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UCSB Audit and Advisory Services

Internal Audit Report

Student Information Systems Replacement Project Progress

May 15, 2012

Performed by:
Sam Hartline, Principal Auditor

Approved by:
Robert Tarsia, Acting Director

Report No. 08-12-0007

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University of California, Santa Barbara

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May 15, 2012

To: Vice Chancellor Michael Young
        Student Affairs

Re: **Student Information Systems Replacement - Project Progress**
        Audit Report No. 08-12-0007

As part of the 2011-12 annual audit plan, Audit and Advisory Services conducted a progress review of the University of California, Santa Barbara (UCSB) student information systems (SIS) replacement project. Enclosed is the audit report detailing the results of our review.

The primary purpose of this limited scope review was to conduct a progress assessment of the systems conversion phase of the SIS replacement project, primarily to examine whether reported progress and cost information is accurate. The scope of the review was limited to activities and information related to the SIS conversion project, from the beginning of the conversion phase in February 2011, through April 2012.

Our review found that project progress and costs have been accurately reported, and sufficient processes for tracking, monitoring, and reporting project progress and costs appeared to be in place. Additionally, we did not find project management practices in place at Student Information Systems and Technology (SIST) that were inconsistent with the requirements of UC Business and Finance Bulletin IS-10: *Systems Development and Maintenance Standards*.

We have included a copy of our detailed observations; no response to this report is necessary. The cooperation and assistance provided by SIST and Division of Student Affairs personnel during the review was sincerely appreciated. If you have any questions, please feel free to contact me.

Respectfully submitted,

Robert Tarsia
Acting Director
Audit and Advisory Services

Enclosure

cc: Chancellor Henry Yang
    Associate Vice Chancellor Ron Cortez
    UCSB Audit Committee
    Senior Vice President and Chief Compliance and Audit Officer Sheryl Vacca
    Executive Director of Resource Planning, Information Technology, and Sustainability Bill McTague
    SIST Director Lubo Bojoliv
    SIST Database Management and QA Services Manager Diana Antova

PURPOSE

The primary purpose of this limited scope review was to conduct a progress assessment of the University of California, Santa Barbara (UCSB) student information systems (SIS) replacement project, and examine whether reported progress and cost information is accurate.

SCOPE, OBJECTIVES AND METHODOLOGY

The scope of the review was limited to activities and information related to the Student Affairs SIS replacement project, from the beginning of the systems conversion phase in February 2011, through April 2012.

Audit objectives were developed for review of selected SIS project management processes, including practices for tracking and reporting project progress and costs. To accomplish the objectives, we gained an understanding of Student Information Systems and Technology (SIST) project management efforts and the status and progress to date for the SIS replacement project. We evaluated the processes established for tracking and reporting project progress and costs, and assessed consistency with applicable University of California (UC) policies. We also performed detailed testing to determine whether reported vendor and other costs were accurate. Our work included discussions with SIST and Student Affairs personnel, review of project reports, documentation, and other information, and attendance by the auditor at several of the project team's weekly status meetings. We did not perform work to determine whether the vendors engaged for the project have complied with the performance or billing terms of their contracts with UCSB.

BACKGROUND

Replacement of the legacy student Registration and Admissions systems has been planned for a number of years. In early 2007, an SIS Strategic Planning group was formed to analyze the risks associated with the aging core student systems and suggest alternatives for replacement. In 2008, a subsequent decision to replace the SIS with a new, externally-purchased system, was abandoned after determining that it would be cost prohibitive to fully adapt/integrate the current SIS structure with the selected system platform. Management subsequently decided to convert the systems to a modern platform, utilizing external vendors along with division technical personnel. The current Student Affairs SIS replacement project involves the conversion of 18 student information systems used by the Student Affairs Division, academic and other campus administrative offices, and current and prospective UCSB students. The project is divided into two phases: (1) systems conversion phase, and (2) systems modernization phase. Table 1 outlines the current project timetable.

The systems are being converted from an outmoded mainframe platform that primarily utilizes ADABAS/Natural programming, to a Microsoft.NET/SQL server platform. One of the primary drivers for the project is the need to migrate the systems due to the obsolescence and planned replacement of the mainframe platform.

The major student systems included in the conversion phase of the project are the:

- SREG/SRTB/SR25 and Student Access and Reporting (STAR) Office of the Registrar systems.
- UADM/ADMS/STAB/CTAB systems used by Admissions.

- FAID/FAST/SFSO systems used by Financial Aid.
- GSFR/GDIV systems used by the Graduate Division.
- UCSB Security (USEC) system.
- CRES curriculum system.
- Student System Department Access (SSDA) system.
- IRES system used by Institutional Research and Planning.

The vendor selection, proof-of-concept, and contracting processes were conducted during the period of March 2010 through January 2011. The conversion phase began in early February 2011 and is currently slated to be completed, including systems testing, training, and production cut-over, by the "go-live" date of August 27, 2012. The production cut-over will require that all converted student systems be taken offline for four days; two of the four days are currently scheduled over a weekend. The modernization phase of the project will predominantly be performed by SIST, beginning shortly after the conversion phase and extending through fiscal year 2014-15.

Table 1	SIS Replacement Project Timetable for Key Milestones/Tasks [1]						
Milestone/Task	Initial Projected Start Date	Initial Projected End Date	Projected Start Date at 4/11/12	Projected End Date at 4/11/12	Actual Start Date	Actual End Date	% Complete at 4/11/12
Project Kick-Off	02/14/11	02/25/11	N/A	N/A	02/14/11	02/25/11	100%
Database Structure Conversion	04/01/11	05/17/11	N/A	N/A	05/6/11	05/23/11	100%
Data Migration	05/18/11	06/03/11	N/A	N/A	05/23/11	08/31/11	100%
Test Scripts/Cases Development	04/01/11	08/11/11	N/A	N/A	05/06/11	03/12/12	100%
Application Conversion	06/06/11	06/03/12	08/26/11	06/15/12	06/20/11	In Progress	24%
Application Functional Testing (Vendor)	06/27/11	03/19/12	09/05/11	06/18/12	08/15/11	In Progress	32%
Application Functional Testing (UCSB)	07/12/11	04/02/12	09/13/11	06/21/12	9/13/11	In Progress	25%
Integration/ Performance Testing	07/26/11	04/16/12	06/18/12	07/27/12	N/A	N/A	N/A
UCSB Acceptance Testing	03/27/11	05/21/12	07/09/12	08/10/12	N/A	N/A	N/A
Production Cut-Over	05/31/12	06/02/12	08/23/12	08/26/12	N/A	N/A	N/A
Go Live Date (Conversion Phase)	06/04/12	06/04/12	08/27/12	08/27/12	N/A	N/A	N/A

Source: Auditor Analysis of SIS Replacement Project Plans and Weekly Project Status Reports through April 11, 2012.

[1] The projected dates listed for those tasks in progress or not started are based on internal estimates that may change.

A broad-based, 17-member SIS Steering Committee is responsible for administrative oversight of the project. The committee includes representatives from Student Affairs administration, management and technical representatives from Student Affairs stakeholder departments, SIST management and project managers, the CIO and CISO from the Office of Information Systems and Technology (OIST), Graduate Division management, the Associate Director of Controls, and a faculty member. The SIST department is responsible for hands-on management of all aspects of the project, and SIST project managers are assigned to the SIS Implementation and Security Modernization Committees, the two primary project workgroups. Other project work groups include the Mainframe Conversion, Application Integration, Security Integration, Systems Engineering, User Interface/Standards, Vendor Coordination, and Quality Assurance committees. External IT service vendors are being utilized for much of the systems conversion process. SIST, and other Student Affairs personnel, are also responsible for certain system conversion tasks, as well as systems application functional, performance, and client acceptance testing; data migration; and the production cutover process.

Table 2	SIS Replacement Project Costs				
Cost Category	**FY 2010/11** (Actual)	**FY 2011/12** (Estimated)	**FY 2012/13** (Estimated)	**FY 2013/14** (Estimated)	**FY 2014/15** (Estimated)
External (Out of Pocket) Costs					
Planning	$ 40,000	$ 0	$ 20,000	$ 20,000	$ 0
Infrastructure	153,588	250,000	250,000	250,000	100,000
Licensing	27,379	97,019	153,028	210,047	333,076
IT Service Vendors	660,701	1,010,000	350,000	0	0
Additional Staff/Backfills	268,291	645,622	819,991	653,537	666,228
Travel/Training	6,735	20,000	25,000	20,000	10,000
Supplies/Materials	8,454	5,000	10,000	10,000	10,000
Contingency (10-20%)	0	101,382	162,802	174,538	223,861
Subtotals (External Costs)	**$ 1,165,148**	**$ 2,129,023**	**$ 1,790,821**	**$ 1,338,122**	**$ 1,343,165**
Total External (Out of Pocket) Costs:					**$ 7,766,279**
Internal (Student Affairs Admin/Technical Staff) Costs					
Administrative and Project Management	$ 48,000	$ 51,000	$ 75,000	$ 75,000	$ 75,000
Infrastructure/Network Architects/Engineers	30,250	42,900	$ 195,000	150,000	115,000
Software/Integration & Database Developers	195,000	401,940	888,000	848,000	816,000
Quality Assurance & Functional Experts	53,463	105,525	490,000	469,000	402,500
Benefits (25%)	81,678	150,341	412,000	385,500	352,125
Subtotals (Internal Costs)	**$ 408,391**	**$ 751,706**	**$ 2,060,000**	**$ 1,927,500**	**$ 1,760,625**
[1] Total Internal (Admin/IT Staff) Costs:					**$ 6,908,222**
Project Costs Grand Total:					**$ 14,674,501**

Source: Auditor Analysis of the SIS Replacement Project budget as of April 12, 2012.

[1] Internal Admin/IT costs are based on estimates consistent with University benchmarking practices.

Table 2 summarizes projected costs over the life of the project. SIS Steering Committee responsibilities include establishment, review, and approval of the project budget and modifications, and any significant changes in project status and use of other project resources. The Implementation and Security Modernization workgroups meet weekly and, along with information and input from meetings of other project managers and work groups, review project status in order to determine significant issues that will require modifications to the committed resources. Weekly meetings are generally held by the Student Affairs Executive Director for Resource Planning, Information Technology, and Sustainability, the SIST Director, and other project managers, and include review of project status updates, actual costs to date, and any proposed budgetary modifications. All project resource modifications and significant changes in status require review and approval of the Steering Committee. The Executive Director keeps the Vice Chancellor for Student Affairs apprised of the project's status and other significant matters on an ongoing basis.

Student Affairs procured the services of two professional IT service vendors, Ateras, contracted specifically for the SIS replacement project, and SYZYGY, contracted through the UC Office of the President for systemwide IT services. Ateras is the vendor performing the conversion of the systems to the Microsoft.NET/SQL server platform, and providing an application programming interface between the converted code and the existing externally interfaced systems. SYZYGY is assisting SIST in the creation and ongoing operation of the systems conversion logical partitioning, and the creation of scripts and processes necessary to provide Ateras with file layouts and data and source code through the duration of the project.

UC Business and Finance Bulletin IS-10: *Systems Development and Maintenance Standards*, establishes UC policy and standards for developing and maintaining computer applications for administrative purposes. The standards apply to large, complex applications that are essential to the operations of the campus. The guidelines indicate that the standards generally apply to the development of systems that are estimated to take more than one year to develop and implement, or systems that cost greater than $150,000.

SUMMARY OPINION

Our review found that project progress and costs have been accurately reported, and sufficient processes for tracking, monitoring, and reporting project progress and costs appeared to be in place. Additionally, we did not find project management practices in place at SIST that were inconsistent with the requirements of UC Business and Finance Bulletin IS-10.

Audit observations are detailed in the remainder of the audit report.

DETAILED OBSERVATIONS AND MANAGEMENT CORRECTIVE ACTIONS

A.   Project Plan and Progress Reporting

The audit found that there is an approved, adequately detailed, and periodically updated SIS replacement project plan. The project plan includes a clear timetable and schedule indicating all major project tasks, responsible party (i.e., UCSB or vendor), project interdependencies, and duration of the task or activity. The plan appears to provide an appropriate basis for tracking, monitoring, and reporting project progress, and we found that project reporting against this plan has been accurate.

The project began in early February 2011, with June 4, 2012, established as the initial projected completion, or "go-live" date for the conversion phase of the project. As of July 30, 2011, the projected completion date had been moved forward to July 6, 2012, and by March 2012, the completion date was projected to be September 18, 2012. In April 2012, the project completion date had been revised to August 27, 2012, with a vendor systems conversion and testing completion date planned for June 18, 2012.

There are various reasons for the fluctuation in project completion dates, including vendor employee retention issues. Other reasons for the delay are the shortage of technical personnel in the job market with sufficient expertise to fill employee vacancies with the vendor and at SIST, the addition of database structure improvement tasks to the project, the complexity of certain applications to be converted, and application interdependencies and systems integration requirements that were not entirely apparent until after the project conversion work began. SIST management remains confident in the vendor's expertise and ability to deliver.

B.   Project Budget and Cost Reporting

SIS replacement project external and internal costs are projected to total approximately $14.7 million over the life of the project. The SIS replacement project budget appears to be complete and adequately detailed, and reporting of IT service vendor costs incurred to date appeared accurate (see Table 2 for the projected costs over the life of the project). Overall, the project budget monitoring, modification, and approval processes in place at Student Affairs, as detailed by management, appeared to be providing an appropriate level of authorization, oversight, and resource control.

External "out-of-pocket" costs, including IT service vendor, infrastructure, licensing/ training, additional staff/backfills, and supplies/materials expenses, were estimated to be $7.8 million through fiscal year 2014-15. This figure includes an approximate 10% cost contingency estimate of $662,582. Project conversion phase costs for the IT service vendor Ateras, through February 2012, were reviewed and determined to be consistent with the budget and contract documents. Although there was an October 2011 time extension for the Ateras contract, from June 30, 2012, to August 31, 2012, and the addition of two deliverables, it was a no-cost extension and total projected contract costs for Ateras remained at $1.4 million. Actual costs through February 2012 for IT service vendor SYZYGY were $111,650, and budgeted costs through June 2012 for the vendor are $90,300. However, total projected contract costs for the vendor through July 7, 2013, are $200,000.

The project budget also includes a projection of technical staff costs internal to the division (i.e., SIST payroll costs for IT staff assigned to the project). Total employee costs expended on project tasks are estimated to be $6.9 million through the end of the project in fiscal year 2014-2015.