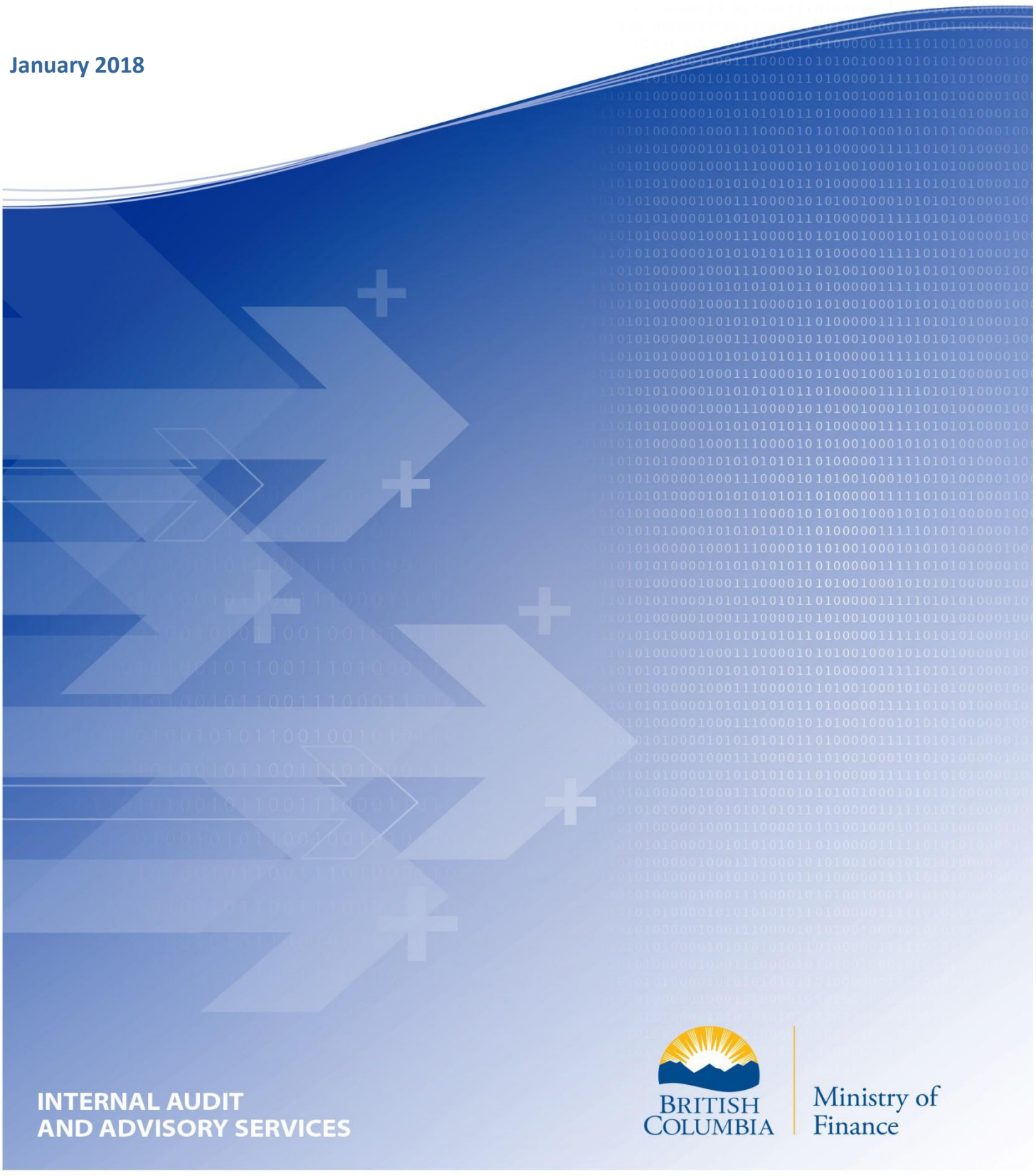
Review of
Modernizing StudentAid BC

January 2018



INTERNAL AUDIT
AND ADVISORY SERVICES

BRITISH COLUMBIA | Ministry of Finance

Project No.: 18−01 AVED

Review of Modernizing StudentAid BC

Internal Audit & Advisory Services
Ministry of Finance

Fieldwork completed: September 2017

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Abbreviations

BC	British Columbia
BI	Business Intelligence
FRCR	Financial Risk and Controls Review
IT	Information Technology
Ministry	Ministry of Advanced Education, Skills & Training
ModSABC	Modernizing StudentAid BC
NSLSC	National Student Loans Service Centre
OCIO	Office of the Chief Information Officer
PIA	Privacy Impact Assessment
Province or Government	Government of British Columbia
SFAS	Student Financial Aid System
SIMS	Student Information Management System
STRA	Security Threat and Risk Assessment

Executive Summary

Post-secondary students from British Columbia access federal and provincial student financial assistance through a central point known as StudentAid BC. This program is managed by the Ministry of Advanced Education, Skills & Training (the Ministry). In 2013, the Ministry proposed a multi-phased capital investment, the Modernizing StudentAid BC (ModSABC) initiative, to replace legacy technology and provide robust data analytical tools.

The ModSABC initiative is separated into two projects, Student Information Management System (SIMS) and Business Intelligence (BI). The SIMS project will implement a new technology solution using a customer relationship management platform, while the Business Intelligence project is designed to improve access to information for the Ministry's staff and stakeholders.

As requested by the Ministry, the Internal Audit & Advisory Services conducted a review of the Ministry's governance and project management practices for the ModSABC initiative.

The total budget of ModSABC is estimated at $18 million, with approximately two-thirds allocated to the SIMS project. The scope of this review was primarily focused on SIMS given its complexity, associated costs, and strategic importance for the Ministry.

Business Case

The business case for the ModSABC initiative was developed and submitted to the Office of the Chief Information Officer in 2013 to improve data integration, and address operational and financial risks associated with legacy technology.

The business case estimated ModSABC would achieve $11.3 million a year in financial benefits. To date, the majority of these benefits have been achieved independent of this initiative, indicating that initial planning was not sufficiently detailed with regard to project benefits.

The Ministry plans to update the ModSABC benefits prior to the execution phase to guide the project team in delivering these updated benefits and to form the benchmark of a post-implementation review. The Ministry would also benefit from updating the business case to reflect other changes to ModSABC.

Timeline and Phases

In April 2015, the Ministry obtained funding approval for the SIMS project for a three-year timeframe, leading to a completion date of March 2018. The current planned timeframe to complete this project is December 2020.

The primary reasons for the project delay involves the limited capacity of ministry staff to devote the time needed on the project, as well as a greater level of complexity than initially expected. An eleven-month preparation phase was added to complete some outstanding deliverables, assess the feasibility of decommissioning the legacy systems, and better prepare for the development and implementation of SIMS. This phase is scheduled to be completed in March 2018.

The current timeframe for the SIMS project coincides with the end of technical support of the legacy systems, leaving no buffer for further delays. The Ministry is working to address the root causes of project delays; however, as this has yet to be fully addressed, there remains a risk that all intended functionalities will not be ready by December 2020.

Given the strategic importance of the SIMS project, ensuring successful and timely project implementation is critical to the ongoing support of the StudentAid BC program.

Project Management Approach

The SIMS project began using a sequential project management approach, known as Waterfall, which requires extensive planning and documentation. The Ministry has determined that continued use of this approach throughout the execution phase would hinder its ability to deliver the project within the current timeframe.

In April 2017, the Ministry approved moving to Agile for the execution phase of SIMS. Agile is an iterative project management approach emphasizing the early and continuous delivery of system capabilities.

Agile introduces new activities to the SIMS project, such as training a dedicated project team and revising the project governance and management practices. These activities are planned to be completed as part of the preparation phase currently underway.

Project Governance

The project governance established for the SIMS project includes the involvement and oversight of a Project Board comprised of senior management from the Ministry, and representatives from other organizations (i.e., Ministry of Finance and the Office of the Chief Information Officer). A Strategic Working Committee, a subgroup of the Project Board, is also in place providing additional scrutiny and reviewing project deliverables.

The Ministry plans to revise its governance framework before beginning the execution phase to align it with practices envisioned under the Agile approach. Until the new framework is implemented, the Strategic Working Committee is leading the SIMS project under the oversight of the Project Board.

Approvals

The Ministry assigned quality review of SIMS project deliverables to a number of individuals and groups. Our assessment showed that these deliverables were typically assigned to two review groups and each group took significantly more time to ratify a deliverable than the established timeframe.

Staff turnover, operational priorities for project resources, and the requirement for group consensus were factors identified for the extended timeframe. As the project progresses, the Ministry will benefit from a more timely review process. This may include early review and tracking of midpoint milestones for larger deliverables.

A readiness assessment is planned to be completed to determine whether the SIMS project is sufficiently ready to proceed to the execution phase. While the project documentation recommends the use of a checklist, there remain opportunities to clearly identify acceptance criteria and thresholds to help the Project Board conduct this assessment.

During the execution phase, quality control activities are expected to be in place to ensure new system capabilities will perform according to the agreed-upon business requirements. This includes user acceptance tests to be performed by independent teams.

Risk Management

The Ministry has established a risk management process for the SIMS project that includes regular updates on relevant risks to the Project Board. A risk log and high-level mitigation plans are maintained.

The Ministry plans to complete a Privacy Impact Assessment and a Security Threat and Risk Assessment for the SIMS project. Although a Financial Risk and Controls Review is not currently scheduled, the Ministry acknowledges the importance of confirming with the Office of the Comptroller General whether this review is required.

Resource Management

The Ministry has used a combination of internal staff and contractors for the SIMS project. Contractors have performed key project roles while ministry staff have provided strategic and day-to-day direction, as well as preparing and reviewing deliverables.

A lack of staff resources has been continuously identified and reported as a risk throughout the SIMS project. This risk became a recurring issue and was one of the primary causes of delay in completing project deliverables.

In recognition of the need to secure additional resources, the Ministry approved a resourcing strategy in September 2017, which includes the implementation of a dedicated project team and acquisition of additional operational resources. Given the time required to onboard resources, the Ministry will need to assess any potential impact on the project timeline and adjust the plans accordingly.

Project Monitoring

A project dashboard is regularly updated and used to report SIMS' status to the Project Board. This report includes information about completion dates, costs, key risks, and overall project ratings. While it is considered an important monitoring tool, the project dashboard could be further enhanced by ensuring that explanation for changes on deliverables and related deadlines are consistently recorded. Also, documenting the criteria for establishing the project ratings would enhance clarity of the dashboard.

The budget for the SIMS project is estimated at $12.1 million. As of August 2017, the Ministry had spent $2.1 million and forecasted the total project costs at $11.6 million. Adjustments to the forecast have been limited to the current fiscal year, as costing information about activities of the future phases was not available. The Ministry has recently clarified a number of the remaining costs and has indicated that the forecast will be revisited before moving to the execution phase.

The Ministry has a defined process for managing changes to the SIMS project. Although a formal process is in place, there have been project adjustments that were not recorded or supported by appropriate documentation, such as the extension of the project completion date. The Ministry would benefit from consistently documenting change requests, including formal justification of the changes, prior to receiving approval.

Organizational Change Management

To help individuals embrace changes to their day-to-day work, it is important to apply change management activities at an early stage of a project. Change management begins with a strategy and a set of plans focused on helping staff through the transition. The business case recognized the ModSABC initiative would need to be supported by change management practices to successfully deliver the project outcomes.

In early 2017, an internal survey identified areas where ministry staff were not fully supportive of or ready for the envisioned changes. The Ministry has started to provide change management training to key staff and is also planning to hire a change management and communication lead to help strengthen existing practices and improve accountability. While there remains no formal change management plans to date, these are expected to be developed prior to the execution phase.

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We would like to thank the management and staff of the Ministry of Advanced Education, Skills & Training as well as the other stakeholders who participated in and contributed to this review, for their cooperation and assistance.

Stephen Ward, CPA, CA, CIA
Executive Director
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Ministry of Finance

Introduction

Students from British Columbia (BC) are eligible to apply for public financial assistance to help them with the cost of their post-secondary education. Student loans and grants are delivered in a partnership with the governments of BC and Canada.

In an effort to improve customer service, both governments agreed to integrate their respective programs through a central access point, known as StudentAid BC. In 2016/17, StudentAid BC approved over $660 million in federal and provincial loans and grants to students.

The Ministry of Advanced Education, Skills & Training (the Ministry) delivers the StudentAid BC program. The Ministry qualifies post-secondary institutions and their programs, as well as assesses students' eligibilities against provincial and federal criteria. The Ministry of Finance is responsible for financial transactions between the Province and the National Student Loans Service Centre.

StudentAid BC is supported by a number of legacy systems with limited flexibility to accommodate current business requirements. Technical support for the primary system, known as the Student Financial Aid System (SFAS) will end in December 2020. Without system support, SFAS may not be recoverable in case of failures.

In 2013, the Ministry developed a business case proposing an initiative known as Modernizing StudentAid BC (ModSABC). The business case recommended a multi-phased capital investment to replace legacy technology and provide an information system with robust data and analytical tools. This investment is expected to enable stakeholders (i.e., students, post-secondary institutions, and the Ministry) to make informed decisions that maximize their return on investment of post-secondary education.

The first phase of the ModSABC initiative significantly reduced the manual work involved in the student financial aid application process and the use of paper for student correspondence. This work was completed in May 2015 with the launch of online student applications, as well as student and post-secondary institution dashboards.

The current stage of the ModSABC initiative involves the replacement of the student financial aid legacy systems to improve the Ministry's management of student, institution and system data. For project management and budgeting purposes, the ModSABC initiative is separated into two projects:

- The Student Information Management System (SIMS) project will replace legacy systems by implementing a new technology solution using a customer relationship management platform.

- The Business Intelligence (BI) project will improve access to information for the Ministry's staff and stakeholders by integrating systems and linking student financial assistance data.

The total budget of ModSABC is estimated at $18 million, with approximately two-thirds allocated to the SIMS project. The current planned completion date for ModSABC is December 2020.

Purpose, Scope, and Objective

The purpose of this review was to examine the Ministry's governance and project management practices for the ModSABC initiative. The scope focused on the SIMS project, including key interdependencies with the BI project.

The review evaluated and, as appropriate, made recommendations related to the Ministry's governance and project management monitoring, review and approval processes (including practices to date) with a focus on the following areas:

- Project governance, commensurate with the size and complexity of the initiative.
- Risk management, to identify, analyze and mitigate project related risks.
- Project resource plan and strategies, including related contingencies.
- Approvals for key deliverables, including formal 'stop/go' decisions.
- Controls to manage changes to cost, schedule or scope.
- Performance measurement, reporting and monitoring, including quality management.
- Forecasted project benefits and the assumptions used to support them.
- Change management processes to assist the organizational changes necessary for a successful transition.

This review, requested by the Ministry of Advanced Education, Skills & Training, was conducted by Internal Audit & Advisory Services, Ministry of Finance.

Approach

Working with senior management, Internal Audit & Advisory Services conducted an advisory engagement with a focus on project management for the Ministry's ModSABC initiative. The approach included:

- Conducting interviews with key management and staff across the Ministry and relevant stakeholders.
- Reviewing and analyzing project management documentation developed by the Ministry.
- Reviewing and analyzing key project management processes.

Overall Conclusion

The ModSABC business case, developed by the Ministry in 2013, highlighted the necessity of replacing legacy systems and improving data integration. While the business case was important to secure the required funding, this document has yet to be updated to reflect changes to the initiative, in particular project benefits. A revised business case with an updated set of project benefits would assist the Ministry in conducting a post-implementation review to determine the success of the initiative.

As part of ModSABC, the Student Information Management System (SIMS) project focuses on replacing legacy technology. In the absence of dedicated resources, the Ministry has had difficulty completing key project deliverables on time. Recent actions have been taken by the Ministry to mitigate this issue including the approval of a resource strategy and a dedicated project team.

The current planned timeframe to complete the SIMS project is December 2020, which coincides with the end of technical support of the legacy system. As the project progresses, the Ministry will need to be vigilant over the project timeline to avoid running systems without technical support and to maintain reliable services to students, institutions, and ministry staff. Despite the extension of the timeframe, the project is forecasted to be completed within the approved budget.

In early 2017, the Ministry approved switching to an Agile project management approach for the execution phase of SIMS as the Waterfall approach would hinder its ability to deliver the project by December 2020. The Ministry is aware of the new requirements and activities introduced with this change and plans to address them as part of the preparation phase.

The Ministry plans to revise the SIMS project governance framework by March 2018 to incorporate practices envisioned under the Agile approach. Timely implementation of the new framework will be important for the success of the execution phase and to ensure effective project oversight, monitoring, and reporting.

1.0 Business Case

StudentAid BC is supported by a number of legacy systems including the Student Financial Aid System (SFAS). These legacy systems will no longer have technical support post December 2020. Without technical support, system failures are at risk of not being recoverable. These systems also lack the capability to adopt to the changing provincial and federal requirements in a timely or cost-effective way. Not meeting these requirements in a timely fashion would affect the ability of the Ministry to deliver StudentAid BC services to its stakeholders.

The Ministry developed and submitted a business case to the Office of the Chief Information Officer (OCIO) in 2013. The business case proposed a multi-phased capital investment, referred as the Modernizing StudentAid BC (ModSABC) initiative, to replace the technology and provide an information system with robust data analytical tools. The investment would enable stakeholders to make informed decisions that maximize their return on investment of post-secondary education.

The Ministry obtained the approval of the ModSABC business case in two stages: initially for the Business Intelligence (BI) project and later for the replacement of legacy technology through a project known as Student Information Management System (SIMS).

Business cases assist organizations in assessing the merits and critical assumptions of projects or initiatives, and allow for a robust assessment of the expected costs and benefits. These benefits form the basis for approving a project. Managing the project to achieve the desired outcomes helps ensure stakeholder expectations are met. To determine the level of success of a project, a post-implementation review is typically conducted six to eighteen months after implementation.

The ModSABC business case estimated it would achieve $11.3 million a year in financial benefits based on operational savings and other student loan recoverable assumptions. To date, the majority of these benefits have been achieved independent of the ModSABC initiative, suggesting that the identification and quantification of the project benefits were not sufficiently detailed.

The Ministry advised that project benefits will be updated prior to the execution phase and a post-implementation review will be conducted at the end of the SIMS project.

With the shifting focus of ModSABC benefits, there is an opportunity for the Ministry to revise the business case to reflect changes to the initiative, with focus on defining an updated set of benefits and realization targets. This would include establishing baselines and a plan for monitoring, measuring and reporting on the level of benefits realized. A revised business case with an updated set of project benefits would form the basis for a post-implementation review.

Recommendations:

(1) **The Ministry should revise the ModSABC business case including related project benefits.**

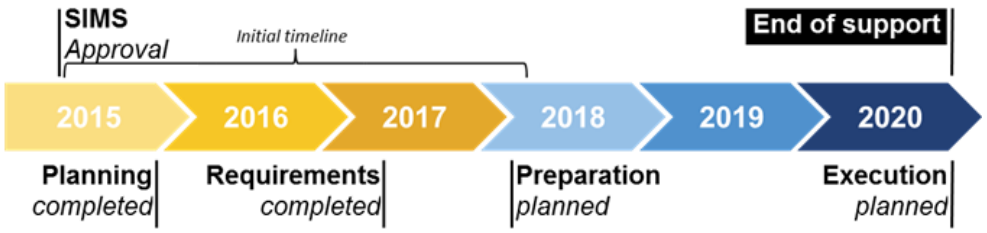
(2) **The Ministry should ensure a post-implementation review of the SIMS project is conducted.**

2.0 Project Timeline, Phases and Approach

A critical component of the ModSABC initiative is the implementation of the SIMS to replace legacy technology. In line with the review scope, the next sections of this report are primarily focused on the SIMS project giving its complexity, associated costs, and strategic importance for the Ministry.

2.1 Timeline and Phases

In April 2015, the OCIO approved the funding for the SIMS project for a three-year timeframe (as planned by the business case) leading to a completion date of March 2018. The current planned timeframe to complete the SIMS project is December 2020. The figure below outlines the timeline and the phases of the project:



Some of the key activities for each phase are shown in the following table:

Phase	Key Activities
Planning Phase *Completed December 2015*	• Identification of ModSABC outcomes
Requirements Phase *Completed April 2017*	• Preparation of the conceptual solution and implementation strategy • Development of a high-level transformation plan and initial roadmap
Preparation Phase *Planned completion – March 2018*	• Development of project management plans including change management, system decommissioning, business solution blueprint, and a detailed transformation plan/roadmap
Execution Phase *Planned completion – December 2020*	• Developing, testing, and implementing capabilities through multiple releases, including end user training

The SIMS project is currently expected to be completed over a five-year period as a number of milestones and deliverables have been deferred, reprioritized, or adjusted to address project challenges, for example:

- The Ministry gathered the business and technical requirements and selected a technology solution. This work was initially planned to be completed in December 2016, but was extended to April 2017. The primary reasons for the delay involved the limited capacity of ministry staff to devote the time needed on the project, as well as a greater level of complexity of the project than initially expected.
- An eleven-month preparation phase was introduced (before the execution phase) in order to complete some outstanding deliverables, assess the feasibility of decommissioning the legacy systems, and better prepare for the development and implementation of SIMS. This new phase is scheduled to be completed in March 2018.

During the execution phase, the new system will be deployed through multiple releases with the legacy systems continuing to operate as their functionalities gradually shift to the new system.

The Ministry plans to complete the implementation of SIMS by December 2020. This timeframe coincides with the end of SFAS technical support, leaving no buffer for delays. The Ministry plans to address this risk through:

- Budgeting sufficient time in preparing each release in the execution phase, and
- Prioritizing the release of critical system functions to enable student financial aid applications through the new system in June 2020.

While the Ministry has identified these mitigation activities and made some progress towards addressing the root causes of the project delays, these have yet to be fully addressed. As a result, there remains a risk that all intended functionalities will not be ready by December 2020.

Given the strategic importance of the SIMS project, ensuring successful and timely project implementation is critical to the ongoing support of the StudentAid BC program. As the project progresses, the Ministry will need to ensure its mitigation efforts are sufficient to allow the project to be delivered as planned and within the approved timeframe. This may include revising the project timeline to add a buffer before the technical support ends.

Recommendation:

(3) The Ministry should ensure the SIMS project is prioritized and completed within the current timeline.

2.2 Project Management Approach

The SIMS project began using a sequential project management approach, known as Waterfall, which requires extensive planning and documentation. The Ministry recognized that the complexity of the StudentAid BC program, combined with the changing environment, would necessitate frequent adjustments to project requirements and documentation. This would hinder its ability to deliver the SIMS project by December 2020.

In April 2017, the Ministry approved switching to an Agile project management approach for the execution phase. Agile is an iterative, team-based approach emphasizing the early and continuous delivery of system capabilities. Capabilities are features that are completed to achieve the objectives of a new system. A development team spends between two to four weeks, known as sprints, to develop a set of capabilities. Typically, several sprints are needed to complete a release that can be implemented and deployed to end users.

As the SIMS project is the Ministry's first major initiative using Agile, a hybrid approach was adopted. This allows the use of detailed planning documentation produced during previous phases to ensure that the project requirements are clearly understood before the execution.

The merits of using a hybrid approach were confirmed during the assessment of the available technology solutions. While the Ministry recognizes that this approach mitigates some project challenges, it also introduces new ones, such as:

- Adopting a new SIMS project structure, including project governance and management practices.
- Selecting and training project resources with Agile expertise.

The Ministry plans to address these as part of the preparation phase currently underway.

3.0 Project Governance

Project governance is a set of defined practices that enable appropriate oversight of a project through regular review and approval. This includes monitoring the project quality, risks and resources. Effective project governance also establishes the decision-making framework to be applied within a project, including the roles, responsibilities, and accountabilities for key project members.

As part of the governance framework implemented for the SIMS project, an Executive Sponsor was appointed with overall responsibility for delivering this project and other components of the ModSABC initiative.

The governance framework also includes the involvement of a Project Board and other committees as follows:

- The Board provides general oversight and direction, as well as makes strategic decisions. It is comprised of senior management from the Ministry of Advanced Education, Skills & Training and representatives from the Ministry of Finance and the OCIO.

- The Strategic Working Committee, a subgroup of the Project Board, provides additional scrutiny and operational guidance, as well as reviews project deliverables. This committee is comprised of ministry executive directors.

- An Advisory Committee was in place during the requirements phase assigning resources to deliverables and ensuring that business requirements enable the project outcomes. Once the requirements phase concluded, this committee was discontinued as it was not a part of the planned governance structure of subsequent phases.

The Ministry plans to revise its governance framework before beginning the execution phase to align with practices envisioned under the Agile approach. As part of this activity, the Ministry also plans to redefine project roles and responsibilities, project monitoring, and decision making.

Until the new framework is implemented, the Strategic Working Committee is leading the SIMS project under the oversight of the Project Board. At the time of this review, some key roles and responsibilities have not been formally assigned.

Recommendation:

(4) The Ministry should ensure the SIMS project governance framework is revised and implemented to provide effective oversight, monitoring, and decision making for the execution phase.

Approvals

Information Technology (IT) implementation projects have many deliverables that require a quality review by appropriate groups to ensure they meet their objective and expected quality. During the requirements phase, the Ministry assigned quality review sign-off to a number of individuals and groups including the Executive Sponsor, Project Board, Advisory Committee, and Initiative Lead. The governance framework established a five-day timeframe to review a deliverable with extra time permitted for larger deliverables.

The Ministry maintained a log to track the progress of the deliverables through the review process. An assessment of the log showed that deliverables were typically assigned to two review groups and each group took an average of 60 days to ratify a deliverable.

Some of the factors identified by the Ministry that led to this extended timeframe were staff turnover, project resources having other operational priorities, and the requirement for group consensus.

As the project progresses, the Ministry will need to ensure a more timely review process. This could include early review and tracking of midpoint milestones for larger deliverables to confirm that products under development are meeting expectations and progressing along the planned timeline.

Recommendation:

(5) The Ministry should review its approval process to ensure timely sign-off of SIMS deliverables.

Execution Readiness Assessment

At key milestones within an IT implementation project, a determination is made about whether a project is ready to proceed to the next stage. When performing this assessment, acceptance criteria and related thresholds are important features.

The Ministry plans to assess the readiness of the SIMS project for the execution phase. The SIMS roadmap recommends using a checklist to review all deliverables before moving to the next phase. However, existing project documentation does not clearly identify acceptance criteria and thresholds that will help the Project Board make this determination.

Recommendation:

(6) The Ministry should define the acceptance criteria and thresholds to determine the readiness of the SIMS project prior to proceeding to the execution phase.

Quality Controls

During the execution phase of the SIMS project, capabilities will be developed and implemented through sprints and releases. The Ministry will determine whether the new capabilities perform according to the agreed-upon business requirements through the following quality control activities:

- **Technical testing:** during each sprint, sprint teams conduct technical and integration tests in collaboration with their product owner. Achievements and obstacles are presented to a support team made up of subject matter experts.

- **User acceptance testing:** the support team leads the user acceptance testing and approves releases before implementation. User testing teams are independent from those who developed the capabilities.

Sprint teams will reschedule unsuccessful capabilities to a subsequent sprint and review the root cause of the issue.

Given the complexity and significance of the SIMS project, the Ministry will benefit from defining individual responsibilities, sequencing, and documentation requirements for each of these activities.

3.1 Risk Management

For government IT implementation projects, risk management has two primary objectives: ensuring that the new system complies with government standards and regulations, and that risks impacting the success of a project are appropriately mitigated.

Government Standard Requirements

Complying with provincial government policies involves assessing new IT systems through three general requirements:

- **A Privacy Impact Assessment (PIA)**: ministries must demonstrate that a new IT system will comply with the *Freedom of Information and Protection of Privacy Act* with respect to privacy protection responsibilities. A PIA is required to be completed prior to the implementation of a new IT system.

- **A Security Threat and Risk Assessment (STRA)**: ministries must identify security threats and any requirements necessary to protect a new IT system, ensuring the application uses common government security and financial management practices. Government policy requires ministries complete and maintain a STRA throughout an IT implementation project.

- **A Financial Risk and Controls Review (FRCR)**: ministries must demonstrate the adequacy of a new financial system's controls to reduce the risk of loss, error, and fraud in the Province's public accounts. Government policy requires the Office of the Comptroller General to accept the FRCR prior to implementing or upgrading a financial system.

The Ministry plans to complete the PIA and STRA for the SIMS project before the execution phase. While an FRCR is not currently scheduled, the Ministry acknowledges the importance of confirming with the Office of the Comptroller General whether this review is required for the SIMS project. This will help determine whether there is a need to build time into the schedule to conduct an FRCR and if so, clarify whether any system modifications are necessary to comply with government policy.

Project Risk Management

As part of its project management practices, the Ministry has the following risk management process for the SIMS project:

- Risks can be identified by project team members at any time.
- Identified risks are entered into the project's risk log and assigned to a risk owner.
- Risk exposure levels are assigned based on impact and probability, and are regularly reviewed.
- Risks and mitigation plans are monitored at various levels of the project structure, with the Project Board focusing on high-exposure risks.

The current risk management process applied for the SIMS project is planned to be updated to reflect the new project governance framework for the Agile approach including new project roles and responsibilities.

Project Interdependency

A common feature of IT implementation projects is identifying and managing project interdependencies. Project interdependency is a term used in the context when a project depends on other project(s) to deliver its capabilities. Effective management of interdependencies helps ensure mutual requirements are addressed, which prevents unnecessary delays.

Two primary concurrent projects exist within the SIMS environment: the Ministry's BI project and a federal government initiative to modernize the service delivery processes of the National Student Loans Service Centre (NSLSC) and their technical systems.

The BI project has identified a number of interdependencies with the SIMS project. However, SIMS project documentation does not clearly identify these interdependencies. The Ministry advised that when it prepared this documentation, the BI project was scheduled to be completed prior to SIMS, which would ensure the alignment with the BI business and technical requirements already established.

The federal government is modernizing the processes and replacing the NSLSC systems in collaboration with integrated provinces including British Columbia. While the Ministry is working with the federal government parties to manage SIMS interdependencies with the NSLSC, those have yet to be documented.

Recommendation:

(7) The Ministry should ensure SIMS project interdependencies are documented and effectively managed.

3.2 Resource Management

A key project management success driver is ensuring a project has sufficient human resources with appropriate expertise to deliver the project outcomes. This is a common challenge for IT implementation projects.

Resource management involves identifying and mapping the resource needs, including the skills, effort, and number of individuals required to determine how the resource profile will be filled (e.g., internal or contracted staff, new hires or temporary staff).

For the SIMS project, the Ministry has used a combination of internal staff and contractors. Contractors have performed key project roles including Project Manager, Enterprise and Business Architects, Business Analysts, and Developers. Ministry staff have provided strategic and day-to-day direction, as well as preparing and reviewing deliverables. These responsibilities were considered over and above their existing ministry operational duties.

A lack of staff resources has been continuously identified and reported as a risk throughout the SIMS project. This risk was a recurring issue during the requirements phase and attributed as one of the primary causes of delay in completing project deliverables.

In recognition of the need to secure additional resources, a resourcing strategy was developed and submitted to the Ministry's executive for approval. It proposed the implementation of a dedicated SIMS project team as well as options to reorganize areas and branches related to StudentAid BC. The resourcing strategy was approved in September 2017.

The Ministry plans to hire and contract the additional resources to supplement the SIMS project team. With the time required to onboard resources, there is a need to assess any potential impact on the project timeline and adjust the plans accordingly.

Recommendation:

(8) The Ministry should manage SIMS resources so they are sufficient to allow the delivery of the project within the timeline.

4.0 Project Monitoring

Project monitoring identifies whether a project remains on track to accomplish the scope, schedule, and budget defined in the business case. It acts as an early signal of project pressures and identifies where adjustments may be needed. If changes are necessary within the project, the impact of these changes needs to be clearly documented and approved.

4.1 Reporting

The Ministry uses a dashboard to report the status of the SIMS project to the Project Board on a monthly basis. Six indicators are described on the project dashboard: costs, schedule, scope, risks, issues, and overall project health. These indicators are assessed based on three ratings (i.e., green, yellow, and red). Documenting the criteria for establishing these ratings would enhance clarity of the dashboard.

The dashboard also includes information about completion dates for key deliverables, costs, as well as key risks and issues. While it is considered an important monitoring tool, the project dashboard could be further enhanced by ensuring that explanation for changes on deliverables and related deadlines are consistently recorded.

The Ministry and the OCIO have ongoing communication to discuss project progress and monitor project changes relating to scope, schedule, budget, and benefits. On a quarterly basis, the Ministry reports the progress of the SIMS project to the OCIO using a dashboard with similar indicators and ratings as the ministry internal dashboard. Inconsistencies were noted when comparing the dashboards submitted to OCIO in two consecutive quarters in 2016 with the corresponding ministry dashboards. The Ministry attributed this to a different level of sensitivity between the two types of dashboards.

As the project continues, the Ministry would benefit from a more defined process to report on the project's progress and overall status. This would also help ensure reporting is consistent with the rating thresholds documented in the quarterly dashboards submitted to the OCIO. If ratings differ, differences need to be communicated and agreed to by the Project Board and the OCIO.

Recommendation:

(9) The Ministry should establish clear criteria to determine indicator ratings for its internal dashboard.

4.2 Budgeting

A project budget provides the Executive Sponsor with the capital and operating costs authorized for the project. A budget is first developed for the business case, and then, as deliverables are completed and more information about future costs become known, forecasts are refined to ensure that the project continues to be appropriately funded.

The budget for the SIMS project is $12.1 million, $7.6 million of which is capital. The current forecast shows that the Ministry expects to complete the project under its approved budget. A breakdown of the budget and forecasted costs, at August 31, 2017, are as follows:

SIMS Project Costs *(in millions)*			
Type of costs	Budget	Forecast *(Including actual)*	Actual
Capital costs	$7.6	$7.1	$1.9
Operating costs	$4.5	$4.5	$0.2
Total	**$12.1**	**$11.6**	**$2.1**

Source: Ministry of Advanced Education, Skills & Training

The capital budget is funded by the OCIO and was approved with the SIMS portion of the business case. The operating budget includes funding received from the federal government for the delivery of the Canada Student Loans Program. Beyond the capital and operating budgets, costs associated with time spent by ministry staff on the project are absorbed through the Ministry's voted appropriation.

The Ministry reports a three-year forecast in the monthly project dashboard. Adjustments to the forecast have been limited to the current fiscal year as detailed information on activities of the future phases was not available.

The Ministry indicated that the forecast for the project will be revisited before moving to the execution phase. This will help ensure that the SIMS project continues to be sufficiently funded and, if the forecast identifies any budget excess to requirements, this excess could then be released to other government priorities.

4.3 Change Controls

Changes to scope, timeline or budget are a common part of a project. An effective change control process helps ensure that changes are appropriately initiated, assessed, approved and incorporated into the overall project plan. Appropriate documentation, reporting, communication, and aggregation of changes help ensure that both the project team and key stakeholders are properly informed about how changes will impact the project outcomes.

The Ministry has defined a process for managing changes to the SIMS scope, timeline, and budget. Changes are required to be supported by documentation, including reasons, options and their related impact. Change requests are tracked in a change log and approved by the Project Board.

While a formal project change management process is in place, there have been changes occuring on the SIMS project that were not recorded in the change log or supported by appropriate documentation. These include the rescheduling of some deliverables of the requirements phase and the extension of the project completion date to December 2020.

Although these changes were briefly referenced in other documents, a change request would enable enhanced traceability and formal justification for these adjustments. In addition, aggregating these changes in a log provides a clearer view of their impact on the project.

Recommendation:

(10) The Ministry should ensure project change requests are clearly documented and supported by appropriate justifications.

5.0 Organizational Change Management

The implementation of a new IT system typically involves changes in day-to-day operations, as well as an organization's structure and culture. As people who are affected by changes respond differently, helping staff prepare for them is a significant consideration when implementing a new IT system.

To help individuals embrace changes to their day-to-day work, it is important to apply change management activities from an early stage of a project and to carry them on beyond the project implementation if necessary. Change management begins with a strategy and a set of plans focused on helping people through the transition.

The business case recognized the ModSABC initiative would need the support of change management activities to successfully deliver the project outcomes. This was reinforced in a 2015 lessons-learned exercise where the Ministry identified that resistance to change had not been well addressed during the first part of ModSABC. In early 2017, an internal survey identified areas where ministry staff were not fully supportive of or ready for the envisioned changes.

The Ministry has started to provide change management training to key staff. It is also planning to hire a change management and communication lead to help strengthen existing practices and improve accountability. While there remains no formal change management plans to date, these are expected to be developed prior to the execution phase.

Recommendation:

(11) The Ministry should ensure organizational change management plans and related strategies are developed, implemented, and closely monitored.

Appendix 1 – Summary of Recommendations

1	The Ministry should revise the ModSABC business case including related project benefits.
2	The Ministry should ensure a post-implementation review of the SIMS project is conducted.
3	The Ministry should ensure the SIMS project is prioritized and completed within the current timeline.
4	The Ministry should ensure the SIMS project governance framework is revised and implemented to provide effective oversight, monitoring, and decision making for the execution phase.
5	The Ministry should review its approval process to ensure timely sign-off of SIMS deliverables.
6	The Ministry should define the acceptance criteria and thresholds to determine the readiness of the SIMS project prior to proceeding to the execution phase.
7	The Ministry should ensure SIMS project interdependencies are documented and effectively managed.
8	The Ministry should manage SIMS resources so they are sufficient to allow the delivery of the project within the timeline.
9	The Ministry should establish clear criteria to determine indicator ratings for its internal dashboard.
10	The Ministry should ensure project change requests are clearly documented and supported by appropriate justifications.
11	The Ministry should ensure organizational change management plans and related strategies are developed, implemented, and closely monitored.