

Innovation and Advanced Education— IT System Implementation at Olds College

SUMMARY

To govern effectively, the board of governors of each of Alberta's post-secondary institutions need accurate and timely financial information. The management of Olds College has identified that its aging administrative systems are difficult to maintain and cannot keep pace with growing business needs and decision making requirements. Enterprise resource planning systems integrate financial, payroll and student modules into one system for operating efficiency and cost effective data management. The college's board, in 2014, approved a project to replace the college's financial, payroll and student services systems with an integrated ERP system.

The college plans to implement the first ERP system module effective November 1, 2015.

College management must have a clear and comprehensive system implementation plan to ensure the ERP system will work effectively on the system implementation date. Weaknesses in the college's implementation plan increase the potential for implementation failure, higher project costs and the system not providing users with effective functionality when operational.

What we examined

We performed a project early warning assessment¹ of the project implementation controls used by the college to manage the risk of not achieving its project objectives. This includes examining the design of controls for:

- project management implementation planning
- business change management readiness planning
- project oversight

The design of these controls is an early indicator of management's ability to mitigate the risk of a failed implementation.

Overall conclusion

The college's implementation plan has significant weaknesses in the design of its project management, business change management and senior management project oversight controls for the ERP project. College management cannot assure the board of governors of a successful system implementation without the weaknesses being rectified.

The board is unable to provide effective oversight of the project, as it is not regularly receiving complete information on project risks, mitigation plans and whether appropriate actions are being taken. The board's decision to approve the system going live is significantly impacted by the lack of complete information on implementation readiness.




¹ An early warning assessment is a review of a project's health, in relation to how the project team and management are effectively managing the risks related to achieving stated project objectives and desired outcomes.










What we found

Early warning project assessment results

We summarize the control design weaknesses we identified in the project implementation plan, using the following scorecard. The college will fail to implement the new ERP system with its expected business improvements, within the timeframe it has set, if it does not fix these weaknesses.

We assessed 10 project risk management systems and assigned indicators to highlight the significance of the control design deficiencies we observed.

	Red: Control is not well designed. Management must make significant improvements immediately.
	Yellow: Project controls require more rigour in design to ensure project managers and management are alert to potential impacts to the project.
	Green: Control is well designed. A reassessment may be required later in the project to ensure it continues to effectively mitigate the risk.

SCORECARD: PROJECT RISK MANAGEMENT SYSTEMS	ASSESSMENT (control design only)	KEY PROJECT PROCESS(ES)
SC1 Business readiness and transformation		Business change management/ Project oversight
SC2 Scope and objectives		Business change management
SC3 Staff engagement		Business change management
SC4 Internal/business controls		Business change management
SC5 Go/no-go implementation criteria		Project management
SC6 Roles and responsibilities		Project management
SC7 Systems development standards	N/A	Project management (U of A responsibility)
SC8 Project management standards		Project management
SC9 Sustainment plan		Business change management
SC10 Executive oversight ² (college)		Project oversight

What needs to be done

College management must take immediate steps to ensure that the project team effectively designs key project implementation controls.

The college project team must improve the design of its project implementation plans so that management can effectively provide oversight of the critical tasks and deliverables needed for successful implementation. A clear project schedule, with defined implementation go/no-go criteria for each project milestone and deliverable, is essential.

² Executive oversight in this context is primarily senior management oversight and reporting to the board.

College management must also ensure that the project team improves the design of business change management controls and information on financial reporting requirements, business financial controls and the college's sustainment plan for business and technical support after implementation.

The board must provide oversight so that management clearly understands project risks that could lead to project failure, and ensure the project team is effectively mitigating those risks. With this information, the board can effectively conclude on whether the college should go live with the new ERP system.

Why this is important to Albertans

A failure to properly implement the new system will impair the college's ability to effectively run its operations. Albertans expect post-secondary institutions to have strong financial systems to monitor and report on their operations on a timely basis. These systems should also provide college management with the necessary information to make decisions on how to provide education cost effectively to students.

AUDIT OBJECTIVE AND SCOPE

Our objective was to evaluate the design of the college's project controls to mitigate the risks of its ERP implementation plan.

We did not test whether these controls were working effectively. A weakness in control design provides a strong indication of whether the college will effectively manage its project implementation risks. This audit approach allows us to provide prompt advice to college management and the board on control design weaknesses, to help them effectively manage the risk of a failed implementation.

The Department of Innovation and Advanced Education's Campus Alberta Unified Services³ initiative is providing Olds College with its new ERP system. CAUS provides smaller post-secondary institutions with access to a common enterprise resource planning⁴ system for its administrative and student information systems. The department utilized the expertise and ERP systems of the University of Alberta to develop and configure the system. The college will operate within the U of A's ERP system as a separate business unit, with a clear segregation and restriction of access to its data. Our audit did not include assessing the department's CAUS initiative or the development of the ERP system at the U of A.

We conducted our field work from May 4, 2015 to July 17, 2015. We substantially completed our audit on August 24, 2015. Our audit was conducted in accordance with the *Auditor General Act* and the standards for assurance engagements set out in the CPA Canada Handbook—Assurance.

³ Campus Alberta Unified Services is using the University of Alberta to develop and host an ERP system for smaller colleges in the sector.

⁴ Enterprise resource planning systems integrate financial, payroll and student services modules into one system for operating efficiency and cost effective data management.

BACKGROUND

Olds College is a post-secondary institution that offers courses to 1,500 to 2,000 students annually, and is the largest agricultural college in Alberta. The college depends heavily on computer technology to deliver its learning programs and supporting administrative systems.

The college plans to implement the finance module of the ERP system effective November 1, 2015. The other modules (HR, payroll and student services) will follow later in 2016–2017.

College management overseeing the implementation of the ERP system consists primarily of the chief information officer, VP of student and support services, and the chief financial officer. The college's project team consists of staff members from various departments in the college, including the controller.

College management is responsible for getting the college ready to implement the ERP system. This includes project planning, staff training, communicating with stakeholders, and making the business process and control changes needed to use the new system. A CAUS project team from the U of A has assisted the college's project team with some implementation planning activities.

The college's board has approved \$1.4 million to provide the necessary resources for management to implement the ERP system.

FINDINGS AND RECOMMENDATIONS

Project management risk

Background

Project management is the discipline for project managers to plan, organize, manage, lead and control project resources to achieve specific goals and outcomes. A project management methodology is a collection of activities encompassing the best practice standards, such as PMBOK⁵ and COBIT5⁶ that establish required project controls to help a project team achieve desired results and expectations.

RECOMMENDATION 3: IMPROVE DETAILED PROJECT PLANNING

We recommend that Olds College develop a detailed project plan and define its criteria for each milestone to implement its enterprise resource planning system.

Criteria: the standards for our audit

College management should have:

- clarity on whether the project team has properly planned every activity required for the project lifecycle through to implementation, showing milestones, dependencies and pre-requisites
- a well-defined and organized/hierarchical work breakdown structure (WBS)⁷ showing relationships and dependencies between tasks, deliverables and milestones

⁵ PMBOK is an industry standard on project management published by the Project Management Institute (PMI).

⁶ COBIT5—Control Objectives for Business and Information Technology V5.0, published by the Information Systems Audit and Control Association.

⁷ A WBS is a project management tool used to provide a detailed breakdown of project tasks for input into a project schedule.

- defined and approved implementation criteria⁸ to ensure that:
 - the project team achieves key project milestones
 - the project team completes key project deliverables
 - the project team ensures new business processes and operational procedures are thoroughly tested and signed off before the system is implemented
 - appropriate go/no-go implementation decisions are made
- performance measurements in place to demonstrate that the project is on track and achieving objectives within budget

See Appendix: Detailed Audit Criteria for the detailed project management criteria applied.

Our audit findings

KEY FINDINGS

- The project team has not completed a detailed project implementation plan.
- Criteria for go/no-go decisions at project milestones and at go-live are not finalized.
- Project roles have been properly defined.

Detailed project plan is not defined (see Scorecard—SC8: Project management standards)

The college's project team has only prepared a high level project plan. The plan does not align with the expected project deliverables and does not identify sufficient details on project activities, timelines, dependencies and milestones.

The project team began drafting a detailed project Gantt⁹ chart, with more detailed project tasks, after our initial audit inquiries. The project team's delay in formalizing a detailed project implementation plan until just prior to the go live date significantly increases the college's risk of missed tasks that are critical for successful ERP system implementation.

The project team's work breakdown structure is an unstructured list of project tasks. The structure should be arranged in sequential or chronological order, to reflect the hierarchical arrangement of project deliverables, tasks and criteria for the project to move to the next phase or get ready for implementation.

The college project team has not sufficiently recorded information on the completion of the implementation plans to be able to provide current and accurate project reporting to management and the board.

Go/no-go acceptance criteria not defined (see Scorecard—SC5: Go/no-go implementation criteria)

The college project team has not identified its criteria for:

- deciding when it is appropriate to move to the next project stage or major activity
- management's sign-off of deliverables or testing throughout the project

The project team's production readiness assessment was in template form at the time of our audit. If not completed, the project team will likely miss important activities and deliverables for a successful system implementation.

⁸ These criteria are significant items that must be done before deciding to go ahead with moving to the next phase in a project or implementing a new system. They are sometimes called gating criteria.

⁹ A Gantt chart is a project management tool used to define a schedule of project activities, deliverables and resources on a timeline.

Project roles are defined (see Scorecard—SC6: Roles and responsibilities)

Management has clearly defined project roles for individuals for the implementation. Key project team members from the institution have been assigned as a dedicated project team. The project team is using a RACI¹⁰ chart to identify all key project participants.

Implications and risks if recommendation not implemented

The college will not complete all essential project deliverables or tasks on time or to an acceptable standard without a formal approach to project planning. Implementation of the ERP system would be delayed, exceed budget or fail to meet the college's business requirements and expectations. A failed implementation would result in costly post-implementation workarounds or the need to revert to less efficient pre-implementation manual processes.

Business change management risk

Background

Business change management planning involves management readying its business operations for a smooth transition to the new system. Planning includes identifying new processes, policies and business controls. Management must ensure that business needs are adequately defined and the impacts of change to business strategy, people and organizational structure are well understood and adequately planned.

RECOMMENDATION 4: IMPROVE BUSINESS CHANGE PLANNING

We recommend that Olds College:

- define the financial and other reporting capabilities required for implementation
- define automated business controls in the system configuration, and business controls affected by the use of the new system for training and production readiness
- develop and approve post-implementation sustainment plans and support agreements to ensure the college has adequate resources to support the new system

Criteria: the standards for our audit

Management should ensure, for all financial business processes, that current and new business controls are documented and available for reference in support of business operations.

College management should ensure the project team:

- defines its business reporting needs and capability, before implementation
- defines its internal financial business controls affected by the new system before implementation
- develops formalized post-implementation sustainment plans to ensure that adequate IT and business support is available for the new finance operations
- completes negotiating and defining its software and hosting agreements with the U of A, before implementation

See appendix for the detailed business change management criteria applied.

¹⁰ RACI (responsible, accountable, supportive, consulted and/or informed) is a project management tool used to clarify what a project team member's or business stakeholder's roles and expectations are for a project.

Our audit findings

KEY FINDINGS

Staff and management are engaged on the project, but the project team has not:

- defined and approved reporting requirements for the new financial system
- completed required reporting software changes to meet college needs
- defined business controls for the new financial system and operations
- formalized a sustainment plan for post-implementation business and technical support
- defined criteria to measure the quality of services provided by the U of A

Finance reporting requirements are not defined (see Scorecard—SC1: Business readiness and transformation and SC2: Scope and objectives)

The new system will affect all financial business processes throughout the college. The project team does not yet have a comprehensive understanding of all of the reports the system can or will be providing.

The project team has not finalized identifying the financial reporting requirements and capabilities of the new system. Identification includes reporting required for processes such as procurement and expense claim processing. Required software and configuration changes to meet these needs are also outstanding. Basic financial reporting such as trial balance reports are not yet available.

Business controls are not defined (see Scorecard—SC4: Internal/Business controls)

The project team has not documented existing business controls or control changes expected from implementing the new system. The project team participated in workshops to identify and document gaps in how the new software works and how the institution's operations would have to change. Impacts to the financial control environment were not defined during the workshop and remain outstanding.

Plans to sustain the relationship with U of A are not defined (see Scorecard—SC9: Sustainment plan)

The project team has not yet defined plans to sustain the project's IT and business support arrangements with the U of A, including its strategy, processes and required resources. The college risks missing essential support arrangements and services if it delays defining the legal and operational agreements for this ongoing relationship.

Management should ensure that implementation planning extends beyond turning the system on. Management should ensure the college can effectively support and pay for new system tools, and business processes and operations after implementation. The project team must collaborate with the U of A to identify exactly what the college expects and needs, and what the U of A can or will provide. Agreements with the U of A should have been defined at the start of the project to communicate desired expectations and outcomes of service delivery during and after implementation.

Business staff are involved and kept informed of project progress (see Scorecard—SC3: Staff engagement)

Finance staff were involved in data cleansing for conversion activities, business fit gap assessments and acceptance testing. We examined a staff communication strategy/plan used to keep management and staff informed, and staff surveys used to monitor concerns and seek input from staff directly affected by the planned implementation.

Implications and risks if recommendation not implemented

Without clearly designed plans for business requirements, business controls and post-implementation support, the college risks an operational failure occurring that will impede its ability to provide accurate and timely financial reporting to the college's oversight bodies.

Project oversight risk**Background**

Effective project oversight¹¹ involves senior management participation on the project's steering committee, and the board. Management oversight processes are essential for a project to remain on track to meet the needs of the institution. As well, it is necessary to ensure accountability for results and demonstrate commitment from management and the board. Oversight includes the monitoring of project decisions and risks to ensure that adequate effort and attention is given to problems before they cause the project to fail.

RECOMMENDATION 5: IMPROVE OVERSIGHT ON PROJECT RISK MANAGEMENT

We recommend that Olds College define a formal project risk management process to identify, rank and mitigate all project risks.

Criteria: the standards for our audit

Management should ensure that formal processes are in place to identify and mitigate all project risks using a common practice. Management must ensure that any issues that arise during the project and have an impact on the project's scope, timeline or budget, are clearly understood and effectively mitigated.

College management should:

- define a consistent method of risk identification, with actionable mitigation plans
- regularly report to the board on the status of its risk registry and mitigation plans

Our audit findings**KEY FINDINGS**

- The project risk registry is incomplete and mitigation plans are not clearly defined.
- The board and management are not aware of all project risks or what is being done by the team to manage those risks.
- The board does not have all the information required to make the decision to go live with the system on the scheduled implementation date.

Risk management is scattered and not reported consistently (see Scorecard—SC10: Executive oversight)

The board is unable to provide effective oversight of the project as it has not regularly received complete information on the project risks, mitigation plans and whether appropriate actions have been taken. There was no reporting to the board which detailed the implementation weaknesses identified in this report.

The project risk registry is incomplete. Risks are defined in multiple documents, and clear mitigation plans are not defined. Defining risks in one central location would help ensure clear and complete mitigation and ownership. The board and management are not aware of all project risks or what is being done to manage those risks by the project team.

¹¹ Project oversight requires vigilant monitoring by management on project processes and systems, including accountability for results, to ensure that risks are managed effectively and project objectives are achieved.

The board must ensure that management is using a formal risk management process for the project and that the status of all risks is regularly reported and monitored for appropriate mitigation and follow up. Without strong management oversight, the board does not have all the information necessary to approve proceeding with a system go live decision at the planned implementation date.

Implications and risks if recommendation not implemented

Without clear identification and reporting on risks, and what is being done to manage the risks, the board does not have complete information to ensure that the project implementation plan will be executed successfully.

DETAILED AUDIT CRITERIA

DETAILED AUDIT CRITERIA RISK: MANAGEMENT SHOULD HAVE...	CONTROL EVIDENCE TO BE REVIEWED (EXAMPLES)	KEY PROJECT PROCESS
<p>1. Business not ready Integrated its project management and change management plans to effectively manage business transformation and readiness failure</p>	Project management and change management plans have same standards on rigour and completeness	Business change management/ project oversight
<p>2. Scope and objectives not clear Formalized and approved its business objectives and project scope to ensure it is clearly and consistently understood by all stakeholders and executive management</p>	Charter, business requirements, business case, gap analysis on business needs and system capabilities	Business change management
<p>3. Staff not engaged Adequately informed Olds College staff involved and affected by the new system of project status</p> <p>Adequately trained staff on the new system tools and business processes</p> <p>Considered: Are Olds College staff and students engaged and ready for change?</p>	Communication plan, formal training, job relocation plans and organizational structure changes	Business change management
<p>4. Business controls not defined Designed, documented and fully implemented its automated and manual business controls before implementation</p>	Automated and manual control documentation and business process flow impacts	Business change management
<p>5. Go/no-go criteria not defined Adequately assessed the risk of its implementation strategy to ensure that the business can effectively handle the hand-off of the new system and processes without negatively impacting its business operations</p> <p>Defined a project gating strategy and criteria to ensure key milestones are achieved before proceeding. Is the implementation plan too complex (Big-bang¹² vs. phased)?</p>	Implementation roll-out plans, conversion strategy and organizational change plans	Project management

¹² Big-bang is a high-risk systems implementation strategy involving complex systems such as an ERP, whereby the system is fully installed within the business operations in one instant changeover.

DETAILED AUDIT CRITERIA RISK: MANAGEMENT SHOULD HAVE...	CONTROL EVIDENCE TO BE REVIEWED (EXAMPLES)	KEY PROJECT PROCESS
<p>6. Roles and responsibilities not clear Formalized roles, responsibilities and accountability for results to ensure that the project team and affected business units have clarity as to who will be doing what, and that all involved have the necessary skills to fulfill their responsibilities</p>	<p>Accountability matrix, existing and new roles/responsibilities, required skills and competencies levels</p>	<p>Project Management/ Business change management</p>
<p>7. Systems development methodology standards not consistent Formalized its systems development method to ensure it is consistently applied and followed with performance measurements in place</p>	<p>Systems development methodology follows standards and practices</p>	<p>Project management</p>
<p>8. PM standards not consistent Formalized its project management method to ensure it is consistently applied and followed, with performance measurements in place to demonstrate that the project is on track and achieving objectives within budget</p>	<p>Project management standards on financial management, timelines, work breakdown structure (WBS) plans and project management office (PMO) standards and oversight processes</p>	<p>Project management</p>
<p>9. Sustainment plan not defined Formalized its sustainment support strategy to ensure that adequate resources have been assigned to support the system and the business post-implementation</p>	<p>Post-implementation support—IT for software and infrastructure maintenance, and business for subject matter expert support and additional training</p>	<p>Business change management</p>
<p>10. Lack of executive oversight Formalized its corporate oversight processes to ensure that there is visible executive management support and awareness on issues and risks</p>	<p>Oversight structures—decision making, reporting cycle and processes in place to manage issues, risks, communication on changes</p>	<p>Project oversight</p>