

Enterprise and Advanced Education — Athabasca University Administrative Systems Renewal Project

SUMMARY

Athabasca University plans to replace its aging financial, payroll and student systems with an enterprise resource planning system. In 2011, the university's board approved a budget of \$5.1 million for the administrative systems renewal project. The university started working on the project in 2011 and plans to begin implementing the new computer system modules and business processes in 2013.

What we examined

Our objective for the audit was to perform an early-warning assessment¹ of project controls used to plan for and manage project risks. We assessed whether management had the appropriate risk management systems in place with defined project controls for:

- business change management
- project management
- project governance

We examined the quality and completeness of the design² of project controls (documented plans and procedures) as an early indicator of management's ability to manage the risks of implementing the new system into its operations.

We did not audit the operational effectiveness of these project controls. A weakness in design would be sufficient to determine if its related risk was not being managed appropriately. This approach allowed us to promptly advise the university's board and management. It also allowed us to use our audit resources more effectively.

What we found

The university does not have well-designed project controls to manage the risks to the administrative systems renewal project. The university had not developed clear plans and strategies to ensure the business is ready for the new system. We found the following significant control weaknesses.

¹ Early warning assessment is a review of a project's health in relation to how the project is effectively managing its risks to achieving its stated objectives.

² The evaluation of the design of a control is to ensure that the control, individually or combined with other controls, can effectively prevent or detect exceptions—testing its operating effectiveness means to evaluate if the control is doing what it was designed for.

Business change management risks

The university had not defined its:

- internal controls to support the new system tools and business processes
- new business processes and changes to current processes
- data conversion strategy and conversion plans
- training strategy and end-user training materials
- detailed testing plans and testing scenarios
- human resource staffing strategy and accountability plan for the project teams

In addition, staff assigned to the project continued to be responsible for their regular jobs.

Project management risks

The project planning documents did not:

- clearly define the project management and system development methods being applied
- include the cost of internal business staff, new infrastructure and additional reporting in the project's budget
- clearly define project change management control procedures
- have an organized and well-maintained project file/repository
- have complete implementation criteria for the finance module
- define a gating strategy³ and process to manage the project plans
- define a post-implementation sustainment strategy and plans

Project governance risks




Management responsible for project oversight had not had an independent health check⁴ review of its project management and governance methodologies and practice for the project to determine if their project risk management plans and control activities were adequately designed and working effectively.











Early warning assessment results—project score card

The scorecard that follows summarizes the significance of the control weakness we found. We assessed 10 project risk management systems and assigned indicators to highlight where control deficiencies exist. If the university does not resolve these weaknesses, it may not meet the project's business objectives, timelines and budget, and may experience operational problems with the new system.

³ Gating strategy is an IT project management approach to ensuring critical milestones are met and key project deliverables are completed and approved by governance bodies before the project proceeds to the next phase or steps within the project plan.

⁴ A review by the university's internal audit team was scheduled but not done during this audit.

-  **Red:** Management must make significant improvements immediately.
-  **Yellow:** Project controls require more rigour to ensure project managers and governance boards are alert to potential impacts to the project.
-  **Green:** Control is formalized—a re-assessment may be required later in the project to ensure it continues to effectively mitigate the risk.

Project Risk Management Systems (control design only)	Assessment	Oversight Process
Business readiness and transformation		Business change management
Scope and objectives		Business change management
Staff engagement		Business change management
Internal controls		Business change management
Go/no-go implementation criteria		Business change management
Project management standards		Project management
Systems development standards		Project management
Roles and responsibilities		Project management
Sustainment plan		Project management and project governance
Executive oversight		Project governance

What needs to be done

With the implementation of the finance module approaching, these control weaknesses could impair the university’s ability to achieve its goals. University management must take immediate steps to ensure the project controls are well designed and operating throughout the remaining course of the project.

The university needs to do the following:

- Develop formal business change management plans to ensure that it is effectively prepared for new business processes and changes to its internal controls, and that it provides staff with appropriate training and skills for using new system tools and processes.
- Identify formal project management and systems development methods and standards to ensure that project controls are in place and consistently followed, and that new system tools are properly configured and meet business requirements before implementation.
- Ensure that an independent project review is performed periodically to confirm that project managers have identified project risks early in the project process and have adequately designed and implemented project controls that effectively mitigate project risks.

Management did take action

Because of the significance of our findings, senior management took the following immediate actions:

- Postponed the implementation of the finance module (originally scheduled for April 1, 2013) until after its finance year-end activities have been completed, and management is confident that the project is ready to implement the new finance module, and the finance and administration business unit is ready to use the new system—a new date has not yet been identified.
- Assigned a new project manager.
- Began working to complete project plans and strengthen project controls for business readiness and project management.

Why this is important to Albertans

Albertans want to know that publicly funded institutions are making the best use of the funds that taxpayers provide to educate post-secondary students. The university is an online post-secondary institution that offers courses to students around the world—over 750 programs to more than 30,000 students per year. It depends heavily on computer technology to deliver learning programs and manage administrative systems. A failure with the new system could impair its operations.

AUDIT OBJECTIVE AND SCOPE

The objective of the audit was to evaluate the university's project risk management systems and controls so that that the university could mitigate the problems before they delay or cause the project to fail. Our audit included the project's business change management controls and the university's plans to prepare for implementing the new system.

We had planned to rely on a review of project management controls and project governance by the university's internal audit team. However, their work had not been completed at the time of our audit.

Audit approach and criteria

We interviewed key project participants, including senior management, and reviewed project documents and deliverables related to the university's project risk management systems. We developed our audit criteria using PMBOK⁵ and COBIT5⁶ project control procedures and standards.

Audit criteria

Management should have effective systems in place to ensure they are identifying and mitigating risks that can cause the project to fail.

⁵ Project Management Body of Knowledge is an industry standard on IT project management controls that is published by the Project Management Institute.

⁶ Control Objectives for Information Technology Version 5 is an industry standard on IT risk management controls published by the Information Systems Audit and Control Association.

To define our audit criteria, we first identified the project controls and oversight processes that would help mitigate the following 10 critical project risks that, in our experience, if not managed can lead to project failure:

- business not ready to receive new system tools and processes
- scope and objectives not clear
- staff not engaged in the project and unaware of impacts to the university
- business controls to support the internal control framework not defined
- go/no-go criteria for implementation not defined
- project management standards not consistently applied
- system development standards not consistently applied
- roles and responsibilities not clear
- sustainment plan to support new system tools and processes not defined
- lack of executive oversight

We conducted our field work from September 2012 to December 2012. We substantially completed our audit on January 15, 2013. Our audit was conducted in accordance with the *Auditor General Act* and the standards for assurance engagements set by the Canadian Institute of Chartered Accountants.

BACKGROUND

The university is an online post-secondary institution that offers courses to students around the world—over 750 programs to more than 30,000 students each year. The university depends heavily on computer technology to deliver learning programs and manage its administrative systems.

The university initiated the administrative systems renewal project in the fall of 2011 with a budget of \$5.1 million. Its goal was to replace aging financial, payroll and student systems with a new enterprise resource planning system. The system consists of integrated student, finance and human resource/payroll modules. The university contracted with an external vendor to provide the upgraded software and integration and project management services.

Although the university plans to resolve operational inefficiencies as part of the project, the project's scope is broader. The university also plans to implement enhanced administrative services for students and staff in the new system. The university is following a phased implementation strategy. It is currently working on the finance module. At the time of the audit the implementation schedule was:

- Finance sub-project—April 1, 2013 (now delayed)
- HR/payroll sub-project—December 31, 2013
- Student sub-project—March 1, 2014

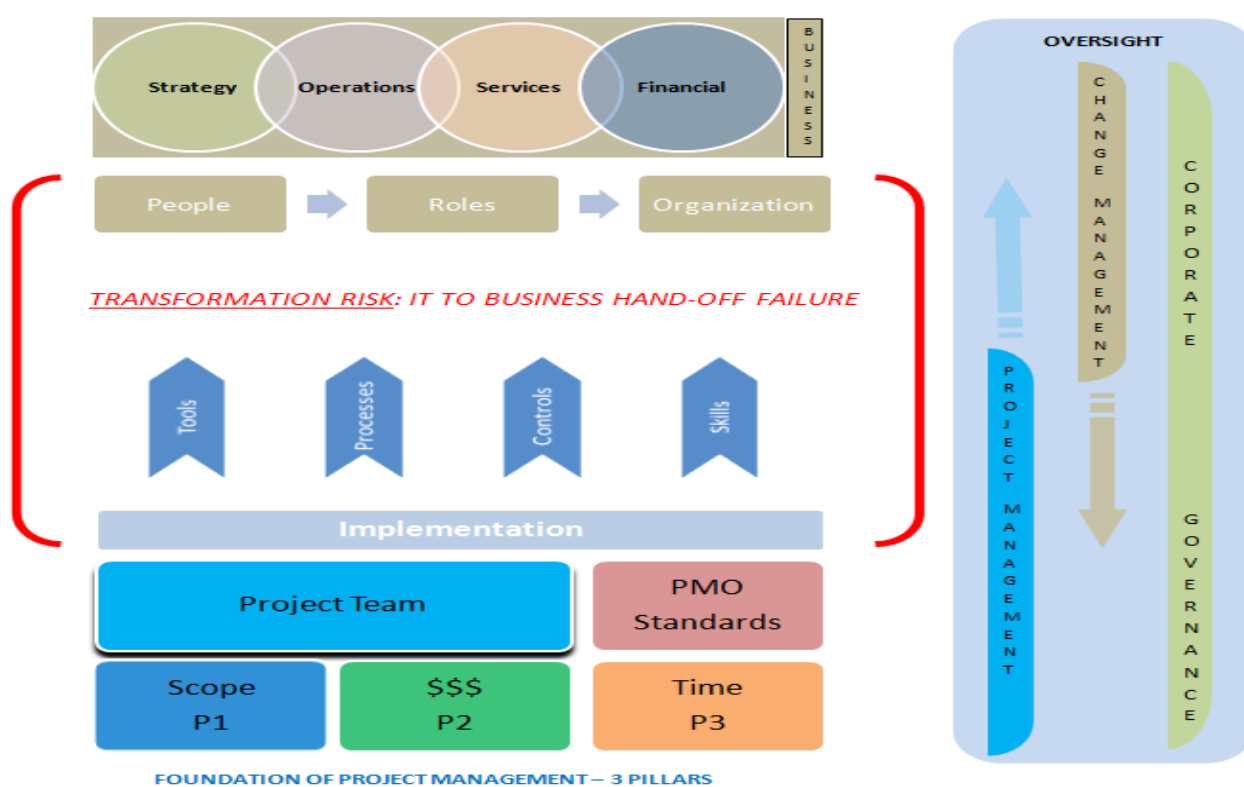
Enterprise resource planning system projects—*inherent risk*

Enterprise resource planning system projects can deliver complex and integrated technologies and business processes across the corporation. As a result, significant effort is required by project teams and project governance bodies to identify early in the project process the risks and impacts to the organization. These complex systems require project managers to extend risk management efforts for business change management, project management and project governance beyond their typical boundaries.

Business change management—planning needs to be more formalized during the project and before implementation, to ensure the business is ready for and capable of using the new systems tools, processes and internal controls to support its operations.

Project management—Formal controls need to be in place during the project and continue after implementation to ensure that the organization can sustain the new business processes and systems.

Project governance—Governance by organization leaders needs to be in place from the start of the project, from business case development through to implementation and business sustainment, to ensure that project objectives are achieved and in line with business goals and that planned changes to business enhance its operations, not impede them.



This diagram highlights where these project oversight processes need to be enhanced, to ensure adequate governance on risk management systems is in place.

FINDINGS AND RECOMMENDATIONS

Business change management risks

Background

Business change management involves the planning and implementing of changes to business processes, internal policies and controls and how systems are used to support the business’s transformation to a new business model and services. This includes managing the effects of change on

its business strategy, services, staff and organizational structure, to ensure a smooth transition from the old ways to the new.

This new system will affect all business processes, including financial processes such as purchasing and expense claims throughout the university.

RECOMMENDATION 4: FORMALIZE AND IMPROVE BUSINESS CHANGE MANAGEMENT PLANNING

We recommend that Athabasca University formalize its business change management plans to ensure its business operations, staff, faculty and students are adequately prepared for the implementation of its new administrative system.

Criteria: specific to this recommendation

University management should ensure that it has:

- formalized and integrated its project management plans with its business change management plans, to ensure that it is effectively managing the risks of new business processes, controls and tools to its operations, staff and students
- designed, documented and trained its staff on all new automated and manual business controls before implementation
- adequately assessed the risk of its implementation approach to ensure that the business can effectively manage the hand-off of the new system and processes without negatively impacting its business operations— This includes formal criteria to ensure key project milestones are achieved and key project deliverables completed, thoroughly tested and signed off by its business stakeholders before implementation of the new system modules.
- formalized testing and training plans to ensure that the system functions as expected to meet business needs and that all staff and students affected by the new system are adequately trained on the new system tools and business processes

Our audit findings

KEY FINDING

Finance and administration operations are not ready for the new system:

- business change management plans are not formalized
- internal controls added from the project or changed are not formalized
- a testing, conversion and training strategy and plans are not formalized

Internal controls not formalized

We found that the university had not documented automated controls in the new system or identified and documented changes to existing controls that will be needed to implement the new systems and processes. The project team acknowledged that the software training materials identify some automated controls that can be turned on. However, there is no documentation to finalize and approve which automated controls the university will use when the new system goes live. For example, key controls are not defined for assigning user access permissions for new system functions, approving of certain financial activities and segregating duties.

Business process changes and new system designs not formalized

We found that the project team reviewed its current business processes early in the project, before receiving formal training from the software vendor. The team performed a gap analysis review to assess the differences between its current and planned new processes. However, it had not formally identified

changes needed to adapt the university's business processes from its current state to new processes required for the new system. Formal definition of business process changes will help ensure that everyone affected by the new system fully understands the operational impacts and the changes that will be necessary to implement the new system and new business processes.

Although the project team has started to document some process design changes, there was no formal template to define these changes. The university still has no official design document for all system and business process changes that it plans to implement.

Data conversion strategy and plan not formalized

There is no data conversion strategy or detailed conversion plan for each sub-project. The project plan task lists identify data conversion activities and the vendor had provided some conversion instructions and conversion software script. However, there are no documented details on how the team will review data in the current systems that will be replaced. A review is needed to determine if bad data must be removed before moving the data into the new system databases. There are also no details on how the data will be moved from the old to the new systems. Detailed plans to test conversion results and how the reconciling of historical data will be done are not defined—the project conversion activities and business stakeholder review and approval processes are not defined.

Training strategy and plan not formalized

At the time of the audit, there were no documented training plans for business end-users and students. The project vendor provided training to the project team, which included training materials. However, with the implementation of the financial module fast approaching there are no formal plans to detail end-user training requirements, training content and processes.

Testing strategy and plan not formalized

Although there is a draft testing strategy, it is neither complete nor approved. There are no detailed testing plans for the new system modules. Testing of the transition to the new system should include:

- scripts on testing scenarios and defined test data for module unit testing to verify system configuration settings
- system end-to-end testing to verify that all system modules are working together
- user acceptance testing to verify that the new system is working as expected and includes the business requirements defined at the start of the project
- performance testing to ensure the system's response times and transaction processing times are acceptable to the operational users

Staff resourcing and engagement not sufficient

Business staff working on the project are still responsible for their daily operational duties. The university has not provided sufficient backup resources. Internal staff costs for time spent on the project are not captured and allocated back to the project's budget. Any impacts to their operational duties are not tracked.

There is no documented staff resourcing plan to explain how business project team members will manage two jobs at the same time. There are no plans to define how job duties and responsibilities are expected to change with the new system. Roles, responsibilities and accountabilities during the project and after implementation are not clearly defined.

During the course of our audit, two key project managers resigned from the university. The administrative systems renewal project manager, who was also the project manager for the finance module; and the project manager for the human resources/payroll module, both left the university at a critical time in the project.

Business stakeholder involvement not adequate

The key financial business stakeholder responsible for business change management planning and implementation for the finance project was unavailable during a critical time in the project. Any plans for business change readiness that were being considered were not formally transitioned to the project team or its business stakeholders and steering committees.

As a result, the executive responsible for finance and administration began to take a more active role. Concerns were raised regarding the lack of training, testing and readiness plans. As well, the risks and impacts of implementing the new finance system during the finance year-end process was not assessed.

Implications and risks if recommendation not implemented

Without a formalized business change management strategy and plan, there is a risk of project failure. The university may face significant hurdles in ensuring that the new system functions as expected and does not cause significant operational failures.

Project management risks

Background

Project management is the discipline of planning, organizing, managing, leading and controlling resources to achieve specific goals and outcomes. A project management methodology is a collection of project activities that encompass best practice standards, such as PMBOK and COBIT5, to establish controls that can help achieve the project's desired results and expectations.

The administrative systems renewal project includes three main sub-projects: finance, human resources/payroll and student services. The project has a manager to provide oversight and coordination on the project as a whole. Each sub-project has a manager responsible to manage the delivery and implementation of each new system component and a business team-lead to ensure business needs are included and changes to operations are effectively planned for and implemented. All of these roles are filled by university staff. The software vendor has provided a program manager, who works only part-time on the project.

RECOMMENDATION 5: FORMALIZE AND IMPROVE PROJECT MANAGEMENT CONTROLS

We recommend that Athabasca University ensure that a formalized project management and systems development methodology and approach are clearly defined, applied and available to all staff working on the project.

Criteria: specific to this recommendation

University management should ensure that it has:

- formalized its project management methodology to ensure the project team applies and follows it consistently
- put performance measurements in place to demonstrate that the project is on track and achieving objectives within budget

- formalized its systems development methodology to ensure all project deliverables are complete and ready for implementation
- formalized and integrated its project management plans with its business change management and readiness plans, to ensure that it is effectively managing the risks of new business processes, controls and tools for its business operations, staff and students, arising from the implementation of the new system
- adequately assessed the risk of its implementation approach to ensure that the business can effectively handle the hand-off of the new system and processes without negatively impacting its business operations— This includes formalizing criteria to ensure the project team achieves key project milestones and completes key project deliverables. Business stakeholders should thoroughly test and sign off new business processes and operational procedures before the team implements each new system module.
- formalize its post-implementation sustainment plans to ensure there is adequate IT and business support to resolve any issues that may arise with the new system or business operations

Our audit findings

KEY FINDINGS

- The project management and systems development approach are not clearly defined and consistently applied.
- Internal staffing, infrastructure and reporting costs are not included in the project’s budget.
- A formal change management process is not in place.
- Implementation criteria and project gating process are not formalized.
- Project files are not organized and are not kept current.
- A sustainment plan for business and technical support after implementation has not been formalized.

Project management and systems development methodology not formalized

There is no formally defined project and systems development methodology being applied by the university’s project team. Although the university has a high level project management strategy, our audit could not find evidence that its guidelines were being applied consistently within the project.

The vendor proposed its systems development methodology for the project, but the project team had not been fully trained on this approach. We found little evidence in the project files to indicate that the team is using any formal systems development methodology. There were no templates or expected criteria defined for:

- a functional design blueprint—to identify how the system will be used
- a technical design solution blueprint—to detail system configuration and software add-ons and how the system features will work
- internal controls (automated and manual)
- strategies and detailed plans for data conversion, testing and training

Project budget and costs not complete

The official project budget is \$5.1 million. This is for the software licence (fixed price) and vendor services (time and materials) fees.

Internal costs—Internal costs for IT and business project team members are not summarized as a project expense and included in the budget. The university does not have the systems in place to report overall internal resource usage. The university indicated that these additional costs could be significant. Management estimated the cost of internal resources for the project to be an additional \$1.5 million. The

cost of internal labour should have been included in the overall project budget or reported as additional internal expenses, to more accurately reflect the true cost to the university to implement the new system.

Finance staff performing double duty—Finance staff, who are working on the project and continuing with their regular business responsibilities, may not be able to sustain both these roles as the financial module implementation approaches. Financial year-end stresses along with project demands could impair project quality and cause operational delays. As well, it is difficult for management to effectively plan for and mitigate these risks, because there are no systems in place to track staff time or identify where and when stress points can and will occur.

Computer costs—Additional computer infrastructure costs are not included in the project budget. These include new virtual server components⁷ required to support the development, test and production computer operations for the new system. Management stated that these costs are being shared and used by other IT services. However, additional hardware components that are specifically labeled for the new system should be allocated to the project budget. Purchasing materials received from management identified that the overall costs for new computer hardware upgrades are approximately \$350,000. However, there is no breakdown to identify how much should be allocated to the project.

Reporting services—The project team informed us that it requires additional reporting services because of the reporting limitations with the new software. This additional project activity is not included in the budget. The cost for an additional reporting system and tools is unknown at this time and there was no detailed information in the project files.

Project change management not formalized

The vendor provided a documented change management request process, which includes a change log and provides for approvals and testing results. However, the project team is not using this process. Instead, they are using existing university IT change management forms to record changes.

There has been only one documented change request to date—to remove the relationship module from the new software install (it is obsolete and will be replaced with another solution in future). However, there have been other significant changes to the finance project scope, such as additional reporting and document imaging requirements and interface changes. These changes did not have a documented change request.

All project changes should be tracked, regardless of whether there is a cost for the change, so that the project team can assess how the change will affect business change management plans and business controls. We found that the project team is not reporting all project changes to the project's governance bodies and business stakeholders.

Implementation criteria "go/no-go" gating process not formalized

Although the project team has started to prepare an implementation criteria document for the finance module's implementation, it is an incomplete draft. There is also no formal strategy or process to identify significant milestones or critical events or deliverables as complete, signed off and ready to proceed through the project plan, as criteria for implementation.

⁷ Virtual server components are computer memory and network components that are added to a server to increase its multi-processing capacity.

Project files not organized

Project plans and working papers are kept in two separate project repositories and are not always current. The first repository the project team used was the university's new project management document folder tool. The team informed us that it uses this tool for final and approved project plans and project deliverables. The second project repository was an internal file share for all working documents for the project. The document migration process, as described by the project team but not documented, is that when project documents became final and approved they are moved to the project document folder tool.

Our review of both project file stores found that the new project folder did not contain recent and approved project plans. Project plans and schedules in this folder had earlier implementation dates that were no longer relevant. Our review of the project file share also found that it contained other project information related to earlier upgrades of the existing systems, mixed in with current project materials. It was difficult to locate documents and navigate through the file structures.

Keeping project documentation well organized and current helps to ensure that information required by the various project teams is readily available during the project and available to support sustainment efforts after implementation.

Sustainment plan not formalized

There were no defined or documented sustainment plans to identify the project's IT and business support strategy, processes and required resources.

The university's management should ensure that implementation planning extends beyond turning the system modules on, that plans are developed to ensure that new system tools and business processes and operations can be effectively supported and budgeted for, after implementation.

Implications and risks if recommendation not implemented

Without a formalized project and systems development methodology, there is a significant risk that a control failure will occur with the project. The university may face significant hurdles in ensuring that its administrative systems renewal projects are completed on time and within budget and that they meet business requirements and expectations.

Project governance risks**Independent project reviews not performed**

Our audit had planned to leverage the project review by the university's internal audit team to assess the project's project management and governance controls.

The internal audit review had not been done at the time of our audit. The university's project management office informed us that it had planned the internal audit review as its project's health check and that they were still awaiting its start.

The university's management should ensure that planned project reviews, like the internal audit review or other third-party reviews, are performed frequently or at major project milestones, to provide assurance to the project's governance bodies that risks to achieving project outcomes and success are managed effectively.