

From: Ferguson, Phil [Phillip.Ferguson@gartner.com]
Sent: Thursday, May 5, 2011 3:34 PM
To: Parkinson, Margaret EDUC:EX
Cc: Shypitka, James M EDUC:EX
Subject: RE: Gartner on information system

Hi Margaret,

Larry and I have talked and we are scheduled to meet on Monday, May 9th in Vancouver.

Thanks,

Phil

From: Parkinson, Margaret EDUC:EX [mailto:Margaret.Parkinson@gov.bc.ca]
Sent: Thursday, May 05, 2011 12:15 PM
To: Ferguson, Phil
Cc: Shypitka, James M EDUC:EX
Subject: FW: Gartner on information system

Phil

I know Larry has your number, but perhaps you could give him a call and connect.

Thanks.

Margaret Parkinson, CA
Director, Business Management
Information and Technology Management Branch
Ministry of Education
Phone 250-356-2350 Fax 250-356-1520

From: Shypitka, James M EDUC:EX
Sent: Thursday, May 5, 2011 12:10 PM
To: 'lkuehn@bctf.ca'
Cc: 'mmackenzie@bctf.ca'; 'vwarner@bctf.ca'; Parkinson, Margaret EDUC:EX
Subject: Re: Gartner on information system

Thank you for your response, I will arrange for our Gartner lead to contact you to schedule.

James

From: Larry Kuehn [mailto:lkuehn@bctf.ca]
Sent: Wednesday, May 04, 2011 08:38 AM
To: Shypitka, James M EDUC:EX
Cc: Moira Mackenzie <mmackenzie@bctf.ca>; Verna Warner <vwarner@bctf.ca>
Subject: Gartner on information system

Dear Mr. Shypitka,

I have been asked by Susan Lambert, BCTF president, to contact you to set up a time to meet with the consultant looking at what comes after BCeSIS. I am the staff person who has been doing much of the BCTF staff working on this file and have been asked to meet with Phil Ferguson from the BCTF.

My direct phone line is 604-871-2255 and my email is lkuehn@bctf.ca.

Thanks for your assistance.

Larry Kuehn

Larry Kuehn, EdD
Director of Research and Technology
BC Teachers' Federation
bctf.ca

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MINISTRY OF EDUCATION BRIEFING NOTE

PREPARED FOR: Honourable George Abbott, Minister, for **Information** at the request of **Business, Technology and Online Services Division**

SUBJECT: Gartner Report on BCeSIS

KEY POINTS:

- 1) British Columbia enterprise Student Information System (BCeSIS) is a web-based student information system used by boards of education, independent school authorities, First Nations school authorities, and the Ministry of Education.
- 2) In September 2010, school operations were severely impacted by significant system performance and availability issues. The Ministry has worked closely with technical experts to resolve the underlying causes of the problems and system stability has been restored.
- 3) In November 2010, the vendor of the eSIS software was acquired by Pearson Canada Inc., which announced its intention to drop support for eSIS in the summer of 2012.
- 4) The Ministry and school districts are preparing a long-term strategy for providing a shared student record service that will support personalized learning.
- 5) Gartner Consulting was engaged to undertake an independent review of current and future student information needs and recommend options.

BACKGROUND:

British Columbia enterprise Student Information System (BCeSIS) is a web-based student information system used by boards of education, independent school authorities, and First Nations school authorities. BCeSIS currently contains the records of more than 600,000 students and early learners in 56 school districts, more than 1,575 public, independent and First Nations schools and more than 300 StrongStart BC early learning centres.

BCeSIS is the primary source for student and accountability data collected from schools by the Ministry of Education. Its cost is shared between school districts, independent schools, First Nations schools, and the Ministry. Under a memorandum of understanding, schools pay \$10 per student per year while the Ministry pays the remainder. From 2003 to date, BC (the ministry and school districts) has spent \$89,063,441 of which \$73,163,843 is for operating costs and 15,899,598 is capital for licenses and customization.

When BC acquired and implemented BCeSIS, it was decided to implement a single, province-wide solution. This adoption of standard practices, a single shared database, and features in the

eSIS software have dramatically improved access to information and the ability to share data about individual students. This flexibility will become critical as schools explore new approaches to educational delivery within the context of personalized learning.

The decision to implement on a provincial level has positioned BC as a leader of current market trends. Most current enterprise SIS implementations are based on a district-level deployment; however, the trend is to move toward state-wide and province-wide deployments to facilitate common business processes, cross-enrollment and enterprise reporting and analysis.

Over the years, BCeSIS has generally been stable with minor capacity issues occurring at the start-up of some school years as new schools came on board. However, in September 2010, there were a number of significant performance and availability issues with the system. Although the problems identified have been addressed, it raised questions as to whether the system has the capacity required to handle the load at peak times of the year, particularly as more districts make use of additional functionality.

Licensing for the BCeSIS software was acquired from Administrative Assistants Ltd (aal) in 2003, which at the time was a market leader and the best product for a province-wide deployment. In 2005 a contract was awarded to Fujitsu Consulting Canada Inc., to host BCeSIS and provide operational support. In 2010 the Fujitsu services contract was renewed until August 2015.

In November 2010, aal was purchased by Pearson Canada Inc.

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Pearson School Systems has offered to grant the ministry a free province-wide license for PowerSchool, one of their student information products. Under procurement policy, this would be considered a direct award to Pearson and so switching from aal to PowerSchool is not a tenable option. In addition, doing so limits the province's options to explore other viable solutions on the market. This is particularly important within the context of a personalized learning education system where flexibility is paramount.

District and Ministry staff are working together to find a long-term student information strategy for BC. The goal is to identify a solution that addresses changing educational needs and supports personalized learning, while building upon existing investments and successful collaborative working arrangements.

To support this goal, the Ministry convened a Student Information System Executive Steering Committee (SISESC) comprising Ministry representatives as well as District superintendents, secretary-treasurers and principals. The purpose of SISESC is to actively provide strategic guidance and advice to the Ministry regarding the future of SIS services.

Finally, the Ministry engaged the services of Gartner, an external consultant, to conduct an independent, province-wide assessment of the current BCeSIS system to assess the extent to which the system is able to meet the current and future needs of education within BC and to provide recommendations regarding the development of a long term strategy for a common student information system.

DISCUSSION:

The Gartner report represents the findings by and responses to Gartner through a province-wide consultation process as well as Gartner's software vendor research and experience in the K-12 education sector throughout North America. Specifically, Gartner undertook the following activities:

- A requirements workshop with a sample of small, medium and larger School Districts representing urban, rural and remote areas;
- An authenticated online BC-wide survey of over 500 school district representatives;
- Key stakeholder interviews including BCTF representatives and District and Ministry officials;
- A health check of the current BCeSIS;
- An alternatives assessment;
- A market scan based on BC business and requirements needs to identify viable SIS vendors.

As a result of these activities, Gartner reported the following conclusions:

- BCeSIS is one of the few successful large-scale implementations in North America.
- Schools districts support a common system and want to make it work.
- BCeSIS is capable of supporting the business and technical requirements in the short-term but not in the long term.
- Personalized learning requires more accessible, flexible and responsive technology to enable learners to achieve success.
- There are viable vendor solutions available in the marketplace that generally align with BC's strategic direction and provide the majority of required business functionality.

Two broad categories of options were identified to address BC's long-term needs: (1) develop a custom solution for BC (either from scratch/open source), leverage the Province's ICM tool, or enhance BCeSIS; or (2) acquire a commercial-off-the-shelf solution.

Gartner does not consider development of a custom solution as a viable option because it would take at least five years to complete the development, plus an estimated two years to transition to the new system. As well, the total cost of ownership would be excessive as the Province would have to continue development in line with education sector changes. In addition, BC would not be able to take advantage of integration and alignment with other learning solutions that commercial-off-the-shelf vendors have built into their products.

Gartner also assessed the fit of the ICM tool (Oracle Siebel platform) as a student information system. Oracle has confirmed that the system is designed for case management and would require significant customization to accommodate the SIS functional requirements. Adopting this platform would also limit the ability to integrate easily with other learning systems. Finally, there are no precedents, successful or otherwise; no other jurisdiction in North America has attempted to implement a student information system on the Oracle Siebel case management platform.

In Gartner's opinion, there are a number of products on the market that would meet at least 80% of BC's needs and would continue to evolve with the Province's education system. Gartner recommends that the Ministry procure a new student information system, by first issuing a Request for Information (RFI) to determine vendor capabilities to meet BC's requirements, followed by a Request for Proposals (RFP) to ensure a solution is procured that is aligned with BC's strategic direction, requirements, goals and objectives.

The Gartner Report will be made available to the public upon acceptance of project deliverables by the province.

<u>Contact Information</u>		Approved by:
Student Certification Branch 356-7690 Department File	ADM initial	James Gorman Deputy Minister
		Date signed:

A Report for
BC Ministry of Education

Review of Student Information Systems



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Executive Summary

Executive Summary

The Ministry engaged Gartner to conduct an independent, province wide assessment of the needs and expectations for a student information system, assess whether the current BCeSIS system can meet the current and anticipated future needs of education within the Province, assess competitive market alternatives, and provide recommendations. In order to achieve this holistic view, Gartner conducted the following: (1) requirements workshops with a sample of small, medium and larger School Districts representing urban, rural and remote areas, (2) an authenticated online BC wide survey of over 500 school district representatives, (3) key stakeholder interviews and (4) a debrief with a representative of the Southern BCeSIS Consortium following the province-wide meeting they sponsored on February 7, 2011 in Abbotsford.

The study was conducted during the period February 2011 to June 2011. Workshop participants, survey respondents and interviewees represent individuals at all levels of the education sector in BC from day to day users of BCeSIS, to teachers, principals and superintendents in districts and included representatives from school districts which do not use BCeSIS. The Ministry of Education and the BC Teachers Federation were also represented. This report, and associated analysis, represents the findings and responses provided to Gartner through this consultation process as well as Gartner's software vendor research and experience in the K-12 education sector throughout North America.

When BC acquired and implemented BCeSIS more than six (6) years ago, it was decided to implement a single, province-wide solution as opposed to the traditional district or school level implementations. This solution is Web-based, taking advantage of the Internet to the greatest extent possible, and is based on the technical infrastructure available in each school district. The key rationale of all stakeholders for deploying a province-wide solution was (and still is) the requirement to provide common access to each student record.

Consensus at the Common System Meeting in Abbotsford sponsored by the Southern BCeSIS Consortium was confirmed by the study - school districts support a common system and want to make it work.

This decision to implement on the provincial level has positioned BC as a leader of the current market trends. BC is one of the few successful large-scale implementations in North America. Several other jurisdictions in North America are looking at BC's model and considering similar deployments at the state or provincial level. The majority of current enterprise SIS implementations are based on a district-wide deployment, however, the current trend is moving toward state-wide and province-wide deployments as well as centralized funding models, to facilitate common business processes, cross-enrollment, and enterprise reporting and analysis. Consequently, several of the K-12 software vendors are beginning to architect their solutions to support these scalability and enterprise-wide market demands.

BC also has a requirement to enable the integration of various learning programs within several different types of schools (traditional classroom, distance learning, independent schools, First Nations schools), using a variety of delivery methods concurrently for a given student. Although BC is further advanced than many other jurisdictions, K-12 software vendors are recognizing this requirement for many of their clients and, as a result, several vendors have expressed an interest in evolving their solutions to provide this type of flexibility.

Similarly, BC has evolving requirements in the context of the continued implementation of personalized learning throughout BC's education sector. Personalized learning within a 21st Century Education context will require more accessible, flexible and responsive technology to

enable learners to achieve success. The vendor marketplace is gaining an understanding of the necessary system support requirements and are beginning to incorporate the necessary level of flexibility into their products. Over time, it is anticipated that software solutions will be designed to provide the type of support needed for personalized learning in BC.

Given these advanced requirements and evolving trends, BC is faced with a decision to either continue to invest in and enhance BCeSIS, or to look for alternative solutions necessary to deliver key educational requirements.

When BCeSIS was initially selected as the Student Information System (SIS) for the Province, the decision to use BCeSIS in a given school district was voluntary. The implementation of BCeSIS was staggered across school districts; as a result, school districts are at different stages of maturity in their implementations. Consequently, several of the features and functionality of the product are used in an inconsistent manner across districts. As a result, primary uses of BCeSIS are administrative in nature (e.g., student registrations and transfers, course scheduling and timetables, ministry reporting). The current system is meeting the basic educational needs of the Province's schools, districts and the Ministry. However, schools are not taking advantage of all of the functions the system has to offer and as a consequence, it is not delivering the full functional needs that exist nor is it well positioned to meet the future needs of education within BC. The current deployment does not adequately support the future direction of education (e.g., personalized learning, assessing impacts on student learning, using student data to proactively inform the educational process).

Gartner conducted a health check of the current BCeSIS system using Gartner's system assessment methodology. This methodology helps determine the health of the current application based on business, technical and operational criteria as well as its strategic viability. Overall each of the criteria scored between low and medium indicating that BCeSIS is not well positioned to meet BC's strategic and evolving system needs.

As a result, Gartner concludes that BCeSIS is capable of supporting the business and technical requirements in the short-term (next 1–3 years) but the risk to the BC education sector of not being able to align with the future strategic direction nor satisfying future requirements, as well as the cost of maintaining the current application will increase significantly over time.

Through consultation with stakeholders and review of existing documentation, Gartner identified a number of alternatives for BC to consider moving forward:

- Develop a solution within the provincially owned Integrated Case Management (ICM) framework;
- Replace BCeSIS with a custom developed solution, including open source;
- Continue with BCeSIS and evolve the application to meet strategic direction and future requirements; and,
- Replace BCeSIS with a Commercial off The Shelf (COTS) solution.

A series of alternatives assessment workshops were conducted and, as a result of these workshops, the ICM and open source solutions were deemed not viable alternatives for the following reasons:

- A custom solution would require significant continuous investment to evolve and maintain and total cost of ownership is likely to be excessive. Additionally, the anticipated development life cycle for a comprehensive SIS solution would introduce significant risk to operations over the next 3–5 years and BC would not be in a position to easily take advantage of built in integration and alignment with other learning solutions

and technologies that K-12 SIS COTS vendors have designed into their solutions, nor the evolving industry trends and best practices in the education sector.

- The ICM platform (Oracle Siebel) is designed for case management and would require significant customization and development to be able to accommodate the identified SIS functional requirements and transaction processing. Custom development of a SIS solution within the ICM framework would also limit the ability to easily integrate with other evolving learning systems and technologies.
- There is little evidence of a common, well-developed strategy to develop an Open Source solution in the K-12 software domain and it is anticipated that the development life cycle from defining requirements through deployment would be more than 5 years once a strategy was completed, thus introducing a high degree of risk to the BC education sector. Although some attempts have been initiated to develop K-12 Open Source SIS solutions, there does not appear to be any formal, structured funding mechanism and approach to designing and developing a solution which would meet the future needs of the BC education sector, nor to scale to the extent required to provide a single, province-wide student database.

Thus, ICM and custom developed solutions were excluded from further assessment.

Two viable alternatives were determined: (1) continuing with BCeSIS and evolving the system; or (2) procuring a new SIS COTS solution. Each of these two viable alternatives were then assessed through the application of two sets of criteria; Mandatory and Weighted.

The alternative assessment concluded that BCeSIS, as currently deployed, is not meeting the business, technical or operational needs of BC and is not a viable future alternative. Within the current marketplace there exist multiple vendors that would be better able to support the direction of BC and be able to provide the technical architecture necessary to achieve its objectives and goals.

Gartner conducted an overall North America SIS market scan, based on BC business and requirement needs, to identify viable SIS vendors. Based upon the market scan results, discussions with vendors and analysts, and core stakeholders it was determined that there are viable vendor solutions available in the marketplace. Generally the solutions are aligned with BC's strategic direction and the viable vendors' solutions currently provide the majority of required business functionality.

Based upon the alternatives assessment, the market scan, and the consensus of key BC stakeholders it is recommended that BC conduct a competitive procurement process to acquire a new SIS COTS solution. Gartner recommends that BC complete a request for information (RFI) to determine vendor capabilities to meet BC's requirements, followed by a request for proposal (RFP) process to best ensure a solution is procured that is aligned with BC's strategic direction, requirements, goals and objectives.

Introduction and Project Background

Introduction and Project Background

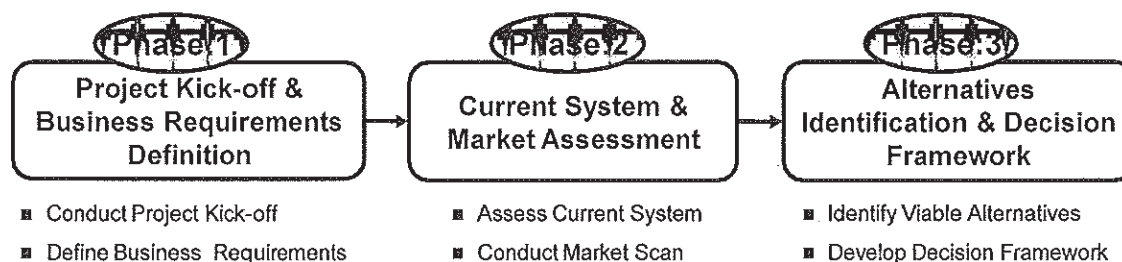
Introduction

Gartner Inc. (Gartner) was engaged by the British Columbia Ministry of Education (the Ministry) to review the current student information system (BCeSIS) in use within the Province. The project was conducted during the period of February 2011 to June 2011. The overall goals and objectives of this project were to complete the following:

- Identify future business requirements for a Student Information System that will support BC's strategic business goals.
- Determine whether the currently deployed BCeSIS will be able to meet these future business requirements.
- Assess whether there are alternative SIS solutions in the market that have the capability to support these requirements.
- Develop a decision making framework that would enable BC to make a decision about the future deployment of a SIS from among the defined alternatives.
- Complete an alternative assessment to identify viable alternatives and provide a scored recommendation.

In order to accomplish the above goals and objectives Gartner conducted a three phased project as demonstrated in the figure below:

Figure 1. Project Approach



Project Background

BC engaged Gartner to conduct an independent, Province wide assessment of the current BCeSIS system to determine how the system is meeting the current needs and anticipated future needs of education within the Province. In order to achieve this holistic view Gartner and BC agreed upon the following approach:

- Conduct all-day critical requirements workshops with a mixture of small, medium and large School Districts, representing rural, urban and remote areas
- Conduct an authenticated online survey across BC school district participants
- Conduct interviews with school districts, the Ministry and the BC Teachers Federation (BCTF)

The goal was to ensure that the requirements covered would potentially address needs of BC's SIS environment which consist of:

- 60 School districts as well as independent schools, First Nations schools and Yukon schools.
- Almost 2000 Schools
- Approximately 600,000 Students
- More than 32,500 Teachers and Administrators
- Over 41,000 Users

Based on the above approach Gartner conducted workshops and interviews with participants of 10 school districts, Ministry personnel and the BC Teacher's Federation. In addition, a province-wide online survey sent to 579 potential participants resulted in 436 responses (75% response rate) which included responses from all but one school district (59 of 60 districts). Attachment 1 includes a breakdown of the school districts that participated in the workshops, as well as a profile of the survey respondents.

Current Situation Assessment

Current Situation Assessment

British Columbia is facing a decision pertaining to BCeSIS as to whether to continue investing in and enhancing the product or to look for alternative solutions necessary to support key educational requirements. Gartner's analysis concluded that because the decision to use BCeSIS in a given school district was a voluntary decision of each of the districts, the current deployment has resulted in inconsistent implementation and use of several of the features and functionality of the product. As a result of this inconsistent implementation across school districts, primary uses of BCeSIS are administrative in nature (e.g., student registrations and transfers, course scheduling and timetables, ministry reporting). As well, the current deployment does not adequately support the future direction of education (e.g., personalized learning, assessing impacts on student learning, using student data to proactively inform the educational process).

Current and Future Business Needs of BC Education Sector

During the requirements and interview process Gartner reviewed and discussed with participants the objectives and critical business requirements as they relate to the overall direction of the BC education sector.

The participants identified the following key objectives and business needs:

- With the exception of the BC Teachers' Federation, who prefer a distributed district-based system, the consensus from the other stakeholders consulted is to continue with an enterprise-level, province-wide solution that is Web-based, taking advantage of the Internet to the greatest extent possible, and based on the technical infrastructure available in each school district;
- Enable the integration of all types of learning programs and all types of schools and delivery methods (traditional classroom, distance learning, independent schools, First Nations schools) concurrently for a given student. This would enable districts and schools to provide a single common record for students irrespective of where the student is enrolled;
- Provide flexibility in order to support evolving requirements in the context of personalized learning in BC's K-12 education sector;
- Provide value for the investment—demonstrate value to all stakeholders
 - Streamline core administrative and student processes through process changes in conjunction with the implementation or evolution of the SIS solution
 - Eliminate administrative activities that add no value, such as redundant keying and manual reconciliation of data
 - Capture and make available to all stakeholders such as principals, teachers, administrative staff, and directors, the information needed to efficiently and effectively manage their areas of responsibility
- Satisfy the information and reporting requirements of the entire education system;
- Provide standard interfaces between the SIS software and other applications and information systems where necessary;
- Enable ease of use and minimize training requirements with an intuitive user interface;
- Operate on a platform that is scalable and efficient to manage and operate over time.

Participants identified the following as key elements of a SIS:

- Efficient use and access to user-friendly SIS to facilitate not only the day-to-day business process operations across all schools but to enable efficiencies in support of student centric goals and objectives. These include timely access to student data, both current and historical based on defined business rules by provincial, district and school levels.
- Support for the personalized learning initiative. The capability to use student data proactively to guide the educational process. For BC schools, the need for the SIS to support personalized learning or individual learning goals. This involves tracking and articulating each student attributes and individual progress from kindergarten to graduation.
- Support for 1701 Student Data Collection which would track cross-school and cross-grade registration.
- Support for Distributed Learning where the majority of the learning takes place at a distance and also when students are simultaneously enrolled in a public or independent school and a distributed learning program.
- Support for Strong Start Centres and Early Learning initiatives where early learning takes place in multiple settings (e.g., homes, preschools, child care environments, early learning centers, and other community settings).
- Support for schools' ability to manage and track learning outcomes based on learning standards and curriculum for K to 12 education system. The learning outcomes include statements of what students are expected to know and do at the end of an indicated grade or course.
- Support for facilitating parent communication through use of electronic devices and related mechanisms.
- Greater standardization of business practices within use of SIS
- From a system environment perspective:
 - ☐ Complete data that enables drill down to the individual student level that can be used proactively
 - ☐ A unified approach to data extract and reporting—districts are duplicating needs and costs
 - ☐ Improved network bandwidth and consistent at the school level
 - ☐ System that can integrate easily with other modules/third party systems
- Need for stronger understanding and communication within the districts as to the importance of data, what it is used for and how districts can use the data to identify trends and student success rates
- Need for clear communication and governance process from the school/district level to/from the Ministry as well as current service provider.

Summary of the Results of the BCeSIS Health Check

Based on all information provided by stakeholders, Gartner conducted a health check of the current BCeSIS system using Gartner's system assessment methodology. This methodology

helps determine the health of the current application and determine its strategic viability. The health check consisted of two steps:

- Conducting an Application Health Check to evaluate the systems business, operational and technical performance and determine how well the application supports current and future requirements.
- Based on the results of the Health Check conduct Strategic Viability Assessment which is a more in depth strategic assessment of identified problem areas to determine if the system is a candidate for containment, enhancement or replacement.

BCeSIS Overview

BCeSIS is a common, Web-based student information system that is available through collaboration between boards of education, independent school authorities, First Nations school authorities and the Ministry of Education. BCeSIS is also available to all schools in the Yukon under an inter-provincial agreement.

BCeSIS supports approximately 595,000 students in 56 districts, independent and First Nations schools and the Yukon, totaling more than 1950 institutions. Participation in BCeSIS is voluntary.

Assessment Framework

Gartner's application assessment framework was used to assess three aspects of performance fitness:

1. Business: The ability of BCeSIS to support business needs/business processes and how well the application is performing from an end-user perspective
2. Technical: The soundness of the architecture and technologies upon which BCeSIS is built and the technical robustness (extensibility and scalability) of the application
3. Operations: The effort for operating BCeSIS and ability to maintain and support the application

The assessment scores a number of indicators for each aspect of performance fitness on a **Low-medium-high** rating, including:

- **High**: the application meets all requirements of the performance indicator
- **Medium**: the application meets some requirements of the performance indicator
- **Low**: the application barely meets the requirements of the performance indicator

Assessment Summary

The table below provides the overall summary of the BCeSIS application health check.

Aspect	Performance Indicators	Rating
Business	Business Process Support	Medium
	Business Importance	Medium
	Data and Information Quality/Timeliness	Medium
	Business Robustness	Low
	Life Cycle Position	Low

Aspect	Performance Indicators	Rating
Technical	Architectural Alignment	Medium
	Foundational Technology	Medium
	Extensibility and Scalability	Low
	Technical Performance	Low
Operations	Complexity	Medium
	Maintenance Factors	Medium
	Supportability	Low
	Reliance on Subject Matter Experts	Medium
	Availability and Cost of Support Skills	Low

Assessment Conclusion

A province-wide SIS solution is strategic to the BC education system for the following reasons:

- Organization and management of student data
- Assessing impacts on student learning and using student data to proactively guide the educational process
- Reporting to respond to accountability/transparency requirements
- Meeting the growing demand and changing mandates for education data
- Achieving education outcomes as defined by the Ministry and school districts

Current user satisfaction with BCeSIS is low, particularly with respect to the following:

- User interface (forms based, varying screen formats, inconsistent views, small screen/windows, continuous back and forth use of the mouse and key board)
- System response/availability
- Reporting and data analysis

BCeSIS is capable of supporting the business and technical requirements in the short-term but not the long-term

- The current vendor will not support eSIS after July 2012
- Migration to a Java version of BCeSIS is not an option supported by the vendor
- Upgrade to Oracle 11g will be challenging due to the complexity of the application
- Business and technical skills are limited
 - Adding new functionality/enhancement will be challenging
 - Customization will be unsupported
- Over time, the third-party maintenance and support contract will most likely increase significantly as the solution will become more complex and future modifications will no longer be available through the software vendor and would be provided by the third party maintenance and support contractor.
- Limited capabilities to support personalized learning

- Migrating BCeSIS to a solution that is componentized and service-based in keeping with technology trends will require a costly rewrite of the application

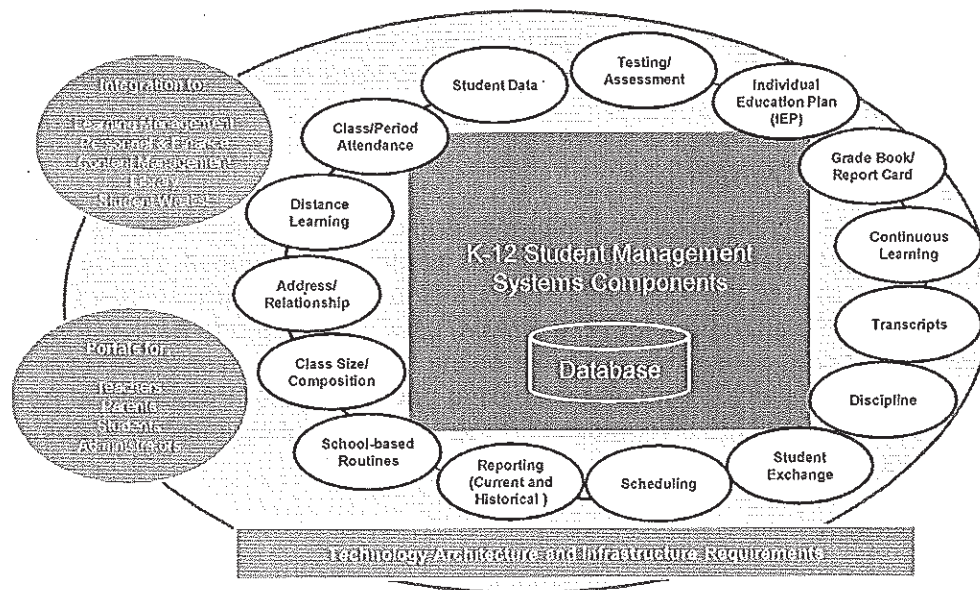
General Functional/Business Requirements

General Functional/Business Requirements

The general functional/business requirements were developed based on Gartner's requirements sessions with the nine (9) school districts representing small, medium, large as well as rural, urban and remote districts. Gartner also completed interviews with key district and Ministry of Education executive stakeholders and the BCTF as well as analyzing feedback provided by survey respondents. The section presents the requirement findings that are most critical to BC.

Figure 2 represents the key functional/business areas and requirement needs as indicated by BC stakeholders.

Figure 2. Functional/Business Requirements



The functional requirements that were identified as the most critical across all BC are broadly categorized across the following major student data collection components of a comprehensive SIS and summarized below:

- | | |
|-------------------|-------------------------|
| ■ Student Data | ■ Testing/Assessment |
| ■ Attendance | ■ Discipline |
| ■ Scheduling | ■ School-based Routines |
| ■ Grade Reporting | ■ SIS Reporting |

Student Demographic and Registration Data

The student data component provides ability to capture, track and maintain comprehensive student data and learning progress into one central view. Ability to capture and track comprehensive individual student information for the purposes of tracking student progress and movement between schools, monitoring enrollment trends in programs and determining FTEs for funding purposes

Attendance

The Attendance component provides ability to maintain students' daily class/period attendance with capabilities to generate on-demand attendance reports to internal and external stakeholders. This includes the efficient capture of student attendance in real time reporting, workflow and business rules as well as capturing class attendance based on designated days and sessions (e.g., MWF, courses that don't take attendance) and other user-defined parameters (e.g., minutes, hours, etc.).

Scheduling

Scheduling involves student, teacher and classroom schedule builder and management capability to assist in resource planning. This includes ability to automatically schedule courses into class periods while assigning them to teachers and rooms based on possible class/meeting codes and allocation of resources as well as the ability to track courses by teacher and establish relationships by class/course.

Grade Reporting and Transcripts

Grade reporting and transcripts involves the processing of student grades that is configurable for a variety of grading scales. Additionally, includes grades consolidation, demographic, attendance and other data to produce progress reports, report cards, transcripts, GPA, earned credits and class rank. Requirement for (1) a simple, user-defined grade book with automated integration with report card generation available online (2) based on user-defined parameters and business rules as well as (3) support for tracking and managing "Personalized Agenda" Student Learning Plan to include all courses that the student is taking in order to complete his/her learning plan

Testing/Assessment

Testing/Assessment involves building, maintaining and reporting the curriculum goals/objectives and includes recording students' performance or mastery of each competency/objective. In many districts there is a need to have standardized test results attached to a student record regardless of when they are taking the course or test for the course.

Discipline

Some districts expressed a need to track student behavioral incidents and maintain related records in order to maintain order and safety, and ensure students are held accountable for their actions.

School Based Routines

School based routines involve the maintenance and assignment of various resources, including support for the pre-transition process to enable setting up students for the following school year as well as the ability to capture, track and sort student fees.

SIS Reporting

SIS reporting involves the ability to access all data, (current and historical) within the system to create various reports in spreadsheet or other format for reporting and analysis for schools, districts and the Ministry of Education.

Technical Requirements

There is requirement for a Web-based architecture and a single, province-wide logical database with a single instance of the software supporting all students in the province.

Shadow Systems

During the requirements workshops and interviews Gartner identified multiple external (shadow) systems that districts and schools are using. The primary reason for the use of such systems was that BCeSIS did not provide adequate functionality that meets their needs. The following table contains both existing shadow systems that stakeholders are currently using and future opportunities identified for integration.

Table 1. Existing Shadow Systems

	Existing Shadow Systems
1	Continuous Learning
2	Distance learning
3	Grade books/Report Card Systems
4	Student Fees Management
5	Discipline System (FilemakerPro, SRC)
6	Incident Management
7	SIS (e.g., InfoPro, FilemakerPro)
8	Student Achievement and DRA (Developmental Reading Assessment)
9	IEP - Individual Education Plan (FilemakerPro)
10	School Plan DBs (Student performance)
11	Counselor Tracking
12	Auto Dialer/Automated Notification
13	Withdrawal Tracking
14	District Assessment
15	International Student Program
16	Special Ed Referral System
17	Class Size and Composition

Alternatives Analysis and Assessment

Alternatives Analysis and Assessment

Based on information provided through Executive Steering Committee consultation, requirements workshops, interviews and the online survey, Gartner, conducted an alternative assessment where various potential system alternatives were identified. This section describes the alternatives analysis process, framework, and assessment results.

Description of the Alternatives Analysis Process

The alternatives assessment was intended to identify potential alternatives available to BC to address the future support required for the Province's Student Information System (SIS) for students in the K-12 sector. The following are the objectives of the decision and alternatives analysis assessment:

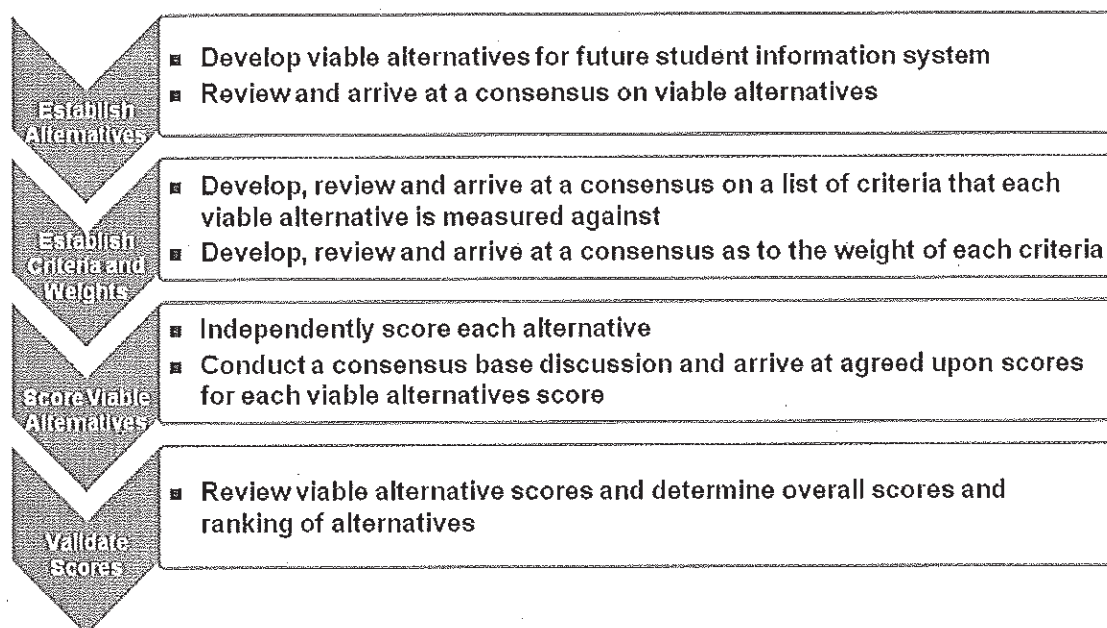
- Describe and assess alternatives for consideration
- Assess each alternative against mandatory criteria
- Document high level pros and cons of each retained alternative
- Document a consensus score around each alternatives

BCeSIS was acquired and implemented approximately 6 years ago and generally satisfies the current business requirements, however, because use and uptake of BCeSIS has been voluntary, it has not been implemented in a consistent manner throughout the Province and not all districts have implemented all the features and functionality. The following assumptions have been considered in this assessment:

- Alternatives assessed over a 7–10 year time frame
- Additional funding will be required for all the alternatives considered because all stakeholders agree that the current SIS solution is not adequately supporting requirements and more investment is required regardless of the preferred alternative.

The alternatives process is depicted in the figure below:

Figure 3. Alternatives Assessment Process



Identified Alternatives

Several alternatives were identified as part of the alternatives assessment, including:

1. Continuing with BCeSIS and evolving and supporting the BCeSIS solution
 - a. Acquiring the source code for eSIS;
 - b. Contracting with Pearson to maintain and support the BCeSIS software license and source code beyond the current contract term.
2. Replacing BCeSIS with a SIS Commercial Off the Shelf (COTS) solution following a competitive procurement process;
3. Developing SIS functionality using the current BC Integrated Case Management (ICM) platform.
4. Developing a custom SIS solution for BC by leveraging available open source components and software.

Detailed assessment of options 3 and 4 was not done for the following reasons:

- The ICM platform (Oracle Siebel) is designed for case management and would require significant customization to be able to accommodate the identified SIS functional requirements and transaction processing. To develop the SIS functionality within the ICM project would most likely take 3-5 years. ICM is also not integrated to other learning environments in use, or anticipated in the education sector. In addition, it is our understanding that the current schedule for ICM development and implementation would not accommodate the timeline requirements of the Ministry of Education.
- The anticipated development life cycle for a comprehensive SIS solution would introduce significant risk to operations over the next 3–5 years and BC would not be in a position to easily take advantage of evolving industry trends and best practices in the education sector. Similarly, integration with other learning environments would be difficult.
- A custom solution would require the close collaboration of all stakeholders in the design, development and implementation of a BC developed and owned application. Establishing the program management and governance framework, as well as the resources required to proceed with this type of initiative would take time and resources and would most likely extend the time to market beyond 3–5 years. This approach would also require significant continuous investment to maintain and evolve and the total cost of ownership is likely to be excessive.
- There has been very little evidence of Open Source development efforts in the K-12 software domain. Our market scan did not identify any Open Source implementations of significant size, or any Open Source tools with demonstrated ability to scale to the provincial level. It is anticipated that the development life cycle from defining requirements through deployment would be more than 5 years, thus introducing a high degree of risk to the province.
- The current BCeSIS solution will most likely be able to support the requirements for the next 3 years, after which time the risk to the BC education sector will increase substantially. Any custom solution will likely take at least 5 years to be ready for implementation. Once a solution is developed, we estimate it would take up to 3 years to implement across the province.

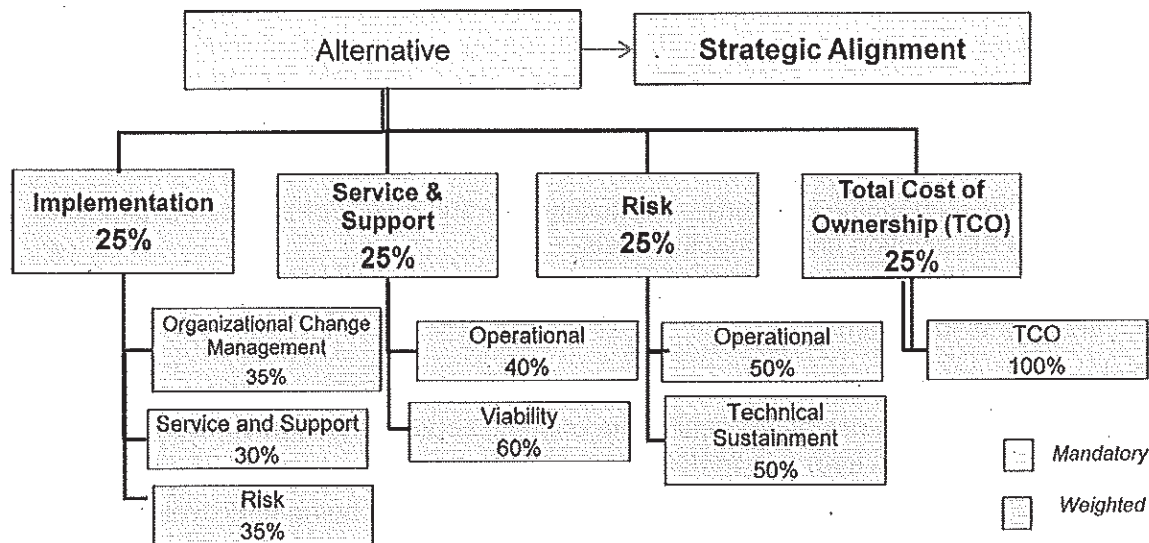
A description of each of the viable alternatives is provided below:

1. **Continue with BCeSIS and evolve the system**—This alternative would require BC to continue supporting and maintaining BCeSIS and evolving the solution to meet the future requirements and strategic direction of the BC Education Sector. It would require investment in additional enhancements for the application to meet future critical requirements using additional skilled resources. The Ministry would acquire the source code and would be responsible for all code changes to BCeSIS.
2. **Procure a new SIS Software Solution**—Go to tender based on the established best practice and critical requirements to procure an application or Software as a Service (SaaS) or cloud solution that best suits BC's needs. Utilize the services of a vendor or system integrator to ensure use of best practices during implementation, change management and deployment. In the event that a SaaS or cloud solution is selected, privacy issues would need to be addressed due to the PATRIOT Act.

Alternative Evaluation Categories

Each of these two viable alternatives were then assessed through the application of two sets of criteria; Mandatory and Weighted. The figure below represents the breakdown of the evaluation categories:

Figure 4. Evaluation Categories



Mandatory Evaluation

The mandatory criteria refer to the strategic alignment to BC's education direction and took into account the following variables:

- **Strategic 1–3 years**—The preferred alternative must be aligned with the BC Education sector's goals and principles and with those of the Ministry in general. The objectives described in the Market Scan document have been assumed for the purposes of the alternatives evaluation. The ability to support a single instance of the solution for the Province. The one-time level of effort and financial investment required to achieve alignment with the Province's strategic direction.
- **Strategic 4–10 years**—The preferred alternative must be aligned with the BC Education sector's goals and principles and with those of the Ministry in general. The objectives described in the Market Scan document have been assumed for the purposes of the

alternatives evaluation. The ongoing level of effort and investment required to continue to be aligned with the strategic direction.

- **Business**—The preferred alternative must be aligned with and must satisfy the business requirements of districts as described in the functional requirements workshops.
- **Technical**—The preferred alternative must be aligned with the technical architecture, capabilities and requirements. These include technical capabilities to support reporting, integration (including data extraction), data management, portal and other required functions of the solution as described in the technology workshop.

Weighted Evaluation

The weighted criteria include the consensus based criteria and associated weights as follows:

- **Implementation**
 - ☐ **Organization change management (OCM)**—The ability of the Ministry and Districts to support and meet change management needs and demands.
 - ☐ **Service and Support**—The availability and quality of resources required to implement the alternative.
 - ☐ **Risk**—The implementation risk associated with the alternative, taking into consideration project management, design, configuration, data conversion and development activities. Also considers the risk associated with testing and cutover as well as end-user training.
- **Service and Support**
 - ☐ **Operational (Ongoing Support)**—The availability and quality of services available to support the solution on an ongoing basis.
 - ☐ **Viability**—The long term viability of the alternative for BC as determined by the analysis of the alternative.
- **Risk**
 - ☐ **Operational**—The risk of not getting the ongoing service and support required to maximize benefits from and performance of the solution.
 - ☐ **Technical Sustainment**—The risk of the application(s) not being effectively maintained and evolved over the lifetime of the solution.
- **Total Cost of Ownership (TCO)**
 - ☐ **License Fees and Operational**—The total life cycle costs associated with the alternative, including implementation, and ongoing enhancements, support and maintenance.

Results of the Assessment

The tables below represent the high-level pros and cons for each viable alternative:

Table 2. Alternative 1: Continue with BCeSIS and Evolve the System

Pros	Cons
■ Foundation already established with current BCeSIS functionality	■ Significant investment would be required to evolve the application to support future vision and direction of the BC education sector:

Pros	Cons
<ul style="list-style-type: none"> <input type="checkbox"/> Support infrastructure is in place and knowledgeable about the BCeSIS product ■ Opportunity to leverage the knowledgebase that exists in BC <ul style="list-style-type: none"> <input type="checkbox"/> Familiarity with user interface and functionality; <input type="checkbox"/> Training and testing procedures and processes are already in place; <input type="checkbox"/> Strong governance and user group (SMC) is in place; <input type="checkbox"/> BCeSIS deficiencies and requirements are known; ■ Single instance and common system available to all districts/users in the Province. ■ Software license and source code are available to Province of BC at a reasonable cost ■ Current workarounds enable users to complete transactions and activities. ■ Lower initial capital cost impact and leverages BC's investment in current systems. ■ Lower implementation risk since no new systems would be implemented. 	<ul style="list-style-type: none"> system is not currently aligned with BC future direction. ■ Several current requirements are not being satisfied by BCeSIS. Consequently, the number of shadow systems would likely increase. ■ Operational costs would most likely rise in the future as BCeSIS evolves to a custom solution. ■ Data and data access is limited thereby limiting reporting and analytics capabilities. ■ Existing interfaces would remain and may need to be modified as needs change and new interfaces would likely be developed as separate, school systems potentially could proliferate. ■ BC would not benefit from best practice processes inherent in Commercial off the Shelf (COTS) packages. ■ Due to system architecture integration with future mainstream third party specialized solutions required to support business requirements will be complex.

Table 3. Alternative 2: Procure a new SIS COTs Software Solution

Pros	Cons
<ul style="list-style-type: none"> ■ This option will best meet BC's needs through vendor's built-in best practice processes and standard reporting capabilities. <ul style="list-style-type: none"> <input type="checkbox"/> Provide cost-effective, integrated tools and solutions; <input type="checkbox"/> Best practice approach to implementation and ongoing maintenance and deployment of related solutions; <input type="checkbox"/> Opportunity to reduce BC's maintenance costs over time by reducing the complexity of the technology environment and potentially reducing licensing costs. ■ Opportunity to drive out further standards and consistency in standardization than exist today throughout the province and to re-engineer business processes. ■ System would provide immediate application integration of most of key business and learning processes. ■ Opportunity to further reduce the use and proliferation of shadow systems in districts. ■ New selected system would provide access to more support services due to modern architecture and requirements. 	<ul style="list-style-type: none"> ■ While there are some COTS solutions available which would satisfy the goal to have a single instance of the solution for the Province, BC would need to ensure the ability of the selected solution to meet specified performance criteria. ■ Higher initial capital cost impact due to need to acquire software licenses and implement the new solution. ■ Change Management effort will be high as business processes will need to be changed to align with the best practice processes of the software. ■ Higher implementation risk. The primary risk is related to successfully implementing a new system. Some examples of potential risks include: <ul style="list-style-type: none"> <input type="checkbox"/> Availability of internal resources <input type="checkbox"/> Process standardization and change <input type="checkbox"/> Universal acceptance of the new system <input type="checkbox"/> Cost overrun <input type="checkbox"/> Time to market

Pros	Cons
■ Significant alignment with functional requirements.	

Strategic Alignment (1–3 years)

BCeSIS—From a strategic perspective, the software meets the majority of the current needs, however deployment and implementation is not consistent throughout the districts and schools. Required enhancements need to be documented and should address short-term gaps of BCeSIS. It will require significant effort and cost to support future vision and direction of the BC education sector. The system is not currently aligned with BC's future direction and it may act as an impediment to the educational changes now being sought.

BCeSIS supports business processes and functional requirements for modules deployed, however some districts use bare minimum of the system (primarily to be in compliance with Ministry requirements). Some effort and cost for enhancements (including updates of regulations) to meet current and future mandatory requirement gaps will be necessary; however there will be limited capabilities to leverage industry best-practices. The core benefit is that of the single database for all participating districts.

The current architecture and infrastructure supports an enterprise/province-wide solution. A reporting database is necessary so as not to negatively impact performance of the operational database. Additionally, performance issues need to be resolved

SIS COTs Software Solutions—Strategic needs would be met through vendor's built-in best practices and ongoing upgrades/enhancements. This would provide the opportunity to select a solution which is strategically aligned. The related implementation and stabilization effort would most likely span the three-year time horizon.

It is anticipated there would be alignment with ~80% of functional requirements but business process changes/modifications may be necessary. There are deep industry and product knowledge/skills inherent with vendors. Potentially some modules will need to be customized (e.g., continuous learning, individual learning).

It should be anticipated that there will be challenges to be able to scale to an enterprise/province-wide solution in the short term as vendors have not yet developed solutions to meet the requirement for an enterprise solution.

Strategic Alignment (4–10 years)

BCeSIS—It will become more difficult in the future to align BCeSIS with the future strategic direction of BC due to the limitations of the design of the current application. Significant funding will be required to enable the BCeSIS application to meet future needs/requirements and the application will move more to a custom system than a packaged solution.

As new requirements surface and business needs change BCeSIS will become more and more of a custom solution and the cost for evolving and maintaining the solution will increase. Additionally, as trends and industry best-practices change in the future, they will need to be developed by the Ministry/districts within the BCeSIS solution.

The current technical architecture will not be capable of supporting the long-term strategic technology direction of the Ministry and the Province and a reporting database will be necessary as not to negatively impact performance of the operational production database. Lastly, performance issues will need to be resolved.

SIS COTs Software Solutions—The market is trending toward enterprise (province-wide solutions) and individual education plans which are consistent with BC's strategic direction. This will enable BC to select a COTS solution to support evolving requirements in the context of the 21st Century education direction of the Province's K-12 education sector and personalized learning model.

It is anticipated that there will be alignment with ~80% of functional requirements however there may need to be business process changes/modifications. Deep industry and product knowledge/skills are inherent with vendors. Potentially some modules may need to be customized or delayed as vendors develop the required functionality (e.g., continuous learning, individual learning).

Short-term challenges to scale to an enterprise/province-wide solution should be addressed in the 4–10 years timeline. Additionally this alternative will continue to establish a basis for a standard BC technical architecture.

Strategic Alignment Scoring Summary

The table below represents the summary strategic alignment assessment results:

Evaluation Category	Weight	Adjusted Weight	Score: Alt 1: BCeSIS	Score: Alt 2: COTS	Adjusted Score: Alt 1: BCeSIS	Adjusted Score: Alt 2: COTS
Strategic Alignment (1-3 years)	50%	100%				
Strategic	35.00%	17.50%	2.00	3.00	35.00	52.50
Business	35.00%	17.50%	3.00	2.00	52.50	35.00
Technical	30.00%	15.00%	3.00	3.00	45.00	45.00
Total (1-3 years)			6.00	6.00	132.50	132.50
Strategic Alignment (4-10 years)	50%	100%				
Strategic	35.00%	17.50%	2.00	4.00	35.00	70.00
Business	35.00%	17.50%	3.00	4.00	52.50	70.00
Technical	30.00%	15.00%	1.00	4.00	15.00	60.00
Total (4-10 years)	100%		6.00	12.00	102.50	200.00
Grand Total	1.00		14.00	20.00	235.00	332.50

The scoring methodology scale for the strategic alignment is as follows:

- Low Alignment = 1
- Medium Alignment = 2
- Significant Alignment = 3
- High Alignment = 4
- Extremely High Alignment = 5

Weighted Criteria Scoring Summary

The table below provides the viable alternative weighted scoring comparison across each area:

Table 4. Weighted Criteria Scoring Comparison

Alternatives Scoring Comparison						
Evaluation Category	Weight	Adjusted Weight	Alt 1: BCeSIS	Alt 2: SIS COTS	Adjusted Score: Alt 1: BCeSIS	Adjusted Score: Alt 2: SIS COTS
Implementation	25%	100%				
Organization Change Mgmt.	35.00%	8.75%	2.00	3.00	17.50	26.25
Service & Support	30.00%	7.50%	3.00	4.00	22.50	30.00
Risk and Business Impact	35.00%	8.75%	4.00	2.00	35.00	17.50
Implementation Total					75.00	73.75
Service and Support	25%	100%				
Viability	60.00%	15.00%	1.00	4.00	15.00	60.00
Operational	40.00%	10.00%	3.00	3.00	30.00	30.00
Service and Support Total					45.00	90.00
Risk	25%	100%				
Operational	50.00%	12.50%	3.00	4.00	37.50	50.00
Technical Sustainment	50.00%	12.50%	2.00	4.00	25.00	50.00
Risk Total					62.50	100.00
Total Cost of Ownership	25%	100%				
TCO	100.00%	25.00%	2.00	3.00	50.00	75.00
TCO Total					50.00	75.00
Total	100%		20.00	27.00	232.50	338.75

Weighted Criteria Assessment Results

This section provides viable alternative scoring results for each weighted criteria area.

BCeSIS Weighted Criteria Assessment Results

The below table provides the assessment results for the BCeSIS alternative.

Table 5. Alternative 1: BCeSIS

Evaluation Category	Score	Comments
Implementation		
Organizational Change Management	2	Opportunity to leverage the knowledgebase that exists in BC. Historically the change management methodology used, associated training, and communications have not been as effective as they could be—a revised approach would need to be considered
Service and Support	3	Heavy dependence on contracted/in-house resources to implement enhancements—no new system will be implemented. Resources and skill sets will need to be available for future system enhancement/modifications.
Risk	4	Lower implementation risk since no new systems would be implemented. Risks in deploying existing modules in school districts where not currently deployed necessary to increase the adoption and usage rate of the system

Evaluation Category	Score	Comments
Service and Support		
Operational	1	Foundation already established with current contracted/in-house skills—risk of losing skills if/when the current contract ends.
Viability	3	Current system functional and maintenance issues will continue and worsen over time. Customizations to meet unique BC requirements will be required. Effort and associated costs to maintain future viability will be necessary
Risk		
Operational	3	Operational infrastructure, process and skills are well established but heavily dependent on contracted resources—most current skills are limited to level 1 support. Absence of ongoing vendor support would require BC to implement periodic updates of regulations and tables
Technical Sustainment	2	Current technology platform will soon be unsupported by vendor (Oracle 10g)—high risks for technology upgrade. Application architecture (client/server) is legacy. Current system functional and maintenance issues will continue and worsen over time
Cost		
Total Cost of Ownership	2	Likely lower initial cost outlay (short-term) compared to other alternatives; required funding for future enhancements is anticipated to be limited; and lower implementation cost since no new systems would be implemented,. For long term, may anticipate upward trend due to unknowns related to business requirements enablement.

SIS COTs Weighted Criteria Assessment Results

The below table provides the assessment results for the SIS COTs Solution alternative.

Table 6. Alternative 2: SIS COTs Solution

Evaluation Category	Score	Comments
Implementation		
Organizational Change Management	3	While vendors are positioned to better assess BC's business process changes and impact, change management will be crucial in order to effectively deploy best practices built into a new system. Internal change management related methodologies will need to be revised and optional change management services should be included in vendor scope and statement of work.
Service and Support	4	New system implementation would require system integration (SI) services. A new selected system would provide larger access to support services due to more modern architecture and requirements
Risk	2	The primary risk is related to successfully implementing a new system given the number of districts and anticipated timeline to implement. Heavy reliance on a system integrator given current internal/district capabilities
Service and Support		

Evaluation Category	Score	Comments
Operational	3	Need to contract/acquire, and develop skills for ongoing operations of new solution. Anticipate a significant task and support structure cost outlay
Viability	4	Ongoing vendor service and support would help ensure long-term viability. System would provide immediate application integration of most key business processes/functions.
Risk		
Operational	4	System would provide immediate application integration of most of key business processes/functions. Integration of business processes would be critical
Technical Sustainment	4	Ongoing vendor upgrades will ensure technical sustainment—BC will need to maintain the solution on supported vendor versions/technologies. A new selected system provides larger access to support services due to more modern architecture and requirements
Cost		
Total Cost of Ownership	3	Higher initial cost outlay (short-term) when compared to other alternative: Contracting with a new vendor will incur software licenses and ongoing maintenance fees; costs to address BC's current lack of adequate staff for operational support of the systems; and cost for system integration (SI) services. However, long-term costs would be more predictable and potentially lower due to unknowns usually addressed by vendors. Additionally, costs would be known with SIS vendor based on RFP process and easier to budget for.

Market Scan

Market Scan

Market Scan Overview

Gartner conducted an overall North America SIS market scan, based on BC business and requirement needs, to confirm the availability of viable SIS vendors. This section provides insight into the relevant K-12 Student Information Systems based on Gartner's research into the K-12 market and associated vendor offerings as of May 2011 and requirements identified as a result of consultation with stakeholders throughout the Province.

Industry Trends

SIS vendors and products are evolving and there is constant movement in the market as vendors continue to develop and release Web-based solutions. Solutions are becoming more comprehensive as clients are requesting the inclusion of learning management capabilities and SIS functionality in a suite of Student Information Systems. This trend should enable organizations to support different delivery methods, such as online learning and virtual learning as well as personalized learning models. They have not, however, committed to specific timeframes for introducing these modifications. Consequently, it is uncertain as to when this flexibility will be readily available in the market.

Several vendors have addressed the requirement to provide integrated Portal and Single Sign-On capability in order to facilitate the use of the systems. Workflow technology is built into many of the solutions and is becoming a typical method to seamlessly move data through the system, thus minimizing data duplication and errors.

Many of the vendors have developed reporting and analytics capabilities into their solutions to provide support at the school, district and state/province-wide level.

Most current SIS implementations are based on a district—wide deployment, however, the trend is to move toward state-wide and province-wide deployments in the future as well as centralized funding models, in order to facilitate common business processes, cross-enrollment and enterprise reporting and analysis.

There is an increasing willingness for school districts to accept software as a service (SaaS) and a trend toward “cloud” solutions.

Additionally, vendors continue to find acceptance in the market by offering Web-based solutions, working closely with clients during planning and development to ensure a surprise-free implementation, offering solid ongoing support after the installation, reaching to satisfy demands to extend the scope of the features and functions, to include a wider audience of end users, and to include or provide for greater connectivity to other administrative and instructional solutions.

Market Scope

The table below summarizes Gartner's MarketScope (Publication Date: 28 September 2010) for K-12 SIS vendors. It is important to note that the MarketScope provides a point in time perspective on the vendors and that the market and the solutions are continuously evolving based on customer demand, market trends and mergers and acquisitions. The following criteria are used to determine if a vendor's solution qualifies to be included in the Gartner MarketScope:

- Vendor shall have at least 20 of the 500 largest public school districts as clients
- Vendors agree to participate

Vendors are then assessed with a ranking (strong positive, positive, promising, caution, strong negative) based on the following factors:

- High weighting
 - ☐ Core product
 - ☐ Customer experience
 - ☐ Market understanding
- Standard weighting
 - ☐ Overall viability
 - ☐ Product strategy
 - ☐ Sales execution/pricing

Table 7. SIS Vendors

Vendor	Product	Market Assessment	Core Technology
Century Consultants Ltd.	Star_Base	Positive	Oracle
Harris Computer Systems	SchoolMAX	Promising	Oracle
Infinite Campus	Infinite Campus	Strong Positive	Microsoft
Pearson	PowerSchool	Strong Positive	Oracle and Java
Skyward	PaC Student Management System	Positive	Progress
SunGard PublicSector K-12 Education	eSchoolPLUS	Strong Positive	Microsoft

The Market Assessment ranking definitions are represented in the figure below:

<p>Strong Positive: Is viewed as a provider of strategic products, services or solutions</p> <p>Positive: Demonstrates strength in specific areas, but execution in some may still be developing or inconsistent with other areas of performance</p> <p>Promising: Shows potential in specific areas; however, execution is inconsistent</p> <p>Caution: Faces challenges in one or more areas</p> <p>Strong Negative: Has difficulty responding to problems in multiple areas</p>

Market Scan Results

Based upon the market scan results, discussions with vendors and analysts, and core stakeholders it was determined that there are viable vendor solutions available in the marketplace. Generally the solutions are more similar than dissimilar and most vendors provide the majority of required business functionality.

Several additional COTS products were identified as a result of meetings with district representatives or direct contact with Gartner. They are listed in Attachment 2.

Recommendations

Recommendations

British Columbia is faced with a decision to either continue investing in BCeSIS and related enhancements or to consider a different viable alternative to the current system. The current system is providing the basic needs of the Province's schools, districts and the Ministry; however, districts are not taking advantage of all of the capabilities of the software. Additionally, BCeSIS is not supporting all of the functional needs that exist nor is it well positioned to support the future needs of the education sector in BC.

As currently deployed, BCeSIS is not meeting the business, technical or operational needs of BC and is not a viable future alternative. Within the current marketplace there exist multiple vendors that would be better able to support the direction of BC and be able to provide the technical architecture necessary to achieve BC's objectives and goals.

Although Gartner's BCeSIS health check indicates that the current deployment of BCeSIS is not sustainable in the long term, it should be capable of supporting the current and short term needs of the Province for the next three (3) years, providing functional requirements and code modification are kept to a minimum.

It is not recommended to pursue a custom development solution as it will require a minimum of 5 years to develop and implement and would significantly impact the Province's ability to continue to support the school districts and schools.

Based upon the alternatives assessment and consensus of key BC stakeholders it is recommended that BC:

- Conduct a competitive procurement process to acquire a new SIS COTs solution. Gartner recommends that BC complete a request for information (RFI) followed by a request for proposal (RFP) process to best ensure a solution is procured that is aligned with BC's strategic direction, requirements, goals and objectives.
- Define a common scope of functionality and business processes for all districts and schools in order to ensure that the education sector will take advantage of the inherent best practices and features. This will facilitate the utilization of the system across the province as well as the reporting and analysis of data on students.
- Assess different technical approaches to achieving the goal of a single, province-wide database and software in order to ensure an appropriate level of technical performance and stability in the future student information system.

Attachments

Attachment 1—BC Project Participants

The list of BC participants that Gartner conducted all-day critical business, functional and technical requirements workshops with is provided in following table:

Table 8. Requirements Workshop District Participants

	Small	Medium	Large
Rural	<ul style="list-style-type: none"> ■ Peace River South—24 schools, 4,131 students ■ Okanagan Skaha—25 schools, 6,564 students 	<ul style="list-style-type: none"> ■ Central Okanagan—44 schools, 21,822 students ■ Prince George—52 schools, 14,428 students 	
Urban		<ul style="list-style-type: none"> ■ Victoria—51 schools, 20,479 students ■ Richmond—51 schools, 22,971 students 	<ul style="list-style-type: none"> ■ Surrey—126 schools, 69,109 students ■ Coquitlam—72 schools, 32,588 students
Remote	<ul style="list-style-type: none"> ■ Nechako Lakes—26 schools, 5,435 students 		

Based on 2009/10 school year

The following table includes the interview participants for executive level interviews:

Interview Participants		
Central Okanagan	Okanagan Skaha	Delta
Coquitlam	Peace River South	BC Teachers Federation
Greater Victoria	Prince George	
Ministry of Education	Richmond	
Nechako Lakes	Surrey	

A province-wide online survey sent to 579 participants resulted in 436 responses (75% response rate) which included responses from all but one school district (59 of 60 districts). The following table includes a breakdown of the roles of the survey respondents.

Table 9. Survey Participants Area of Responsibility

Area of Responsibility
School Clerical/Admin
District Tech/BCeSIS Leadership
District Administration/Leadership
Teacher—Secondary
Counseling Staff
District Clerical/Admin
Teacher—Elementary
Teacher—Middle
School Student Services
District Tech Support
District Student Services
School Tech Support

Attachment 2—Additional Software Vendors

The following table includes a list of software vendors which were identified by participants during the information gathering stages. These vendors are not included in Gartner's MarketScope research as they failed to meet the criteria required for inclusion. The assessment team requested basic information from these vendors and reviewed them based on the information provided. The team was unable to obtain specific client reference information as it was not offered by the vendor. In addition to those vendors assessed in the market scan and those in this attachment, there are likely other viable products that were not identified as part of this study.

Table 10. Additional Software Vendors

Vendor	Product	Market Assessment	Core Technology
Maplewood Computing Ltd	Student Administration	Not currently tracked by Gartner	Microsoft
Management Information Group (MIG)	SchoolLogic	Not currently tracked by Gartner	Microsoft
Trevlac Computer Services Ltd.	The School Administrator	Not currently tracked by Gartner	FoxPro/Oracle/Microsoft
Take 2	CIMS	Not currently tracked by Gartner	
Pinnacle (GlobalScholar)	Not currently tracked by Gartner—Limited market penetration		
CrossPointe	Not currently tracked by Gartner—Limited market penetration		
EduPoint	Not currently tracked by Gartner—Limited market penetration		