ▪ Program and Project Management ▪ Financial Accounting ▪ Managerial Accounting ▪ Grants Management ▪ Cash Management and Treasury (AR) ▪ Asset Management ▪ Travel Management <p>Budget Preparation</p> <ul style="list-style-type: none"> ▪ Strategic Enterprise Management 	<p>Finance and Controlling (FI)</p> <ul style="list-style-type: none"> ▪ General Ledger ▪ Accounts Payable ▪ Asset Master ▪ Accounts Receivable ▪ Funds/Grants Management ▪ Cash Management ▪ Cost Management ▪ External & Internal Billing ▪ Loan Management ▪ Lease Management ▪ SAP as Book of Record ▪ Month End/ Year End Closing ▪ Vertex Tax Software ▪ Budgeting
<p>Procurement</p> <ul style="list-style-type: none"> ▪ Purchasing ▪ Inventory Management 	<p>Materials Management (MM)</p> <ul style="list-style-type: none"> ▪ Inventory Master ▪ Shopping Cart ▪ Requisitions ▪ Purchasing Materials and Services

2003 Business Case Functionality	Current SCEIS Functionality
	<ul style="list-style-type: none"> ▪ Receiving Goods ▪ Invoice Reconciliation ▪ Employee Mini Master ▪ Procurement Solicitations (\$10K to \$50K) ▪ Procurement Solicitations over \$50K ▪ P-Card Procurement ▪ Direct Pay Invoices ▪ Inter Departmental Transfers ▪ Solicitations (Above \$50k) ▪ On-Line Bidding ▪ Document Builder Interface with SRM ▪ Contract Awards Management
<p>Reporting</p> <ul style="list-style-type: none"> ▪ Business Warehouse 	<p>Reporting</p> <ul style="list-style-type: none"> ▪ Business Warehouse InfoCubes
<p>Human Resources</p> <ul style="list-style-type: none"> ▪ Organization and Position Management ▪ Personnel Administration ▪ Personnel Development and Training ▪ Recruitment and Applicant Tracking ▪ Compensation Management ▪ Benefits Administration ▪ Time Management ▪ Grievance Tracking ▪ Employee Self Service <p>Payroll</p>	<p>Human Resources</p> <ul style="list-style-type: none"> ▪ Organizational Management ▪ Personnel Administration ▪ Employee/Manager Self Service ▪ Payroll ▪ Time Management ▪ Benefits ▪ Travel Management

9.3 Comparison between 2003 and 2008 Business Cases

Since SCEIS planned functionality and scope has remained relatively unchanged, in general the benefit categories have also remained the same. The primary difference however, is the benefit estimates. Whereas the original 2003 study calculated the State spent \$154 million conducting 12 key administrative processes, current survey results indicates these costs have gone down to \$123 million in 2008.

In addition, the 2003 study assumed more aggressive efficiency savings (i.e., 63 percent overall), whereas the 2008 Review & Update assumed more conservative and reasonable efficiency savings by application that netted out to 56 percent overall. As a result, efficiency savings are lower than the 2003 study by \$28.6 million annually after implementation, and reflect a potential savings equivalent to 1,418 FTE's. Figure

Figure 46: 2003 vs. 2008 Business Case Comparison

Process	2008 Process Costs	2003 Process Costs	Process Differential	2008 Annual Process Savings	2003 Annual Process Savings	Annual Savings Differential	2008 % Savings	2003 % Savings
Finance and General Accounting								
1. Preparing the State's Annual CAFR	\$ 626,779	\$ 540,293	\$ 86,486	\$ 250,712	\$ 137,498	\$ 113,214	40%	25%
2. Reconciliation of Agency Balances	1,006,835	698,085	308,750	654,443	488,659	165,784	65%	70%
3. Accounts Payable	37,801,822	29,273,017	8,528,805	19,945,679	18,292,384	1,653,295	53%	62%
Annual Subtotal								
Cumulative SubTotal								
Procurement & Inventory Mngmt								
4. Processing Purchase Orders	34,877,174	34,263,000	614,174	24,579,430	24,893,746	(314,316)	70%	73%
7. Maintaining Vendor Files	204,015	241,587	(37,572)	132,609	157,031	(24,422)	65%	65%
Annual Subtotal								
Cumulative SubTotal								
Human Resources and Payroll								
7. Processing Payroll	6,420,833	4,662,281	1,758,552	3,094,729	3,130,063	(35,334)	48%	67%
8. Travel Reimbursement	2,877,192	1,905,850	971,342	958,105	762,340	195,765	33%	40%
9. Leave Administration	1,261,389	6,345,975	(5,084,586)	819,903	4,124,884	(3,304,981)	65%	65%
10. Maintaining Employee Records	21,703,593	21,353,224	350,369	6,095,762	6,770,002	(674,240)	28%	32%
Annual Subtotal								
Cumulative SubTotal								
Document Management								
11. Finance & Accounting Forms	5,966,984	22,961,496	(16,994,512)	4,465,181	16,073,047	(11,607,866)	75%	70%
12. Procurement Forms	3,451,931	9,578,794	(6,126,863)	2,649,865	6,705,156	(4,055,291)	77%	70%
13. HR/Payroll Forms	6,770,793	22,071,799	(15,301,006)	4,686,932	15,450,260	(10,763,328)	69%	70%
Annual Subtotal								
Cumulative SubTotal								
Totals	\$122,969,340	\$153,895,401	\$ (30,926,061)	\$ 68,333,350	\$ 96,985,070	\$ (28,651,720)	56%	63%

Productivity or efficiency improvements are the most common benefit cited in IT investment analyses. Improved efficiency and resulting free time to perform additional work may generate large or small time savings increments. Translating small time savings into larger blocks of time (i.e. person years) is limited by three factors:

- The size of the time savings by task
- The frequency the task is performed daily by an individual staff member; and
- The number of staff performing the task within the agency

If time savings occur in very small increments, significant productivity improvements will only accrue if task repetition is high. This condition may not apply in all situations and locations. For example, saving five minutes per PO is not significant if one staff member processes a PO only once a day. If 15 staff members process POs 100 times a day, then there is a greater opportunity to realize the productivity gains. In some processes, saving minutes on a transaction, even one performed infrequently, can be important and turned into other productive work. In other situations, such as administrative office work, only time savings in large increments results in measurable productivity improvements.

As such, on average across a large geographically diverse organization such as the State of South Carolina, using a schedule to apply reductions (i.e., savings) provides a more sensible approach to adjusting productivity improvements. Whereas the 2003 study applied a savings across all state agencies, this analysis applied more reasonable schedules to accounts payable and purchase order processing benefits.

9.4 Return-on-Investment Analysis

In assessing the 2003 study's financial metrics, it was determined that discount rates had not been uniformly applied as consistent with industry best practice. Applying discount rates assigns a time value of money to cost and benefit flows. The 2003 Study simply added the 10-year costs and benefits (5 years of acquisition plus 5 years of O&M) giving equal weight to costs and benefit "cash" flows across time. Since benefits derived early are more important than benefits recognized later, the 2008 results were revised using the Study's conservative estimates and a 4.6 percent discount rate.

While financial metrics do not affect an investment's outcome, financial metrics can influence investment decisions. Calculating the financial metrics correctly is critical when comparing investments and/or deciding which investments should be approved.

9.5 Investment Horizon Results Comparison

The following figure summarizes key financial results between the two analyses. The 2003 study cites two sets of metrics – those based on 100% of the benefits accruing and those based on 100% of cash and current system costs savings plus 10% of process savings. Under both circumstances, the 2003 Study determined that the investment would have a positive return. The 2008 Review & Update analysis also indicates that the investment will have a positive return before risk adjustments as indicated in Figure 31. It is, however, recommended that the State also conduct a risk and sensitivity analysis.

Figure 31: Comparative Financial Metrics

Scenarios		2003		2008	
Metric	Definition	100% Benefits	“Conservative” Cash + 25% Process Benefits	100% Benefits	“Conservative” Cash + 25% Process Benefits
10 Year Costs	Implementation, Maintenance, and Legacy Systems Transition Support	\$163.9 million	\$163.9 million	\$202.3 million	\$202.3 million
10 Year Benefits	Cash Savings, Cost Avoidance, Efficiency Savings: Benefits at 100%	\$946.0 million	\$307.2 million	\$521.5 million	\$175.0 million
Net Present Value (NPV)	An NPV greater than zero indicates a project is economically efficient. Decision Criterion: NPV greater than Zero	Not Calculated	Not Calculated	\$708.6 million	\$161.9 million
Internal Rate of Return (IRR)	The discount rate at which the stream of future net benefits (benefits less costs) equals zero (e.g., NPV equals zero) Decision Criterion: IRR exceeds discount rate (4.6%)	186.8 %	46.0 %	32.29 %	1.37 %
Payback Period	The number of years after which discounted cumulative benefits exceed discounted cumulative costs.	2 Years	6 Years	6 Years	7 Years

Appendix A: Benefits Calculations

Appendix A will Hyperlink to various benefits calculations working documents in the form of spreadsheets. To insure proper linking via computer, it is important that the Spreadsheets referenced are in the same subdirectory as the primary document, or links are re-established to reference the appropriate subdirectory. For printing of the business case, copies of representative spreadsheets are contained herein; however, it will not be possible to view the formulas that went into the presented results.

[A.1 Finance Savings v2008 Business Case Review & Update](#)

Within this Workbook, you will find 6 tabs relating to Financial (worksheets) that are labeled as follows:

- CAFR Preparation of the Comprehensive Annual Financial Report
- Reconciliation Accounting Reconciliation by Agencies
- Accts Payable A/P Processing by Agencies & the CG's Office
- Cash Management This Area of Benefits was Considered invalid for Benefits
- Doc Management Document Management for Financial Forms
- Benefit Pct Calcs Benefits Calculations based on current Roll-Out Plan
- Cost Savings Sumry Benefits Summary for Finance & Accounting Applications

[A.2 Purchasing Savings v2008 Business Case Review & Update](#)

The Purchasing Savings workbook contains Benefit Analysis for Procurement Functions within the State. This workbook contains the following benefits tabs:

- Processing PO's Agency time required to process Requisitions & Purchase Orders
- Inventory Mngt Benefits from one-time and recurring inventory Management
- Vendor Mngt State Benefits from a centralized Vendor Management System
- Doc Management Document Management related to Procurement Functions
- Benefit Pct Calcs Benefits Calculations based on current Roll-Out Plan
- Cost Savings Sumry Benefits Summary for State Procurement Functions

[A.3 Human Resources – Payroll Savings v2008 Business Case Review & Update](#)

Human Resources & Payroll Savings are contained in the above hyperlink as individual tabs as defined below:

- Payroll Payroll Functions include both Agency & CG functionality
- Travel Benefits from automation of Travel Management Functions
- Leave Admin Leave Administration Savings
- Employee Records Savings from automation of Employee Records thru ESS
- Doc Management Benefits derived from automation of HR & Payroll Documents
- Benefit Pct Calcs Benefits Calculations based on current Roll-Out Plan
- Cost Savings Sumry Benefits Summary for State Procurement Functions

The following are extracts of the worksheets described above in the same general order as presented above and in the representative workbooks.

State of South Carolina
Enterprise Information System (SCEIS)
December 22, 2008

Appendix A.1-1
FINANCE AND ACCOUNTING SAVINGS
Preparing the State CAFR

Business Case Study
2008 Review & Update

FUNCTIONAL AREA

Finance and Accounting

BUSINESS PROCESS

Preparing the State's Comprehensive Annual Financial Report (CAFR)

Overview of Current
Process:

This process includes three major tasks:

1. Each agency collects information needed to prepare closing packages or financial packages or financial statements requested by the Comptroller General.
2. The Comptroller General reviews and consolidates information from agency financial statements and closing packages, then prepares the State's CAFR.
3. The Office of the State Auditor (and its contractor) reviews & audits the CAFR prepared by the CG and the closing packages from the agencies prior to approving release of the CAFR.

Legend:
Extraction
Calculation
Result
Direct Entry
Estimate

CALCULATION OF CURRENT PROCESS COSTS					
Cost Type	Methodology and Assumptions	Unit Costs	Annual Resource Requirements (hours)	Annual Cost Subtotals	ANNUAL COST TOTALS
Average Employee Cost per Hour	Average Employee Cost Per Hour				
	A. Average Annual Salary	\$36,795			
	B. Fringe Benefits	31.01%			
	C. Hours worked per year	2080			
	Average Employee Cost Per Hour	\$ 23.18			
Current Agency Resource Hours	A. Total agency resources in hours reported in survey		11,302		
	B. Projected resource total for agencies not reporting (1.6 %)		181		
	C. Total agency resources required (est.)		11,483		
	Subtotal, Estimated Agency Current Costs			\$ 266,117	\$ 159,670
Current Central Resource Costs	A. Comptroller Staff Hours 6 FT FTE's * 6 months + 2 PT FTE's for 4 months		7,627	176,750	
	B. Office of State Auditor Audit Contractor (Clifton Gunderson)			\$ 132,000	
	Auditor's Office 7 FTE's for 8 weeks		2240	51,912	
	Subtotal, Estimated Central Current Costs			\$ 360,662	
Total Costs	Total Current Annual Costs				\$ 626,779

State of South Carolina
Enterprise Information System (SCEIS)
December 22, 2008

Appendix A.1-1
FINANCE AND ACCOUNTING SAVINGS
Preparing the State CAFR

Business Case Study
2008 Review & Update

CALCULATION OF ESTIMATED ANNUAL SAVINGS				
Savings Type	Description	Range of Potential Cash Savings		
		Conservative	Likely	Aggressive
	A. Estimated reduction in Agency time to prepare CAFR as a percentage	40.00%	50.00%	60.00%
	B. Reduction in Agency time to prepare Closing Packages in \$	\$106,447	\$133,059	\$159,670
	C. Reduction in Comptroller & Internal Auditor Time	\$144,265	\$180,331	\$216,397
Total Cost Savings	Subtotal, Estimated Agency Operational Savings	\$250,712	\$313,390	\$376,068

OTHER SAVINGS AND BENEFITS

The CG's office needs to complete the CAFR within the 6-month period required to gain the Government Finance Officer's Association (GFOA) Certificate of Achievement. SCEIS will enable the State to complete this document in an a much shorter time frame due to availability of a great deal of the information required from all agencies in a central, readily available location.

FIVE-YEAR PROJECTION OF ESTIMATED COST SAVINGS						
Savings Range	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	Totals
Percentage of Agencies Implemented	0.00%	0.00%	58.05%	100.00%	100.00%	258.05%
Conservative	\$ -	\$ -	\$ 145,532	\$ 250,712	\$ 250,712	\$ 646,955
Likely	\$ -	\$ -	\$ 181,915	\$ 313,390	\$ 313,390	\$ 808,694
Aggressive	\$ -	\$ -	\$ 218,298	\$ 376,068	\$ 376,068	\$ 970,433

NOTES:

1. Some agency-level personnel time will still be required to report items not in the general ledger - e.g., information on litigation matters, claims, operating leases, etc.

State of South Carolina
Enterprise Information System (SCEIS)
December 22, 2008

Appendix A.1-2
FINANCE AND ACCOUNTING SAVINGS
Accounting Reconciliation

Business Case Study
2008 Review & Update

FUNCTIONAL AREA

Finance and Accounting

BUSINESS PROCESS

Accounting Reconciliation

Overview of Current Process: This process includes all activities by agencies, boards and commissions to reconcile the following account balances with corresponding records maintained by the Comptroller General:

1. Federal grants/program funds
2. Cash
3. Appropriations

Legend:
Extraction
Calculation
Result
Direct Entry
Estimate

CALCULATION OF CURRENT PROCESS COSTS

Cost Type	Methodology and Assumptions	Unit Costs	Annual Resource Requirements (person-hours)	Cost Subtotals	COST TOTALS
Average Employee Cost per Hour	Average Employee Cost Per Hour				
	A. Average Annual Salary	\$36,795			
	B. Fringe Benefits	31.01%			
	C. Hours worked per year	2,080			
	Average Employee Cost Per Hour	\$ 23.18			
Totals are as reported in the 2008 Survey					
Current Agency Resource Costs	A. Agency resources required to reconcile federal grant/program balances		10,699		
	A.1. Additional resources for non-reporting agencies at 1.6%		171		
	B. Agency resources required for reconciling cash balances		20,347		
	B.1. Additional resources for non-reporting agencies at 1.6%		326		
	C. Agency resources required to reconcile appropriation balances		11,714		
	C.1. Additional resources for non-reporting agencies at 1.6%		187		
	Total agency resources required (reported + projected)		43,444		
	Total Agency Current Costs (est.)			\$ 1,006,835	
Total Costs	Total Current Annual Costs (est.)				\$ 1,006,835

CALCULATION OF ESTIMATED ANNUAL SAVINGS

Savings Type	Description	Range of Potential Cash Savings		
		Conservative	Likely	Aggressive
Operational Savings	A. Reduction in Agency time to conduct reconciliation activities			
	Time reduction (percentage)	65.00%	70.00%	80.00%
	Annual cost reduction	\$654,443	\$704,785	\$805,468
Total Cost Savings	Total Estimated Annual Savings	\$654,443	\$704,785	\$805,468

FIVE-YEAR PROJECTION OF ESTIMATED COST SAVINGS

Savings Range	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	Totals
Percentage of Agencies Implemented	1.02%	5.48%	16.57%	58.05%	100.00%	181.11%
Conservative	\$ 6,655	\$ 35,852	\$ 108,449	\$ 379,887	\$ 654,443	\$ 1,185,287
Likely	\$ 7,167	\$ 38,610	\$ 116,791	\$ 409,109	\$ 704,785	\$ 1,276,463
Aggressive	\$ 8,191	\$ 44,126	\$ 133,476	\$ 467,554	\$ 805,468	\$ 1,458,815

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Appendix A.1-3
FINANCE AND ACCOUNTING SAVINGS
Paying Vendor Invoices (Accounts Payable)

Business Case Study
2008 Review & Update

FUNCTIONAL AREA
BUSINESS PROCESS

Finance and Accounting
Accounts Payable Processes

Overview of Current Process:

This process includes all activities related to receiving and processing a vendor invoice, including:

1. Receiving and logging vendor invoices
2. Matching invoices to purchase orders and verifying receipt of goods/services
3. Routing for payment approval
4. Preparing disbursement voucher for payment
5. Comptroller General audit and approval of voucher

Legend:
Extraction
Calculation
Result
Direct Entry
Estimate

CALCULATION OF CURRENT PROCESS COSTS						
Current Central Process Costs	Methodology and Assumptions	Average Unit Cost	Annual Process Workload	Annual Cost Subtotals	ANNUAL COST TOTALS	
Average Employee Cost Per Hour	A. Average annual salary	\$36,795				
	B. Fringe benefits	31.01%				
	C. Hours worked per year	2,080				
	Average Employee Cost per Hour		\$ 23.18			
Current Central Process Costs	<i>Comptroller Staff Hours</i>					
	A. No. of FTE's processing disbursement vouchers for payment	10				
	Total Number of Comptroller Person-Hours			20,800		
Total Central Current Costs (est.)				\$ 482,045		
Current Agency Process Costs	A. Average number of hours to process an invoice for payment (from survey data)	1.08				
	Average Cost to Process a Vendor Invoice for Payment		\$25.09			
	A. Total number of vendor invoices processed, as reported by agencies providing survey data (minus Juvenile Justice)			1,463,800		
	B. Projected number of vendor invoices processed (estimated for 1.6 percent of agencies not reporting)			23,421		
	Total Number of Vendor Invoices Processed			1,487,221		
Total Agency Current Costs (est.)				\$ 37,319,778		
Total Costs	Total Current Annual Costs				\$ 37,801,822	

CALCULATION OF ESTIMATED ANNUAL SAVINGS				
Savings Type	Description	Range of Potential Cash Savings		
		Conservative	Likely	Aggressive
Direct Cash Savings	A. Vendor Early Payment Discounts Taken			
	Total dollar value invoices paid (FY 2008 data provided by CG)	\$3,681,368,165	\$3,681,368,165	\$3,681,368,165
	Total estimated increase in percentage of vendor invoices eligible for discounts	5.00%	7.50%	10.00%
	Total estimated dollar value of invoices eligible for discounts	\$184,068,408	\$276,102,612	\$368,136,817
	Estimated average vendor discount percentage	1.00%	1.50%	2.00%
	Annual cost reduction by taking vendor discounts	\$1,840,684	\$4,141,539	\$7,362,736
	Subtotal, Estimated Direct Cash Savings	\$1,840,684	\$4,141,539	\$7,362,736
Operational Savings	A. Reduction or reassignment of Comptroller General resources			
	Number of FTE 's impacted	1	2	3
	Annual cost reduction	\$48,204	\$96,409	\$144,613
	B. Reduction in Agency time to process vendor invoices			
	Time reduction based on Industry averages adjusted for inflation	53.32%	72.88%	78.29%
	Annual cost reduction	\$19,897,475	\$27,197,420	\$29,218,407
	Subtotal, Estimated Agency Operational Savings	\$19,945,679	\$27,293,829	\$29,363,020
Total Cost Savings	Total Estimated Annual Savings	\$21,786,363	\$31,435,368	\$36,725,757

FIVE-YEAR PROJECTION OF ESTIMATED COST SAVINGS - Cash Savings						
Savings Range	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	Totals
Percentage of Agencies Implemented	1.02%	5.48%	16.57%	58.05%	100.00%	181.11%
Conservative	\$ 18,719	\$ 100,837	\$ 305,024	\$ 1,068,470	\$ 1,840,684	\$ 3,333,734
Likely	\$ 42,118	\$ 226,884	\$ 686,303	\$ 2,404,057	\$ 4,141,539	\$ 7,500,901
Aggressive	\$ 74,877	\$ 403,349	\$ 1,220,095	\$ 4,273,879	\$ 7,362,736	\$ 13,334,935

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Appendix A.1-3
FINANCE AND ACCOUNTING SAVINGS
Paying Vendor Invoices (Accounts Payable)

Business Case Study
2008 Review & Update

FIVE-YEAR PROJECTION OF ESTIMATED COST SAVINGS - Operational Process Savings						
Savings Range	FY 2007-2008	FY 2008-2009	FY 2009-2010	FY 2010-2011	FY 2011-2012	Totals
Percentage of Agencies Implemented	1.02%	5.48%	16.57%	58.05%	100.00%	181.11%
Conservative	\$ 202,841	\$ 1,092,673	\$ 3,305,241	\$ 11,577,953	\$ 19,945,679	\$ 36,124,387
Likely	\$ 277,569	\$ 1,495,222	\$ 4,522,919	\$ 15,843,364	\$ 27,293,829	\$ 49,432,903
Aggressive	\$ 298,612	\$ 1,608,577	\$ 4,865,809	\$ 17,044,477	\$ 29,363,020	\$ 53,180,496

NOTES:

- Savings projections based on metrics from the Institute of Management and Administration's (IOMA) A/P Department Benchmarks & Analysis 2007 and Statewide actual costs to process a vendor invoice for payment

Benchmark savings based on current costs

A. Average cost per invoice with a low degree of automation	\$ 11.71	53.32%	of Current Cost
B. Average cost per invoice with a moderate degree of automation	\$ 6.81	72.88%	of Current Cost
C. Average cost per invoice with a high degree of automation	\$ 5.46	78.29%	of Current Cost

- An enterprise financial system will reduce the need for error resolution and data entry functions currently performed by CG. will also simplify audit function currently performed by 14 auditors
- SCEIS will reduce requirements performed by the State Auditor's Office and make their task easier. These reduced requirements may also obviate or, at a minimum, reduce the requirement for outside contractors to participate in the audit.

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Appendix A.1-5
FINANCE AND ACCOUNTING SAVINGS
Document Management

Business Case Study
2008 Review Update

FUNCTIONAL AREA Finance and Accounting

BUSINESS PROCESS Document management for financial processes

Overview of Current Process: This process encompasses all work involved in copying, routing, filing and retrieving original forms and copies used to facilitate common financial transactions, particularly the following high volume documents:

Legend:	1. Journal Voucher (STARS Form 01)
Extraction	2. Appropriation/Cash Transfer (STARS Form 30)
Calculation	3. Interdepartmental Transfer (STARS Form 40)
Result	4. Disbursement Voucher (STARS Form 60)
Direct Entry	5. Transmittal Control (STARS Form 100)
Estimate	

ESTIMATE OF CURRENT FINANCE/ACCOUNTING DOCUMENT WORKLOAD (PER YEAR)			
Methodology and Assumptions	Total Number of Original Forms	Total Number of Additional Copies	Total Annual Number of Copies
A. Assumptions			
1. Average number of copies produced per form (as per survey data) =	2,941		
B. Document workload data reported by agencies participating in survey			
1. Journal Voucher (STARS Form 01)	26,475	77,868	104,343
2. Appropriation/Cash Transfer (STARS Form 30)	13,808	40,612	54,420
3. Transmittal Control (STARS Form 100)	48,228	141,847	190,075
C. Document workload data projected for agencies not participating in survey (approx. 1.6 percent)			
1. Journal Voucher (STARS Form 01)	424	1,246	1,669
2. Appropriation/Cash Transfer (STARS Form 30)	221	650	871
3. Transmittal Control (STARS Form 100)	772	2,270	3,041
D. Document workload data provided by Comptroller General			
1. Interdepartmental Transfer (STARS Form 40)	14,629	43,027	57,656
2. Disbursement Voucher (STARS Form 60)	1,631,214	4,797,688	6,428,902
Total Number of Selected Finance/Accounting Forms Processed per Year	1,735,770	5,105,207	6,840,977

CALCULATION OF CURRENT PROCESS COSTS			
Cost Type	Methodology and Assumptions	Cost Extension	Total Annual Cost
Average Employee Cost per Hour	A. Average Employee Cost Per Hour		
	1. Average Annual Salary	\$36,795	
	2. Fringe Benefits	31.01%	
	3. Hours worked per year	2,080	
	Average Employee Cost/Hour =	\$23.18	
Current Document Management Costs	A. Estimated cost of copying, routing and filing current finance/accounting forms		
	1. Average time (minutes)	5	
	2. Employee labor cost per form	\$1,931	
	Cost for copying, routing and filing forms =	\$ 3,352,238	
	B. Estimated cost for retrieving Finance/Accounting forms		
	1. Average time to retrieve a form	30	
	2. Cost to retrieve a single form	\$11.59	
	3. Percentage of forms retrieved (e.g., for purchasing info, audits)	10%	
	Cost of retrieving forms =	\$ 2,011,343	
	C. Estimated cost for locating missing or misfiled finance/accounting forms		
	1. Average time to find a missing form	180	
	2. Percentage of files missing	5%	
	3. Cost to recover a missing or misplaced form	\$69.53	
4. Percentage of missing files that need to be retrieved	10%		
Cost of locating missing or misplaced forms =	\$ 603,403		
Total	Total Current Process Costs =		\$ 5,966,984

CALCULATION OF ESTIMATED ANNUAL SAVINGS					
Savings Type	Description		Range of Potential Cash Savings		
			Conservative	Likely	Aggressive
			80% of full Savings	90% of Full Savings	Full Savings
Operational Savings	1 Minutes required to copy documents	Not Required	\$ 2,681,791	\$ 3,017,014	\$ 3,352,238
	2 Minutes required to retrieve docs	5	1,340,895	1,508,507	1,676,119
	3 Minutes required to Find Missing Files	15	442,495	497,807	553,119
Total Cost Savings	Total Estimated Annual Savings		\$ 4,465,181	\$ 5,023,329	\$ 5,581,477

FIVE-YEAR PROJECTION OF ESTIMATED COST SAVINGS						
Savings Range	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	Totals
Percentage of Agencies Implemented	1.02%	5.48%	16.57%	58.05%	100.00%	181.11%
Conservative	\$ 45,409	\$ 244,613	\$ 739,935	\$ 2,591,923	\$ 4,465,181	\$ 8,087,061
Likely	\$ 51,086	\$ 275,190	\$ 832,427	\$ 2,915,913	\$ 5,023,329	\$ 9,097,944
Aggressive	\$ 56,762	\$ 305,767	\$ 924,918	\$ 3,239,903	\$ 5,581,477	\$ 10,108,827

NOTES:

- Performance benchmarks for retrieving a file or locating a missing file based on survey by International Records Management Council (2005)
- Projected agency-level time savings will result from automated records filing and rapid electronic access to financial records currently maintained in common finance/accounting forms

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Finance/Procurement Implementation Phase	FY 2007-2008	FY 2008-2009	FY 2009-2010	FY 2010-2011	FY 2011-2012	Totals
Phase 1A - November 2007 (FI & MM)						
E12 Comptroller General	48					
E16 State Treasurer's Office	62					
F27 State Auditor	50					
H71 Wil Lou Gray Opportunity School	48					
H87 State Library	39					
ITMO / MMO	52					
R20 Dept of Insurance	85					
Vendor Master Database						
Phase 1B - April 2008 (FI & MM)						
E08 Secretary of State	28					
H91 SC Arts Commission	34					
H95 State Museum	38					
L36 Human Affairs Commission	41					
L46 Commission on Minority Affairs	9					
P16 Department of Agriculture	133					
R04 Public Service Commission	38					
R08 Workers Compensation Commission	59					
R23 Board of Financial Institutions	33					
R52 State Ethics Commission	10					
Functional Fit 2 - November 2008 (FI & MM)						
C05 Administrative Law Court		10				
L24 Commission for the Blind		108				
E21 Commission on Prosecution Coord		41				
P40 Conservation Bank		2				
R28 Dept of Consumer Affairs		63				
P24 Dept of Natural Resources		739				
E28 Election Commission		18				
L12 John de la Howe School		105				
P36 Patriots Point Dev Authority		66				
S80 Procurement Review Panel		2				
E19 Retirement System Investment Comm		15				
R12 State Accident Fund		75				
Functional Fit 3 & 4 - November 2009 (FI, MM, HR)						
B04 Supreme Court / Judicial Department			100			
C05 Governor's Office EOPP			212			
D10 State Law Enforcement Division			589			
D17 Governor's Office			30			
D20 Governors Office Mansion & Grounds			16			
E04 Lieutenant Governor's Office			42			
E20 Attorney General's Office			156			
E24 Adjutant General's Office			137			
H03 Higher Education, Commission on			22			
H06 Tuition Grants Commission			4			
H59 Technical & Comp Education Board			100			
H87 Educational Television Network			222			
H79 Archives & History, Dept of			83			
J20 Alcohol & Other Drug Abuse Services			26			
L32 Housing, Finance & Dev Authority			115			

N08	Probation, Parole & Pardon Services	757				
P12	Forestry Commission	377				
P26	Sea Grant Consortium	14				
P32	Department of Commerce	130				
R16	Second Injury Fund	20				
R36	Labor, Licensing & Regulation, Dept of	382				
R44	Department of Revenue	631				
<u>Broader Scope Wave 1 & 2 - November 2009 (FI, MM, HR)</u>						
F03	Budget & Control Board	1,104				
H63	Department of Education	956				
H73	Vocational Rehabilitation Department	1,040				
H75	School for the Deaf & Blind	374				
J02	Health & Human Services Department	1,112				
J12	Department of Mental Health	4,824				
J16	Dept of Disabilities & Special Needs	140				
K05	Department of Public Safety	1,519				
N12	Department of Juvenile Justice	1,649				
N20	Criminal Justice Academy	105				
P28	Parks, Recreation & Tourism	482				
R08	Office of Regulatory Staff	66				
R40	Department of Motor Vehicles	1,266				
R80	Employment Security Commission	881				
<u>Broader Scope Wave 3 - May 2010 (FI, MM, HR)</u>						
N04	Department of Corrections	5,730				
J04	Dept of Health & Environmental Ctrf	1,112				
L04	Department of Social Services	3,730				
U12	Department of Transportation	5,104				
Total by Implementation Phase		803	1,244	19,643	15,676	37,366

State of South Carolina
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Business Case Study
2008 Review & Update

**Total Experiencing Benefits by Fiscal Year and Application Suite.
(Assumes at least 6 months or more utilization experience)**

	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Finance (FI), Procurement (MM) Benefit Realization	380	2,047	6,192	21,690	37,366
FI / MM Benefit Realization	1.02%	5.48%	16.57%	58.05%	100.00%
SAP as Book of Record and CAFR Benefit Realization	-	-	21,690	37,366	37,366
Book of Record Benefit Realization	0.00%	0.00%	58.05%	100.00%	100.00%
Inventory Management (IM) Benefit Realization	-	-	-	21,690	37,366
Inv Mngt Benefit Realization	0.00%	0.00%	0.00%	58.05%	100.00%
Human Resources / Payroll Benefit Realization	-	-	-	21,690	37,366
HR / Payroll Benefit Realization	0.00%	0.00%	0.00%	58.05%	100.00%

Legend:
Extraction
Calculation
Result
Direct Entry
Estimate

Appendix A, Workbook A.2

State of South Carolina
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**Appendix A.2.1
PURCHASING AND INVENTORY MANAGEMENT SAVINGS
Processing Purchase Orders**

Business Case Study
2008 Review & Update

FUNCTIONAL AREA Purchasing and Inventory Management
BUSINESS PROCESS Preparing Requisitions and Processing, Approving and Issuing Purchase Orders

Overview of Current Process: This process includes all major activities involved in creating a purchase order, including:

- | | |
|----------------|----------------------------------------------------------------------------------|
| Legend: | 1. Creating a requisition |
| Extraction | 2. Checking unit budgets for funding availability |
| Calculation | 3. Getting vendor quotes or checking term contracts |
| Result | 4. Creating the PO document |
| Direct Entry | 5. Circulating PO for review and approval |
| Estimate | 6. Entering or re-entering data from paper forms to automated purchasing systems |
| | 7. Copying and filing requisitions, quotes, PO's and other supporting documents |

CALCULATION OF CURRENT PROCESS COSTS					
Cost Type	Methodology and Assumptions	Unit Costs	Annual Workload	Annual Cost Subtotals	ANNUAL COST TOTALS
Average Employee Cost per Hour	A. Average Annual Salary	\$36,795			
	B. Fringe Benefits	31.01%			
	C. Hours worked per year	2,080			
	Average Employee Cost Per Hour		\$ 23.18		
Total Current Agency Resource Costs	A. Total agency person-hours required to requisition, route for approval, and process PO's, as reported in survey		1,481,234		
	B. Projected number of person-hours required, estimated for agencies not reporting (1.6 percent)		23,700		
	C. Total agency resources required (est.)		1,504,934		
	Total Agency Current Costs (est.)			\$ 34,877,174	
Cost to Issue a Single Purchase Order	A. Total number of PO's issued, as reported in survey		262,407		
	B. Projected number of PO's issued, estimated for agencies not reporting (1.6 percent based on FTEs)		4,199		
	C. Total number of PO's issued		266,606		
	D. Average total weighted time (hours) to requisition and issue a PO		5.64		
	E. Average cost to issue a PO		\$130.82		
Total Costs	Total Current Annual Costs				\$ 34,877,174

Science Applications International Corp. (SAIC)
Independent Verification & Validation (IV&V)

1/20/2009

1

CALCULATION OF ANNUAL COST SAVINGS				
Savings Type	Description	Range of Potential Cash Savings		
		Conservative	Likely	Aggressive
Reduced Time/Cost Process a Single Purchase Order	A. Estimated time to prepare and issue PO using SAP			
	1. Create requisition	20	16	12
	2. Check budget for funding availability	0	0	0
	3. Circulate requisition for review and approval	15	10	5
	4. Get vendor quotes or check term contracts	50	35	20
	5. Create PO document	5	5	5
	6. Issue PO and file supporting documents (e.g., vendor quotes)	10	10	10
B. Total estimated PO processing time using SAP (min.)	100	76	52	
C. Percentage time savings using SAP	70.47%	77.56%	84.65%	
Operational Savings	A. Number of PO's issued in FY2008 (from above) =	266,606		
	B. Average employee cost/hour (from above)	\$23.18		
	C. Total estimated cost savings		\$24,579,430	\$27,050,888
Total Cost Savings	Total Estimated Annual Savings	\$24,579,430	\$27,050,888	\$29,522,347

OTHER SAVINGS AND BENEFITS

Because all purchasing transactions will be visible at an enterprise level, procurement non-compliance will be easier to track

FIVE-YEAR PROJECTION OF ESTIMATED COST SAVINGS						
Savings Range	Year 1	Year 2	Year 3	Year 4	Year 5	5-Year Total
	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	
Percentage of Agencies Implemented	1.02%	5.48%	16.57%	58.05%	100.00%	181.11%
Conservative	\$ 249,965	\$ 1,346,521	\$ 4,073,110	\$ 14,267,725	\$ 24,579,430	\$ 44,516,751
Likely	\$ 275,099	\$ 1,481,913	\$ 4,482,661	\$ 15,702,344	\$ 27,050,888	\$ 48,992,905
Aggressive	\$ 300,233	\$ 1,617,306	\$ 4,892,211	\$ 17,136,962	\$ 29,522,347	\$ 53,469,059

NOTE S:

- Total estimated cost for issuing a purchase order using SAP based on experience at SCDMH. The projected 60 minute median processing time may be conservative for most term contract purchases that require little or no supervisor approval.

CALCULATION OF ANNUAL COST SAVINGS				
Savings Type	Description	Range of Potential Cash Savings		
		Conservative	Likely	Aggressive
Sale of Obsolete/Damaged Inventory (one-time)	A. Estimated valuation of obsolete inventory (from current inventory and levels)	\$ 2,296,992	\$ 2,296,992	\$ 2,296,992
	B. Estimated inventory devaluation + sales transaction costs (percentage)	60.00%	50.00%	40.00%
	C. Adjusted value of obsolete/damaged inventory	\$ 918,797	\$ 1,148,496	\$ 1,378,195
Reduced Volume of New Purchases (one-time)	A. Projected number of inventory turns using industry standard turns for organizations using ERP & recommended Inventory Management techniques.	4.00	5.00	6.00
	B. Estimate of projected inventory valuation (net current inventory x ratio of turns)	\$ 69,620,625	\$ 55,696,500	\$ 46,413,750
	C. Due to consumption of excess inventory, Savings resulting from Cost Avoidance (one-time benefit)	\$ 45,375,590	\$ 59,299,715	\$ 68,582,465
Increased Interest Income	A. Net increased interest earnings on value of deferred purchases			
	1. Interest rate (current 3-month Treasury Bill)	0.21%	0.21%	0.21%
	2. Increased interest income (annual)	\$ 95,289	\$ 124,529	\$ 144,023
Total Cost Savings	Total Estimated Annual Savings	\$ 95,289	\$ 124,529	\$ 144,023

FIVE-YEAR PROJECTION OF ESTIMATED ANNUAL CASH SAVINGS						
Savings Range	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	5-Year Total
Percentage of Agencies Implemented	0.00%	0.00%	0.00%	58.05%	100.00%	158.05%
Conservative	\$ -	\$ -	\$ -	\$ 55,313	\$ 95,289	\$ 150,601
Likely	\$ -	\$ -	\$ -	\$ 72,286	\$ 124,529	\$ 196,816
Aggressive	\$ -	\$ -	\$ -	\$ 83,602	\$ 144,023	\$ 227,625

FIVE-YEAR PROJECTION OF ESTIMATED ONE-TIME CASH SAVINGS						
Savings Range	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	5-Year Total
Percentage of Agencies Implemented	0.00%	0.00%	0.00%	58.05%	41.95%	100.00%
Conservative	\$ -	\$ -	\$ -	\$ 26,872,698	\$ 19,421,688	\$ 46,294,387
Likely	\$ -	\$ -	\$ -	\$ 35,088,629	\$ 25,359,582	\$ 60,448,211
Aggressive	\$ -	\$ -	\$ -	\$ 40,610,360	\$ 29,350,300	\$ 69,960,660

NOTE S:

- Range of current annual inventory turns and percentage of current inventory considered to be obsolete are conservative assumptions based on BearingPoint's experience at SCDMH, knowledge of general inventory policies and practices in South Carolina, and other prior experience working with state government clients
- Rationale supporting improvements in inventory turnover:
 - Improvements in procurement efficiency will enable Just-in-Time delivery of required products
 - State can track inventories better – at the agency and enterprise level
- Number of projected inventory turns is conservative and may be increased to 11 or 12 with stronger statewide inventory management practices.
- The state will continue to earn interest on funds not committed to early purchases that will be stored in inventory until needed.

State of South Carolina
Enterprise Information System (SCEIS)
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Appendix A.2.3
PURCHASING AND INVENTORY MANAGEMENT SAVING S
Maintaining Vendor Information Files

Business Case Study
2008 Review & Update

FUNCTIONAL AREA Purchasing and Inventory Management
BUSINESS PROCESS Maintaining Agency Vendor Information Files

Overview of Current Process: This process includes activities by state government agencies to maintain/update their own vendor files including:

Legend:
Extraction
Calculation
Result
Direct Entry
Estimate

1. Entering in new vendors when the vendor is unwilling or unable to enter his own information
2. Updating vendor information if the vendor does not do this.
3. Adding comments relative to vendor relationships
4. Establishing vendor rules as required.

CALCULATION OF CURRENT PROCESS COSTS					
Cost Type	Methodology and Assumptions	Unit Costs	Workload Measures	Cost Subtotals	COST TOTALS
Average Employee Cost per Hour	A. Average Annual Salary	\$36,795			
	B. Fringe Benefits	31.01%			
	C. Hours worked per year	2,080			
	Average Employee Cost Per Hour		\$ 23.18		
Total Number of Agency Vendor Files	A. Total number of agency vendor files (based on no. of agencies Live at the end of FY 08 and those going live thereafter).		53		
Annual Cost to Maintain Agency Vendor File	A. Total annual agency person-hours required to maintain vendor files, as reported in survey		8,665		
	B. Projected number of annual person-hours required, estimated for agencies not reporting (1.6 percent by FTEs)		139		
	C. Total agency resources required (est.)		8,803	\$ 204,015	
	Total Current Costs				\$ 204,015

CALCULATION OF ANNUAL COST SAVING S				
Savings Type	Description	Range of Potential Cash Savings		
		Conservative	Likely	Aggressive
Process Savings	A. Reduction in Agency time to maintain vendor files			
	Time reduction (percentage)	65.00%	75.00%	85.00%
	Annual cost reduction	\$132,609	\$153,011	\$173,412
Total Cost Savings	Total Estimated Annual Savings	\$132,609	\$153,011	\$173,412

FIVE-YEAR PROJECTION OF ESTIMATED PROCESS COST SAVING S						
Savings Range	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	5-Year Total
Percentage of Agencies Implemented	1.02%	5.48%	16.57%	58.05%	100.00%	181.11%
Conservative	\$ 1,349	\$ 7,265	\$ 21,975	\$ 76,976	\$ 132,609	\$ 240,174
Likely	\$ 1,556	\$ 8,382	\$ 25,356	\$ 88,819	\$ 153,011	\$ 277,124
Aggressive	\$ 1,764	\$ 9,500	\$ 28,737	\$ 100,661	\$ 173,412	\$ 314,074

FUNCTIONAL AREA Purchasing and Inventory Management
BUSINESS PROCESS Preparing and processing requisition and purchase order forms and

Overview of Current Process: This process encompasses all work involved in copying, routing, filing and retrieving original forms and copies for requisitions and purchase orders

Legend:
Extraction
Calculation
Result
Direct Entry
Estimate

ESTIMATE OF CURRENT PURCHASING DOCUMENT WORKLOAD (PER YEAR)

Methodology and Assumptions	Total Number of Original Forms	Total Number of Additional Copies	Total Annual Number of Copies
A. Assumptions			
1. Weighted average no. of requisition copies produced (as per survey data)	1.94		
2. Weighted average number of PO copies produced (as per survey data) =	3.40		
B. Document workload reported by agencies participating in survey			
1. Requisitions	207,726	194,743	402,470
2. Purchase Orders	262,407	628,684	891,091
C. Document workload projected for agencies not participating in survey (approx. 1.6 percent)			
1. Requisitions	3,324	3,116	6,440
2. Purchase Orders	4,199	10,059	14,257
Total Number of Selected Purchasing Forms Processed per Year	477,656	836,602	1,314,258

CALCULATION OF CURRENT PROCESS COSTS			
Cost Type	Methodology and Assumptions	Cost Extension	Total Annual Cost
Average Employee Cost per Hour	A. Average Employee Cost Per Hour		
	1. Average Annual Salary	\$36,795	
	2. Fringe Benefits	31.0%	
	3. Hours worked per year	2,080	
	Average Employee Cost/Hour =	\$23.18	
Current Document Management Costs	A. Estimated cost of copying, routing and filing current Purchasing forms		
	1. Average time (minutes)	5	
	2. Employee labor cost per form	\$1.931	
	Cost for copying, routing and filing forms =		\$ 2,538,184
	B. Estimated cost for retrieving Purchasing forms		
	1. Average time to retrieve a form	30	
	2. Cost to retrieve a single form	\$11.59	
	3. Percentage of forms retrieved (e.g., for purchasing info, audits)	5%	
	Cost of retrieving forms =		\$ 761,455
	C. Estimated cost for locating missing or misfiled Purchasing forms		
	1. Average time to find a missing form	180	
	2. Percentage of files missing	5%	
	3. Cost to recover a missing or misplaced form	\$23.18	
4. Percentage of missing files that need to be retrieved	10%		
Cost of locating missing or misplaced forms =		\$ 152,291	
Total	Total Current Process Costs =		\$ 3,451,931

CALCULATION OF ANNUAL COST SAVINGS					
Savings Type	Description	Range of Potential Cash Savings			
		Conservative	Likely	Aggressive	
Operational Savings	Reduction in Agency documentation time and expense		20% added time	10% added time	Estimated Savings
	1 Minutes required to copy documents	Not Required	\$ 2,030,548	\$ 2,284,366	\$ 2,538,184
	2 Minutes required to retrieve docs	5	507,637	571,091	634,546
	3 Minutes required to Find Missing Files	15	111,680	125,640	139,600
Total Cost Savings	Total Estimated Annual Savings	\$ 2,649,865	\$ 2,981,098	\$ 3,312,331	

FIVE-YEAR PROJECTION OF ESTIMATED COST SAVINGS						
Savings Range	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	5-Year Total
Percentage of Agencies Implemented	1.02%	5.48%	16.57%	58.05%	100.00%	181.11%
Conservative	\$ 26,948	\$ 145,166	\$ 439,115	\$ 1,538,178	\$ 2,649,865	\$ 4,799,272
Likely	\$ 30,317	\$ 163,312	\$ 494,004	\$ 1,730,450	\$ 2,981,098	\$ 5,399,181
Aggressive	\$ 33,685	\$ 181,457	\$ 548,893	\$ 1,922,723	\$ 3,312,331	\$ 5,999,090

State of South Carolina
Enterprise Information System (SCEIS)
December 22, 2008

Appendix A.2.6
PURCHASING AND INVENTORY MANAGEMENT SAVING S
5-Year Cost Savings Summary

Business Case Study
2008 Review & Update

PURCHASING PROCESS AREA		Range of Savings (FY 2008 - FY 5-Year Totals)		
		Conservative	Likely	Aggressive
1	Processing Purchase Orders	\$ 44,516,751	\$ 48,992,905	\$ 53,469,059
2	Maintaining Consumable Inventories	150,601	196,816	227,625
3	Maintaining Vendor Files	240,174	277,124	314,074
4	Document Management (Purchasing Forms Only)	4,799,272	5,399,181	5,999,090
Totals		\$ 49,706,798	\$ 54,866,025	\$ 60,009,847

PURCHASING PROCESS AREA		Range of Savings 2002 5-Year Totals		
		Conservative	Likely	Aggressive
1	Processing Purchase Orders	\$ 74,537,446	\$ 81,550,856	\$ 88,564,267
2	Maintaining Consumable Inventories	5,038,965	14,475,355	22,655,310
3	Maintaining Vendor Files	470,187	542,524	614,860
4	Document Management (Purchasing Forms Only)	20,076,737	22,944,843	25,812,948
Totals		\$ 100,123,335	\$ 119,513,578	\$ 137,647,386

Difference between 2002 BC & 2008 BC \$ (50,416,537) \$ (64,647,553) \$ (77,637,539)

FUNCTIONAL AREA **Human Resources Management and Payroll**

BUSINESS PROCESS **Processing Semi-Monthly Employee Payroll**

Overview of Current Process: This process includes all major activities involved in processing an agency's bi-monthly employee payroll.

Process: including the following key process steps:

Legend:	1. Collecting/batching employee time reports
Extraction	2. Creating payroll files
Calculation	3. Reviewing and editing payroll files
Result	4. Certifying payroll
Direct Entry	5. Processing payroll voucher
Estimate	6. Recording journal entry
	7. Distributing paychecks or pay stubs (for direct deposit)

CALCULATION OF CURRENT PROCESS COSTS						
Cost Type	Methodology and Assumptions	Unit Costs	Annual Workload	Annual Cost Subtotals	ANNUAL COST TOTALS	
Average Employee Cost per Hour	A. Average Annual Salary	\$36,795				
	B. Fringe Benefits	31.01%				
	C. Hours worked per year	2,080				
	Average Employee Cost Per Hour		\$ 23.18			
Annual Agency Cost for Processing Employee Payroll	A. Total agency person-hours dedicated to processing payroll annually	252,096				
	B. Estimated # of FTE's for all agencies per Survey plus additional 10,000 employees processed for payroll by the State	121.20				
	D. Number of pay cycles per year	24				
	E. Total person-hours per year processing employee payroll			252,096		
	F. Total annual agency cost of processing employee payroll				\$ 5,842,380	
Annual Central Costs for Processing Employee Payroll	A. Number of Comptroller General FTE's dedicated to processing employee payroll	8				
	B. Number of State Treasurer FTE's dedicated to processing employee payroll	4				
	C. Total annual central cost for processing employee payroll				\$ 578,453	
Total Costs	Total Current Annual Cost					\$ 6,420,833

CALCULATION OF ESTIMATED ANNUAL SAVINGS					
Savings Type	Description		Range of Potential Cash Savings		
			Conservative	Likely	Aggressive
Current Payroll Processing Cost per Employee	A. No. of employees paid each payroll cycle (current Jan. 2003)	50,089			
	B. Current payroll processing cost per employee per year	\$ 128.19			
	C. Current payroll processing cost per employee per pay cycle	\$ 5.34			
Reduced Payroll Processing Transaction Costs	A. Median payroll transaction cost per employee, per pay cycle using SAP	2.41		45.05%	
	B. Net savings in payroll transaction cost per employee, per pay cycle (assuming 15 percent standard deviation from median)		\$ 2.77	\$ 2.41	\$ 2.05
	C. Total annual Payroll transaction costs		\$ 3,326,105	\$ 2,892,265	\$ 2,458,425
Total Cost Savings	Total Annual Savings		\$ 3,094,729	\$ 3,528,568	\$ 3,982,408

FIVE-YEAR PROJECTION OF ESTIMATED COST SAVINGS						
Savings Range	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	Totals
Percentage of Agencies Implemented	0.00%	0.00%	0.00%	58.05%	100.00%	158.05%
Conservative	\$ -	\$ -	\$ -	\$ 1,796,410	\$ 3,094,729	\$ 4,891,139
Likely	\$ -	\$ -	\$ -	\$ 2,048,243	\$ 3,528,568	\$ 5,576,811
Aggressive	\$ -	\$ -	\$ -	\$ 2,300,076	\$ 3,982,408	\$ 6,262,484

NOTES:

1. Median payroll transaction cost per employee derived from benchmark data developed by BearingPoint for the American Payroll Association (January 2002) for organizations with 50,000 to 100,000 employees. Includes cost for deduction entry, payroll accounting, taxes, payroll processing and other miscellaneous payroll functions.

FUNCTIONAL AREA **Human Resources Management and Payroll**

BUSINESS PROCESS **Travel Reimbursement**

Overview of Current Process: This process includes all steps required to process reimbursement payment to employees for out-of-pocket travel expenses incurred on approved business travel

Legend:	Result
Extraction	Direct Entry
Calculation	Estimate

CALCULATION OF CURRENT PROCESS COSTS					
Cost Type	Methodology and Assumptions	Unit Costs	Annual Workload	Annual Cost Subtotals	ANNUAL COST TOTALS
Average Employee Cost per Hour	A. Average Annual Salary	\$36,796			
	B. Fringe Benefits	31.01%			
	C. Hours worked per year	2,080			
	Average Employee Cost Per Hour		\$ 23.18		
Annual Workload	A. Total number of travel reimbursement vouchers issued (FY 2008)		165,533		
	B. Total dollar value of travel reimbursement vouchers issued (FY 2008)	Current	SCEIS	30,181,578	
Employee, Agency and Central Processing Costs	A. Average (est) time for employee to complete a travel reimbursement voucher (min.)	20	15		
	B. Average (est) time for agency staff to review & process travel reimbursement voucher (min.)	15	10		
	General and Treasurer to process a travel reimbursement voucher for payment (min.)	10	5		
	D. Total estimated time to create and process a travel reimbursement voucher for payment	45	30		
	D. Total number of hours (statewide) to complete travel reimbursement vouchers			124,150	
	C. Total annual cost for employees to complete travel reimbursement vouchers			2,877,192	
Total Costs	Total Current Annual Cost				2,877,192

CALCULATION OF ESTIMATED ANNUAL SAVINGS				
Savings Type	Description	Range of Potential Cash Savings		
		Conservative	Likely	Aggressive
Process Savings	A. Total percentage of costs saved by combining payroll and travel reimbursement processing and payment functions	33.30%	42.00%	55.00%
	B. Net costs to input, review & approve, and process travel reimbursements	\$ 1,919,087	\$ 1,868,772	\$ 1,294,737
Total Cost Savings	Total Annual Savings	\$ 958,105	\$ 1,208,421	\$ 1,582,458

FIVE-YEAR PROJECTION OF ESTIMATED COST SAVINGS						
Savings Range	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	Totals
Percentage of Agencies Implemented	0.00%	0.00%	0.00%	58.05%	100.00%	158.05%
Conservative	\$ -	\$ -	\$ -	\$ 556,155	\$ 958,105	\$ 1,514,260
Likely	\$ -	\$ -	\$ -	\$ 701,457	\$ 1,208,421	\$ 1,909,878
Aggressive	\$ -	\$ -	\$ -	\$ 918,575	\$ 1,582,458	\$ 2,501,031

NOTES:

FUNCTIONAL AREA Human Resources Management and Payroll
BUSINESS PROCESS Leave Administration

Overview of Current Process: This process includes all employee and staff hours involved in requesting, reviewing and approving employee annual and sick leave. It also entails activities related maintaining current and accurate records of employee leave balances.

Legend:

Extraction
Calculation
Result
Direct Entry
Estimate

CALCULATION OF CURRENT PROCESS COSTS					
Cost Type	Methodology and Assumptions		Annual Workload (hours)	Annual Cost Subtotals	ANNUAL COST TOTALS
Average Employee Cost per Hour	A. Average Annual Salary	\$36,795			
	B. Fringe Benefits	31.01%			
	C. Hours worked per year	2,080			
	Average Employee Cost Per Hour		\$ 23.18		
Preparing Employee Leave Request Forms	A. Average time to prepare leave request (minutes)	10			
	B. Approx. number of leave request forms prepared/submitted by each employee /yr	7			
	C. Total number of employees (in survey group)	40,473	47,219		
	D. Total cost of preparing employee leave requests			\$ 1,094,299	
Maintaining Annual and Sick Leave Records	A. Annual number of agency person-hours committed to leave administration duties today (total from survey)		7,096.32		
	B. Additional annual person-hours, estimated for agencies not reporting (1.6 percent by total employee headcount)		114		
	C. Total number of Agency hours (reported and estimated)		7,210		
	D. Total cost of performing employee leave administration activities today			\$ 167,090	
Total Costs	Total Current Annual Cost				\$ 1,261,389

Science Applications International Corp. (SAIC)
Independent Verification & Validation (IV&V)

1/20/2009

1

CALCULATION OF ESTIMATED ANNUAL SAVINGS				
Savings Type	Description	Range of Potential Cash Savings		
		Conservative	Likely	Aggressive
Process Savings	A. Percentage of current time saved by combining leave request administration functions with automated time reporting	65.00%	75.00%	85.00%
	B. Total estimated cost using SCEIS functionality	\$ 441,486	\$ 315,347	\$ 189,208
Total Cost Savings	Total Annual Savings	\$ 819,903	\$ 946,042	\$ 1,072,181

FIVE-YEAR PROJECTION OF ESTIMATED COST SAVINGS						
Savings Range	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	Totals
Percentage of Agencies Implemented	0.00%	0.00%	0.00%	58.05%	100.00%	158.05%
Conservative	\$ -	\$ -	\$ -	\$ 475,933	\$ 819,903	\$ 1,295,835
Likely	\$ -	\$ -	\$ -	\$ 549,153	\$ 946,042	\$ 1,495,195
Aggressive	\$ -	\$ -	\$ -	\$ 622,373	\$ 1,072,181	\$ 1,694,554

FUNCTIONAL AREA Human Resources Management and Payroll
BUSINESS PROCESS Employee Records Management and Benefits Administration

Overview of Current Process: This process includes costs for maintaining and updating employee personnel records and providing benefits administration support

Legend:
Extraction
Calculation
Result
Direct Entry
Estimate

CALCULATION OF CURRENT PROCESS COSTS				
Cost Type	Methodology and Assumptions	Annual Workload	Annual Cost Subtotals	ANNUAL COST TOTALS
Average Employee Cost per Hour	A. Average Annual Salary		\$36,795	
	B. Fringe Benefits		31.01%	
	C. Hours worked per year		2,080	
	Average Employee Cost Per Hour		\$ 23.18	
Employee Benefits Administration	A. Total number of Agency FTE's performing benefits administration functions today (from survey)	216.4		
	B. Other Agency FTE's performing benefits administration today, estimated for agencies not reporting (1.6% by total FTE count)	3.5		
	C. Total number of Agency FTE's (reported and estimated)	219.8		
	D. Total cost of providing employee benefits administration today		\$ 10,595,898	
Employee Records Management	A. Total number of Agency FTE's dedicated to maintaining employee records today (total from survey)	226.8		
	B. Other Agency FTE's dedicated to maintaining employee records, estimated for agencies not reporting (1.6% by total FTE count)	3.6		
	C. Total number of Agency FTE's (reported and estimated)	230.4		
	D. Total agency cost for maintaining/updating employee records		\$ 11,107,695	
Total Costs	ANNUAL TOTALS	450.2		\$ 21,703,593

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1/20/2009

1

CALCULATION OF ESTIMATED ANNUAL SAVINGS				
Savings Type	Description	Range of Potential Cash Savings		
		Conservative	Likely	Aggressive
Process Savings	A. Number of HR FTE's required to service every 100 employees (using SAP)	0.8	0.7	0.6
	B. Number of HR FTE's required based on 40,473	323.8	283.3	242.8
	C. Percent reduction in the number of FTE staff (from current total of 450 FTE's)	28.09%	37.08%	46.06%
	D. Total estimated process savings (% reduction from Line C applied to current cost)	\$ 6,095,762	\$ 8,046,741	\$ 9,997,720
Total Cost Savings	Total Annual Savings	\$ 6,095,762	\$ 8,046,741	\$ 9,997,720

FIVE-YEAR PROJECTION OF ESTIMATED COST SAVINGS						
Savings Range	FY 2007-2008	FY 2008-2009	FY 2009-2010	FY 2010-2011	FY 2011-2012	Totals
Percentage of Agencies Implemented	0.00%	0.00%	0.00%	58.05%	100.00%	158.05%
Conservative	\$ -	\$ -	\$ -	\$ 3,538,433	\$ 6,095,762	\$ 9,634,194
Likely	\$ -	\$ -	\$ -	\$ 4,670,926	\$ 8,046,741	\$ 12,717,666
Aggressive	\$ -	\$ -	\$ -	\$ 5,803,419	\$ 9,997,720	\$ 15,801,138

FUNCTIONAL AREA Human Resources Management and Payroll

BUSINESS PROCESS Preparing and processing HR and payroll documents

Overview of Current Process: This process encompasses all work involved in copying, routing, filing and retrieving original forms and copies for common HR and payroll documents. It does not cover cost of paper supplies, copier ink, or storage.

Legend:	Result
Extraction	Direct Entry
Calculation	Estimate

ESTIMATE OF CURRENT HR/PAYROLL DOCUMENT WORKLOAD (PER YEAR)			
Methodology and Assumptions	Annual Workload		
	Total Number of Original Forms	Total Number of Additional Copies	Total Annual Number of Copies
A. Assumptions			
1. Weighted average no. of copies of HR/Payroll forms produced (as per survey data)	2.56		
B. Document workload reported by agencies participating in survey			
1. Employee time sheets	971,352	2,487,281	3,458,633
2. Leave Requests	283,311	725,457	1,008,768
3. Change in Employee Personnel Records	399,750	1,023,615	1,423,365
4. Employee Benefits Change	133,498	341,840	475,338
C. Document workload projected for agencies not participating in survey (approx. 1.6 percent)			
1. Employee time sheets	15,542	39,796	55,338
2. Leave Requests	4,533	11,607	16,140
3. Change in Employee Personnel Records	6,396	16,378	22,774
4. Employee Benefits Change	2,136	5,469	7,605
Total Number of Selected HR/Payroll Forms Processed per Year	1,816,518	4,651,444	6,467,962

CALCULATION OF CURRENT PROCESS COSTS				
Cost Type	Methodology and Assumptions	Cost Extension	Total Annual Cost	
Average Employee Cost per Hour	A. Average Employee Cost Per Hour			
	1. Average Annual Salary	\$36,795		
	2. Fringe Benefits	31.01%		
	3. Hours worked per year	2,080		
	Average Employee Cost/Hour =	\$23.18		
Current Document Management Costs	A. Estimated cost of copying, routing and filing all current HR/Payroll forms			
	1. Average copying time (minutes)	5		
	2. Employee labor cost per form	\$ 1.931		
		Total annual cost for copying, routing and filing forms	\$ 3,508,183	
	B. Estimated cost for retrieving HR/Payroll forms			
	1. Average form retrieval time in minutes	30		
	2. Cost to retrieve a single form	\$ 11.59		
	3. Percentage of forms retrieved (e.g., for purchasing info, audits)	5%		
		Total annual cost of retrieving forms	\$ 1,052,455	
	C. Estimated cost for locating missing or misfiled HR/Payroll forms			
	1. Avg form recovery time in minutes	45		
	2. Cost to recover a missing or misplaced form	\$ 17.38		
3. Percentage of missing files that need to be retrieved	7%			
	Total annual cost of locating missing or misplaced forms	\$ 2,210,155		
Total	Total Current Process Costs =		\$ 6,770,793	

CALCULATION OF NET CASH SAVINGS						
Savings Type	Description	Range of Potential Cash Savings				
		Conservative	Likely	Aggressive		
Net Process Savings	Reduction in Agency documentation time and expense		20% added time	10% added time	Estimated Savings	
	1	Minutes required to copy documents	Not Required	\$ 2,806,546	\$ 3,157,364	\$ 3,508,183
	2	Minutes required to retrieve docs	5	701,637	789,341	877,046
	3	Minutes required to Find Missing Files	15	1,178,749	1,326,093	1,473,437
Total Cost Savings	Total Annual Savings		\$ 4,686,932	\$ 5,272,799	\$ 5,858,665	

FIVE-YEAR PROJECTION OF ESTIMATED COST SAVINGS						
Savings Range	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	Totals
Percentage of Agencies Implemented	0.00%	0.00%	0.00%	58.05%	100.00%	158.05%
Conservative	\$ -	\$ -	\$ -	\$ 2,720,643	\$ 4,686,932	\$ 7,407,575
Likely	\$ -	\$ -	\$ -	\$ 3,060,724	\$ 5,272,799	\$ 8,333,522
Aggressive	\$ -	\$ -	\$ -	\$ 3,400,804	\$ 5,858,665	\$ 9,259,469

NOTES:

- Performance benchmarks for retrieving a file or locating a missing file based on survey by International Records Management Council (2005)
- Projected agency-level time savings will result from automated records filing and rapid electronic access to records currently maintained in common HR/Payroll forms

State of South Carolina
Enterprise Information SystemExhibit A.3-7
HUMAN RESOURCE/PAYROLL SAVINGS
5-Year Cost Savings SummaryBusiness Case Study
2008 Review & Update

HR/PAYROLL PROCESS AREA		Range of Savings (FY 2008 - FY 2012)		
		Conservative	Likely	Aggressive
1	Processing Payroll	\$ 4,891,139	\$ 5,576,811	\$ 6,262,484
2	Travel Reimbursement	1,514,260	1,909,878	2,501,031
3	Maintaining Employee Records	9,634,194	12,717,666	15,801,138
4	Leave Administration	1,295,835	1,495,195	1,694,554
5	HR/Payroll Document Management	7,407,575	8,333,522	9,259,469
Totals		\$ 24,743,004	\$ 30,033,073	\$ 35,518,676

HR/PAYROLL PROCESS AREA		Range of Savings (FY 2003-FY 2008)		
		Conservative	Likely	Aggressive
1	Processing Payroll	\$ 4,679,444	\$ 5,505,228	\$ 6,331,013
2	Travel Reimbursement	1,139,699	1,424,623	1,709,548
3	Maintaining Employee Records	10,121,154	16,350,272	19,464,832
4	Leave Administration	6,166,701	7,115,424	8,064,148
5	HR/Payroll Document Management	23,098,138	26,397,872	29,697,606
Totals		\$ 45,205,136	\$ 56,793,421	\$ 65,267,146

Difference between 2002 BC & 2008 Update **\$ (20,462,131)** **\$ (26,760,348)** **\$ (29,748,470)**

Appendix B: ROI Analysis

This appendix will Hyperlink to various working documents related to ROI calculations in the form of Excel spreadsheets. To insure proper linking via computer, it is important that the Spreadsheets referenced are in the same subdirectory as the primary document. For printed business case, printouts of the working documents are available; however, these will not show the formulas used and internal linking used to arrive at Return on Investment, including Net Present Value analysis and Internal Rate of Return analysis.

[B.1 ROI Analysis 2008](#)

Within the ROI Analysis Workbook, there are a number of worksheets (Excel Spreadsheets) that are internally and externally linked to provide a full picture of the ROI calculations. These worksheets are identified as tabs as follows:

- **[B.1-1 08 Process Savings:](#)** Annual & Cumulative Process Savings summary. This spreadsheet is linked to Appendix A worksheets. Also contained in this worksheet is a table of values that define process savings at various levels of realization. These levels were used in other NPV and IRR tabs within the workbook.
- **[B.1-2.1 NPV 25%:](#)** Conservative & Likely Scenarios at 25% Benefits Realization Level
- **[B.1-2.2 NPV 50%:](#)** Conservative & Likely Scenarios at 50% Benefits Realization Level
- **[B.1-2.3 NPV 75%:](#)** Conservative & Likely Scenarios at 75% Benefits Realization Level
- **[B.1-2.4 NPV 100%:](#)** Conservative & Likely Scenarios at 100% Benefits Realization
- **[B.1-3.1 IRR 25%:](#)** Conservative & Likely Scenarios at 25% Benefits Realization Level
- **[B.1-3.2 IRR 50%:](#)** Conservative & Likely Scenarios at 50% Benefits Realization Level
- **[B.1-3.3 IRR 75%:](#)** Conservative & Likely Scenarios at 75% Benefits Realization Level
- **[B.1-3.4 IRR 100%:](#)** Conservative & Likely Scenarios at 100% Benefits Realization
- **[B.1-4 08 Legacy Cost Avoidance Costs:](#)** This tab identifies cost avoidance savings that will be realized during and after full implementation of SCEIS. The numbers contained in this tab are used in NPV and IRR calculation.
- **[B.1-5 SCEIS System Maintenance & Support:](#)** The costs contained in this workbook are captured in the Implementation costs workbook as Operational Costs.

Each of the following worksheets contains two ROI analyses, one based on a “Conservative” benefits scenario and one based on a “Likely” benefits scenario. Within the base document, only conservative benefits were used; however, it is possible for the State to experience benefits at the higher level of expectation with proper management focus.

[B.2 Compensation Calculator v2:](#) Extract from OHR website with adjustments for Fringe Calculations

Appendix C: Acronyms

Acronym	Definition
ASAP	Accelerated SAP
BARS	Basic Agency Reporting System
B&CB	Budget and Control Board
CAFR	Comprehensive Annual Financial Report
CBA	Cost-Benefit Analysis
CIO	Chief Information Office
DSIT	Division of State Information Technology
ERP	Enterprise Resource Planning
ESS	Employee Self Service
FI	SAP Finance application
FY	Fiscal Year
GAAP	Generally Accepted Accounting Principles
GAFRS	Government Accounting & Financial Reporting System
HR	SAP Human Resources
HRIS	Human Resource Information System
IT	Information Technology
IV&V	Independent Verification and Validation
IRR	Internal Rate of Return
ITMO	Information Management Technology Office (Consolidated with MMO)
LCCE	Life Cycle Cost Estimate
MM	SAP Materials Management application
MMO	Materials Management Office (now includes ITMO)
MOU	Memorandum of Understanding
NPV	Net Present Value
O&M	Operations and Maintenance
OHR	Office of Human Resources
OSA	Office of State Auditor
PMO	Project Management Office
PR	SAP Payroll
RFQ	Request for Qualifications
ROI	Return on Investment
SAIC	Science Applications International Corporation
SCEIS	South Carolina Enterprise Information System
SSN	Social Security Number
STARS	Statewide Accounting and Reporting System
STO	State Treasurer Office

Appendix D: Survey Results

Summary

In 2002, 74 agencies were asked to complete a survey for the Business Case. The survey results were used to estimate the benefits for the original 2003 South Carolina Enterprise Information System (SCEIS) Business Case Study. On November 4, 2008, 70 agencies were requested to participate in a new study to Review & Update the results from the 2003 Business Case.

The purpose of the survey was two-fold. Since some SCEIS functionality has been deployed at 17 agencies, some actual agency results can be used to estimate potential savings for the remaining state agencies. Unfortunately, most of the already implemented agencies were small and had not been on line with SCEIS long enough to provide adequate savings analysis. Secondly, the new survey data establishes a new baseline for re-estimating benefits. The following instructions were provided in the Excel spreadsheet sent to each responding agency:

Below, you will find a set of questions designed to help us perform a Review and Update of the SCEIS Business Case Study for the State originally completed in 2003. If you responded to the 2002 survey, you will find your response(s) next to a line identified as FY2002. In the line identified as FY2008, Please provide an up-to-date value in the cell(s) adjacent to FY2008. If the data requested is not easily attainable, please provide a reasonable estimate.

The survey was comprised of three main categories

- Finance & Accounting
- Procurement
- Human Resources & Payroll

This Appendix provides a summary of the survey data received. This data was used to prepare much of the benefit analysis in this document.

Finance:**Preparing the State's Comprehensive Annual Financial Report**

Q. Enter the total number of person-days that your agency spends preparing, reviewing, correcting and submitting completed closing packages and other related year-end information required by the Comptroller General to prepare South Carolina's annual CAFR.

Figure E-1 below summarizes the survey responses. Of the 57 state agencies that responded, eight state agencies had implemented SCEIS and had comparative data between 2002 and 2008. The data indicates that SCEIS implementation has reduced the time to prepare the Comprehensive Annual Financial Report (CAFR). The following summarizes the data used to estimate the CAFR benefit:

- 1) Number of person-hours to prepare the CAFR totals 11,302 for respondents
 - a) Based on 11,302 person-hours for respondents, 181 person-hours (1.6%) are assumed for non-respondents, totaling 11,483 person-hours.
- 2) Improvement rate is 54 percent from that reported in 2002.

Figure E-1: CAFR Preparation

CAFR REPORTING	ALL REPORTING AGENCIES			LIVE SCEIS AGENCIES (at end of FY2008)			
	FY2002 (Person Days)	FY2008 (Person Days)	FY2008 (Person Hrs)	FY2008 (Person Days)	FY2008 (Person Days)	% Chg	Weighted % Chg
Agency Count:	38	52		8	8		
Total:	1193	1413	11302	107	61	43%	54%
Average:	31	27		13	8		
Non-Reporting Agencies*:			181				
Total used for Benefits Calculation:			11483				

*1.6% of agencies did not report in 2008

Monthly Reconciliations (Grants Balances, Cash Balances, Appropriations Balances)

Separate survey questions relate to the three reconciliation functions. The questions are listed below followed by a summation of the responses.

Q. Enter the total number of person-days that your agency spends each month reconciling grant/project account balances.

Q. Enter the total number of person-days that your agency spends each month reconciling cash balances.

Q. Enter the total number of person-days that your agency spends each month reconciling appropriations balances.

Figure E-2 below summarizes the survey responses. Of the state agencies that responded, eight state agencies had implemented SCEIS and had comparative data between 2002 and 2008. To recap the data used to estimate the monthly reconciliations benefit:

- 1) Number of person-days to reconcile *grant/project account* balances totals 10,699 hours annually for respondents. An additional 171 person-hours (1.6%) are assumed for non-respondents, totaling 10,870 person-hours.
- 2) Number of person-days to reconcile *cash balances* totals 20,347 hours annually for respondents. An additional 326 person-hours (1.6%) are assumed for non-respondents, totaling 20,673 person-hours.
- 3) Number of person-days to reconcile *appropriations* balances totals 11,714 hours annually for respondents. An additional 187 person-hours (1.6%) are assumed for non-respondents, totaling 11,901 person-hours.

Figure E-2: Monthly Reconciliations

RECONCILIATIONS: GRANT/PROJECT BALANCES	ALL REPORTING AGENCIES			LIVE SCEIS AGENCIES (at end of FY2008)							
	FY2002 Days/Mo.	Person Days/Mo.	FY2008 Days/Mo.	Person Days/Mo.	FY2008 Person Hrs/Yr.	FY2002 Days/Mo.	Person Days/Mo.	FY2008 Days/Mo.	Person Days/Mo.	% Chg	Weighted % Chg
Agency Count:	40		50			8		8			
Total:	80		111		10699	6		8		-33%	33%
Non-Reporting Agencies ¹ :					171						
Subtotal used for Benefits Calculation:					10870						

RECONCILIATION: CASH BALANCES	ALL REPORTING AGENCIES			LIVE SCEIS AGENCIES (at end of FY2008)							
	FY2002 Days/Mo.	Person Days/Mo.	FY2008 Days/Mo.	Person Days/Mo.	FY2008 Person Hrs/Yr.	FY2002 Days/Mo.	Person Days/Mo.	FY2008 Days/Mo.	Person Days/Mo.	% Chg	Weighted % Chg
Agency Count:	40		51			8		8			
Total:	133		212		20347	12.8		13		-2%	64%
Non-Reporting Agencies ¹ :					326						
Subtotal used for Benefits Calculation:					20673						

RECONCILIATION: CASH BALANCES	ALL REPORTING AGENCIES			LIVE SCEIS AGENCIES (at end of FY2008)							
	FY2002 Days/Mo.	Person Days/Mo.	FY2008 Days/Mo.	Person Days/Mo.	FY2008 Person Hrs/Yr.	FY2002 Days/Mo.	Person Days/Mo.	FY2008 Days/Mo.	Person Days/Mo.	% Chg	Weighted % Chg
Agency Count:	39		52			8		8			
Total:	96		122		11714	12		9		24%	76%
Non-Reporting Agencies ¹ :					187						
Subtotal used for Benefits Calculation:					11901						
Total used for Benefits Calculation:					43444	Estimated Reduction²		65%			

¹1.6% of agencies did not report in 2008

²The % reduction estimate for monthly reconciliation was based on positive experiences of "live" SCEIS agencies that had comparative data for both 2002 and 2008. Thus the adjusted weighted average omitted agencies with zero or negative percentages.

Accounts Payable

The following survey questions provide the basis for calculating the cost of processes accounts payable invoices.

Q. What is the total number of vendor invoices that your agency processed to A/P in FY2008? (Do not include employee travel reimbursements in this total.)

Q. Enter the total number of person-hours that your agency typically spends on reviewing, auditing and final approval of a single vendor invoice and processing a voucher for payment in A/P. Please include time required to validate the invoice and perform a 3-way or 2-way match with PO's and receipts. (Add hours for all individuals involved in this process.)

Figure E-3 below summarizes the survey responses. The following recaps the data used to estimate the annual benefit for accounts payable. (Note: respondents reporting data that was questionable or well outside of norms were removed (or if agencies provided invoices but not processing times, etc.).

- 1) Of the 51 state agencies that responded, after making the noted eliminations, the number of invoices processed was 1,463,800. Based on the (adjusted) 1,463,800 invoices for respondents, an additional 23,421 invoices (1.6%) are assumed for non-respondents, totaling 1,487,221 invoices.
- 2) Of the 51 state agencies that responded, with the noted adjustments, the average hours spent processing an invoice is approximately 1.08 hours.

Figure E-3: Accounts Payable Invoices

ACCOUNTS PAYABLE INVOICES	ALL REPORTING AGENCIES	
	FY2002 (Person Days)	FY2008 (Person Days)
Agency Count:	39	51
Total:	1,142,068	1,463,800
Non-Reporting Agencies*:		23,421
Total used for Benefits Calculation:		1,487,221

*1.6% of agencies did not report in 2008

TIME & COST TO PROCESS ACCOUNTS PAYABLE INVOICES	ALL REPORTING AGENCIES - FY2008			
	FY2008 (Invoices Processed)	FY2008 (Invoice Process Cost)	FY2008 (Avg. Cost per Invoice)	FY2008 (Processing Time per Invoice in Hrs.)
Total:	1,463,800	\$ 41,256,813	\$ 28.18	1.08

Purchasing:**Creating a Purchase Order**

The following survey questions provide the basis for calculating the cost of processes accounts payable invoices.

Q. What is the total number of PO's originating in your agency's central office from FY 08 (actual or estimated)?

Q. What is the total number of PO's originating in your agency's remote offices from FY 08 (actual or estimated)?

Q. Enter the number of person-hours required to create a typical PO. (include any typical turnaround time to complete the process). Original response was in days. Please enter hours, not days.

Figure E-, below, summarizes the survey responses. The following recaps the data used to estimate the annual benefit for creating purchase orders.

- 1) Of the 48 state agencies that responded, the respondents processed 262,407 PO's. Based on 262,407 POs for respondents, 4,199 POs (1.6 percent) is calculated for non-respondents, totaling 266,606 PO's.
- 2) Based on the 47 agencies that responded to the number of person-hours required to create a typical PO, the number of POs was multiplied by person-hours to calculate the 1,481,234 total hours to process PO's. Based on 1,481,234 total hours for respondents, 23700 (1.6 percent) is calculated for non-respondents, totaling 1,504,934 PO's.
- 3) Based on 1,481,234 hours and 262,407 POs, the average time to process a PO is calculated as 5.64 person-hours.*
- 4) Agencies that had implemented SCEIS and had comparative 2002 and 2008 data averaged 50 percent reductions. Based on each agency's processing time, the following schedule was applied to each agency.

Figure E-4: Processing Purchase Orders

PURCHASE ORDER PROCESSING	FY2002			FY2008				
	FY2002 Central Office POs	FY2002 Remote Office POs	Total Purchase Orders	FY2008 Central Office POs	FY2008 Remote Office POs	Total Purchase Orders	Processing Time Per PO (Hrs.)	Total Hours
Agency Count:	38	37		48	47		47	
Total:	122,640	147,527	270,167	111,545	150,862	262,407	5.64	1,481,234
Average:	3,227	3,987		2,324	3,210			
Agencies*:						4,199		23,700
Total used for Benefits Calculation:						266,606	5.64	1,504,934

*1.6% of agencies did not report in 2008

Inventory Management

Q. The following group of questions refer to inventory that is maintained by your agency. This information was not gathered during the 2002 Business Case study. Estimated totals were projected based on data retrieved from SCDMH. If you do not have any inventory stores, please enter "0" for answers. Do not include any procured services such as maintenance or software development, or pre-authorized expenditures such as utilities. In order to arrive at a valid savings estimate for inclusion in the business case update with respect to inventory management, the following data is required:

- *Enter # of line items maintained in all agency storage areas. Please include both inventory accounted for as an asset on your balance sheet plus inventory that has been expensed when purchased, but still in storage.*
- *Enter the value of inventory on hand.*
- *Enter percent of obsolete inventory on hand.*
- *Enter the number of inventory turns per year.*

Figure E-55 below summarizes the inventory estimates used for the analysis. The following recaps the data used to estimate the annual benefit for managing inventories.

- 1) Current inventory balances total \$117,293,207 based on agency responses
- 2) Obsolete inventory is estimated at 1.96 percent of total inventory balances based on agency responses.
- 3) The state agency average inventory turnover rate is estimated at 2.42.
 - a) One state agency (J04) did not provide an estimated turnover rate. Since their inventory balance (\$69 million) is 60% of total inventory balance, any turnover assumption would skew results. For that reason, estimates based on J04 inventories were excluded from estimates.
- 4) Cumulative annual inventories are estimated to total \$ 114,996,215 (excluding J04).

Figure E-5: Inventory Survey Data

INVENTORY MANAGEMENT	FY2008 INVENTORY SURVEY DATA					
	Inventory Line Items	Inventory Value	% Obsolete Inventory	Obsolete Inventory Value	Inventory Turns	Inventory
Agency Count:	18	18	17	17	13	18
Total:	87,311	\$ 117,293,207	1.96%	\$ 2,296,992	2.42	\$ 114,996,215

Maintaining Vendor Information Files

Q. Enter the total number of person-hours per year that your agency spends maintaining vendor files.

Figure E-66 below summarizes the survey responses. Of the 48 state agencies that responded, seven state agencies had implemented SCEIS and had comparative data between 2002 and 2008. The data indicates that SCEIS implementation has reduced the time to prepare and manage vendor files.

Figure E-, below, summarizes the survey responses. The following recaps the data used to estimate the annual benefit for maintaining vendor files.

- 1) Of the 48 state agencies that responded, the respondents report that they spend 8,665 person-hours maintaining vendor files. Based on 8,665 person-hours for respondents, 139 person-hours (1.6 percent) is calculated for non-respondents, totaling 8,803 person-hours.
- 2) The average improvement rate among state agencies that had already implemented SCEIS totaled 82 percent.

Figure E-6: Vendor File Survey Data

VENDOR FILE MAINTENANCE	FY2002	FY2008	FY2008 Live SCEIS Agencies	
	Person Hours	Person Hours	Person Hours	Improvement % for Live SCEIS Agencies
Agency Count:	38	48	7	
Total:	9236	8665	490	
Non-Reporting Agencies*:		139		
Total used for Benefits Calculation:		8804		82%

*1.6% of agencies did not report in 2008

Human Resources & Payroll Processing:

The series of questions for HR/PR included 5 major processes: Payroll Processing, Travel Reimbursement, Leave Administration, Employee Records Maintenance and Benefits Administration.

Q. What is the total number of FTE's (or fractional portion) involved with Human Resources and/or Payroll within your agency? This number will be automatically calculated based on questions 1a - 1d)

Q. Enter the total number of Leave Request forms that your agency processes annually.

Q. Enter the total number of Change Employee Personnel Records forms processed annually by your agency.

Q. Enter the total number of Employee Benefits Change Request forms processed annually by your agency including changes in insurance coverage, beneficiary, etc.

Figure E-7, below, summarizes the survey responses. The following recaps the data used to estimate the annual benefit for HR/PR processes.

- 1) Of the 48 state agencies that responded, the respondents report that they spend 430, 675 person-hours on HR/PR processes.
- 2) Additionally, there are 462.2 FTEs across the state that are dedicated to 5 major HR/PR processes listed at the beginning of this section.

Figure E-7: Human Resources & Payroll Costs

HR/PR PROCESS COSTS	FY2008 - Agency Costs			FY2008 - Central Costs			Totals
	Agency Person Hrs (Annually)	Hourly Pay Rate	Total Agency Costs (Annually)	Central FTEs (CG, Treas.)	Annual Salary (Including Fringe)	Total Central Costs (Annually)	Total Annual Costs
Payroll Processing	252,096	\$ 23.18	\$ 5,842,380	12	\$48,204	\$578,453	\$6,420,833
Travel Reimbursement	124,150	\$ 23.18	\$ 2,877,192	-	-	-	\$2,877,192
Leave Administration	54,429	\$ 23.18	\$ 1,261,389	-	-	-	\$1,261,389
Employee Records/Benefit Admin.*	-	-	-	450.2	\$48,204	\$21,703,593	\$21,703,593
Totals:	430,675			462.2			

*This total is comprised of 12 "Central" FTEs plus 450.2 FTEs at the agency level

Document Management

The following general question was asked for the three major process areas: 1) Finance & Accounting, 2) Purchasing & Inventory Management, 3) Human Resources & Payroll. The responses provide the basis for calculating the cost of document management.

Figure E-3 summarizes the annual costs for document management.

Figure E-3: Document Management

DOCUMENT MANAGEMENT (ANNUAL COSTS)	ALL REPORTING AGENCIES - FY2008			
	Finance & Accounting	Purchasing & Inventory Management	Human Resources & Payroll	Total Annual Costs (By Activity)
Total Number of Original Forms	1,735,770	477,656	1,816,518	
Number of Additional Copies	5,105,207	836,602	4,651,444	
Total of Forms/Copies Annually	6,840,977	1,314,258	6,467,962	
Cost of Copying/Routing/Filing	\$ 3,352,238	\$ 2,538,184	\$ 3,508,183	\$ 9,398,605
Cost for Retrieving forms	\$ 2,011,343	\$ 761,455	\$ 1,052,455	\$ 3,825,253
Cost for Locating Missing forms	\$ 603,403	\$ 152,291	\$ 2,210,155	\$ 2,965,849
Totals by Functional Area:	\$ 5,966,984	\$ 3,451,930	\$ 6,770,793	\$ 16,189,707
Total used for Benefits Calculation:				\$ 16,189,707

Appendix E: Key Contributors

Name	Title	Organization	Area of Contribution
Curtis Loftis	Chairman	SCEIS Executive Oversight Committee	Oversight and policy
Pat O'Cain	DSIT Deputy Director & SCEIS Program Director	B&CB, Division of State Information Technology	SCEIS cost estimates / Project Schedule
Chris Shuman	SCEIS Program Director	B&CB, Division of State Information Technology	SCEIS Implementation Schedule
Nathan Kaminski	Chief of Staff, Office of the Comptroller General	Comptroller General	Financial Requirements & Interface to Legislature
Frank Fusco	Executive Director, State Budget & Control Board	Budget & Control Board	Project Sponsor
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CBA Team			
John LoPresti	SAP Technical Team Lead, IV&V & Business Case Development	SAIC	CBA Team Leader & Project Director
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