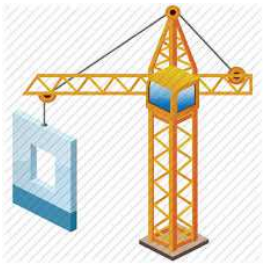

Aspen Construction CIS Migration

Submitted as a final assessment paper for the Mount Royal College Business Analysis Extension Certificate

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1 ENVIRONMENTAL INTRODUCTION

Aspen Construction is a medium-sized housing development company with its head office located in Calgary, Alberta. The company has been conducting business mainly in Alberta for 50 years, out of which they have been using an Enterprise Resource Planning (ERP) system called CIS (Construction Industry Solutions) for 30 years.

CIS is a software company that provides ERP solutions for small to medium-sized construction companies. They tailor software for this niche market only. Aspen is currently using CIS modules: GL (General Ledger), HR (Human Resource), CRM (Customer Relationship Management), PR (Payroll), PL (Purchase Ledger), CL (Contract Ledger), Inventory Management, FL (Fleet Management) and Reporting Services.

Recently, CIS announced that they will release CIS Version 11 mid 2015, which will include major changes in the architecture of the software that will allow the system to adapt to different operating platforms. They will also stop supporting their previous versions of the system at the end of 2016.

This provides Aspen Construction with the opportunity to review and benchmark other software in the market against the existing software and organizational requirements. In doing so, the company may discover new software that will fulfill their requirements, while reducing cost and increasing efficiency. Review of a new software system may also help Aspen recognize new needs that may need to be addressed, but they had never thought of doing because their current system did not support the function. With the current version of CIS, Aspen is struggling with the reporting services. It is not fully configurable to their needs and they have adopted standard templates that come with the system, rather than using customized reports, which will cost the company extra. Since Aspen is a medium-sized company, their IT services group only provides technical support, any other issues are forwarded to the CIS help desk, for which they bill Aspen monthly.

The management team of Aspen Construction assigned their Controller as the Project Manager, who then setup a project team called CIS Migration. Aspen decided that they must upgrade or implement a new ERP system before their next financial year-end on August 1, 2016. A detailed analysis was conducted to assess three possible options:

- Upgrade the existing CIS system to version 11 by August 1, 2016.
- Upgrade the existing CIS system to version 11 Prime by August 1 , 2016, which is a fully managed hosting service provided by CIS, utilize CIS applications and supporting infrastructure through their 'Cloud' based platform.
- Purchase a different software package that is available in the market.

Aspen's management team decided to increase IT spending by 30% for the CIS Migration project this year. Aspen's management also expected to reduce costs for support and maintenance of the ERP system by 30% annually after the migration. The actual budgeted spend for the software's purchase and migration will be approved based on the analysis and recommendation of this study.

2 BUSINESS ANALYSIS PLAN

2.1 BUSINESS PROBLEM

Aspen needs to migrate the current CIS system to meet the deadlines for support cut-off by CIS by the end of 2016 and the company's next financial year-end period on August 1, 2016.

To avoid issues or complications related to the migration, the legacy system and the new ERP system would run parallel to one another for a period of three months and finally switch over to one ERP system after completing the company's year-end procedure. Aspen's CIS migration team needed to start the project immediately and finalize the review process within the next three months.

2.2 GOALS AND OBJECTIVE

The goal of this analysis is to recommend the optimal solution for CIS migration. The final solution needs to meet Aspen's current business requirements, with no major business process changes. If there are requirements for business re-engineering, the impact of the change and cost need to be evaluated. The cost of the CIS migration needs to fall under the annual budget allocated for the CIS system. Additional funds would be allocated if the business case can bring significant value for business.

2.3 SCOPE OF WORK

2.3.1 IN-SCOPE ANALYSIS

The following items are within the scope of this analysis and are considered as a part of this study:

1. The capability of the current CIS system, along with the new version of the CIS software and one other choice of ERP software available in the market.
2. User training and IT support efforts.
3. Cost and comparison of the "must have" and the "nice to have" features.
4. The cost of the migration process and timeline.
5. The cost for install of the CIS system and future maintenance costs.

2.3.2 OUT OF SCOPE ANALYSIS

The following items are out of the scope of this analysis and therefore not considered as a part of this study:

1. The implementation for the "nice to have" features.
2. The implementation of the additional reporting requirements.
3. Any requirements for major business process re-engineering.
4. The detail migration process.

2.4 ASSUMPTIONS

The following assumptions were made in this study:

- If a new ERP system is implemented, Aspen will require support from the software developer for the next 10 years, with no major architecture change.
- All stakeholders will be advised of the changes and granted access to the new ERP system, training or instruction, if required.
- The new ERP system and the legacy system will operate parallel to one another for 3 months, with the legacy data either being migrated or archived.
- User training will be completed upon a "go live" date.
- The cost to maintain the new ERP system should be within the company's annual allocated budget.

2.5 CONSTRAINTS

The following outlines the constraints of this study:

- The CIS migration must be completed before the next year end period, August 1, 2016.
- Stakeholders and the management team must sign the system acceptance, prior to transitioning over to the new ERP system.
- The overall cost for the purchase of software and implementation is not to exceed $100,000.00.
- There is no budget for an extra system support person for the new system.

2.6 PROJECT TIMELINE

Table 1 Project Timeline

Milestone	Due Date
Project initiation	April 1, 2015
Market research, product analyst, and impact analysis	May 1, 2015
Solution options documented	August 1, 2015
Presentation of Business case and recommendations to Aspen Directors	October 1, 2015
Budget approval and system design start	November 1, 2015
System design complete, demonstration and walkthrough	February 1, 2016
UAT environment setup, test and acceptance, System go live	May 1, 2016
System switch over	August 1, 2016

2.7 STAKEHOLDER ANALYSIS

Based on the existing organizational chart, the Business Analyst (BA) worked with the Project Manager (PM) to identify the various stakeholders in each of the departments within the company. A RACI chart, as depicted in Table 2, was used to identify stakeholders and their functional department as listed below:

Table 2 Stakeholder Analyst

Stakeholder Name	Discipline	RACI	Influence	Interest
Larry S.	VP of Aspen	A	H	H
Jennifer W.	HR	R	H	H
Mike S.	Marketing	C	M	H
Doug T.	Fleet Management	C	H	H
Mike T.	Contract Management	R	H	H
Jan J.	Supply Chain	R	H	H
Fernando A.	Surveyor	C	H	H
Tom S.	Construction Management	I	M	M
Spencer M.	IT and IS	R	H	H
Jeffery K.	Document Management	C	L	L
Carol J.	Asset Management	R	H	H
Todd P.	Payroll	R	H	H
Keith N.	Environment , Health and Safety	I	L	L
Scott L.	Designer	I	L	L
Kathy A.	Tax and billing	R	H	H
Taylor B.	Estimate	C	L	L
Brad K.	Planning	C	L	L
James T.	Project Coordinator	C	M	M
Tim D.	Project Manager	R	M	M
Jane Y.	Business Analyst	R	M	M

Legend:

R - Responsibility for executing the task

A - Accountable having the authority to make

C- Consulted working as subject matter experts throughout the duration of the project

I – Informed must be informed for the outcome and progress of the project

M-Moderate, H-High, L-Low

Table 3 outlines the time commitment required during each project phase and the responsibility of each individual:

Table 3 Project Team

Roles	Time /Project Phases and responsibility
Project Manager	100% during design, implementation and "go live" (12 -18 Months). Manage the overall execution of the project.
Business Analyst	100% during design, implementation and "go live" (12 -18 Months). Develop and management requirements.
Project Coordinator	100% during design, implementation and "go live" (12 -18 Months). Manage project activities.
Project trainer	50% during design phase and 100% during implementation (12-18 months). Develop procedure and training manuals.
IT and Application Support	100% during design phase, implementation, "go live" and future support
QA	50% during design phase and implementation phase and 100% pre-"go live". Develop test procedure, conduct test and coordinate signoff activities.

All of the team members are located in the Aspen home office in Calgary, however, there are some stakeholders working at construction sites within the city of Calgary. They typically dial in for meetings and attend the workshops in person.

2.8 PROJECT DELIVERABLES

BA will conduct Business Analyst activities and document each output from the BA tasks. The output will become the key deliverables for the project, once reviewed and approved by the Project Team. The key deliverables are identified as following:

- Business Analyst Requirement Management Plan
- Requirements Tracking and Tracing Document
- Business Case
- Solution Options
- Solution Validation Plan

2.9 BUSINESS ANALYST PROCESS AND MONITORING

The BA will perform the Business Analyst tasks by starting work on the requirement gathering. All the requirements gathered will be formed as Business Requirement Document.

The BA and Project Manager will report to the project sponsor bi-weekly and update them on the progress of the project. A project folder will be created on a SharePoint site and all stakeholders will be granted access. The Business Requirement Documents along with other project related documents will be posted on the SharePoint site. There will be project milestones posted on SharePoint as well, with the risk score and health status of the project. The folders under the project drive will be numbered and named according to the Project Management Institute (PMI) standard.

3 REQUIREMENTS PLAN

3.1 REQUIREMENT ELICITATION PROCESS

The BA will use the methods listed below to gather requirements for the CIS Migration and will complete and deliver by July 31, 2015. All of the gathered requirements will be issued as a Business Requirement Document (BRD) to all of the stakeholders for review.

1) Market Research: The BA will research new ERP software available in the market against the current ERP software provider. . The BA will document and compare the features, functionalities, the requirements of a migration and cost.
2) Workshops: All the SMEs will be invited for a workshop and walked through the new version of CIS and the choice of other ERP systems, demonstrate the functionalities and processes. Stakeholder concerns will be reviewed and prioritized. SMEs will identify stakeholders who will be impacted by the project.
3) Interviews: Following the workshop there will be interviews conducted to follow up and gather detail requirements from SMEs, which will also help identify who will be involved in final walkthrough and testing.

All the requirements captured will be documented in the Requirements Attribute Table in an Excel spreadsheet and will be updated and tracked throughout the life of the project. The information for the Requirement Attribute Table (RAT) is listed below in Table 4.

Table 4 Requirement Attribute table

Item	Title	Description
1	Requirement #	Unique requirement identifier
2	Type	Requirement Type
3	Description	Requirement description
4	Complexity (H/M/L)	Complexity rating
5	Priority (H/M/L)	Priority rating
6	MoSCoW	Must , Should, Could
7	Risk ((H/M/L)	Risk or meet or not meet the requirement
8	Status	Status of requirement (Proposed, Accepted, Verified, Postponed, Cancelled, Implemented)
9	Dependencies	Dependencies ,refer to requirement #

3.2 REQUIREMENTS REVIEW PROCESS

Once completed the elicitation activities, all of the requirements are prioritized and documented using the MoScoW analysis technique (as described Table 4). A follow up workshop will be scheduled to walkthrough the documented requirements with all the stakeholders, all of which will be given one

week to review the documentation and return any comments to the BA. The BA will then incorporate all the comments and revise the requirements.

3.3 REQUIREMENT SIGN OFF PROCESS

All of the stakeholders identified as accountable or responsible in the RACI chart need to sign off the requirements. Following signoff, requirements will be base lined for the project. Any changes to the requirements in the future will need to follow the requirement change process.

3.4 REQUIREMENT CHANGE PROCESS

Any change to the requirements will need to be submitted to the Project Team. The BA will update the requirements with a version history. The impact of the requirements will be documented and the BA will perform further analysis regarding the change requirements. All the requirements along with the change will be reprioritized and re-base lined, re-distributed to stakeholders for review and sign off. All the communication will be documented and filed on the project SharePoint site.

4 REQUIREMENTS GATHERING AND DOCUMENTING

The findings of each elicitation process are to be documented in the below sections.

4.1 REQUIREMENT ELICITATION PROCESS

4.1.1 MARKET RESEARCH

The BA conducted research on current the ERP software market, the products available. The features are listed in Table 5 below:

Table 5 Product Feature Compare

Brand	CIS	Microsoft DGP	SAP All-In-One	SRE
Features	CIS provides a comprehensive ERP system with an emphasis on construction management, including construction-specific elements such as fleet tracking, subcontract management, and document management.	Microsoft DGP includes features for financial management, human resources and supply chain management. Designed to run on an SQL server, DGP can be deployed as an on premise or hosted solution.	Business All-in-One, developed by SAP, can support small companies as well as large enterprises. SAP offers their applications for human resources, financial management, business intelligence and CRM on a standalone basis.	SRE is a web-based financial accounting and business management solution that provides access to financials, operations, inventory and customer orders from anywhere and at any time along with the flexibility of the cloud.
Accounting	✓	✓	✓	✓
Budget/Expense Tracking	✓	✓	✓	✓
Automatic Notifications	✓	✓	✓	✓
Business Intelligence (BI)	✓	✓	✓	✓
Cloud Platform	✓	✓	✓	✓
Collaboration Tools	✓	✓	✓	✓
Clients				
Country	Global	Global	Global	Global
Size of Client	Small to Medium	Small to Medium	Small to Large	Small to Medium
Domain Area	EPC	EPC	All	EPC
Technical				
Database	Progress	SQL	Oracle	SQL
Integration	Customized	Customized	Customized	Customized

Brand	CIS	Microsoft DGP	SAP All-In-One	SRE
Mobile App device	✓	✓	✓	✗
		Modules		
Accounting	✓	✓	✓	✓
Business Intelligence	✓	✓	✓	✓
Customer Relationship Management	✓	✓	✓	✓
Human Resources	✓	✓	✓	✓
Inventory Management	✓	✓	✓	✓
Manufacturing	✓	✓	✓	✓
Supply Chain Management	✓	✓	✓	✓
Fleet Management	✓	✓	✗	✗
		Report		
Type	System, Excel , pdf and Customized	System and Customized	System and Customized	System and Customized
User Configurable	✓	✗	✓	✗
Dashboard	✓	✗	✗	✗

The migration requirements and estimated costs are listed in Table 6.

Table 6 Migration Requirement and cost estimate

Brand	CIS v11	CIS v11 Prime	Microsoft DGP	SAP All-In-One	SRE
			Hardware		
Purchase New Server	Required	✗	Required	Required	Required
Cost	$20,000	$0	$30,000	$50,000	$40,000
			Service		
Installation	Required	Minimum	Required	Required	Required
Installation fee	$5000	$0	$5000	$5000	$5000
Data Migration	Minimum	Minimum	Required	Required	Required
Data Migration Cost	$2000	$2000	$4000	$8000	$5000

Brand	CIS v11	CIS v11 Prime	Microsoft DGP	SAP All-In-One	SRE
Fees					
License for product	Per seat $500/year	Per group $3000/year (10 ppl)	Per seat $900/year	Per seat $1000/year	Per seat $800/year
License for database	Per seat $500/year	Per seat $500	Per seat $500/year	Per seat $1000/year	Per seat $500/year
Others					
Training	Minimum	Minimum	Required	Required	Required
Business Process Change	Minimum	Minimum	Required	Required	Required
Implementation	8-12 Months	8-12 Months	8-12 Months	12-24 Months	12-18 Months

4.1.2 WALK-THROUGH

The walk-through was conducted with all of the key stakeholders to demonstrate pre-configured systems for the above listed ERP systems by the software consultants. Feedback on the functional requirements and the "nice to have" features were documented from all of the stakeholders during the walk-through.

The main findings through the walkthrough were:

1. SRE had a similar built-in work processes as CIS, which is easy to adopt by Aspen. Microsoft DGP and SAP all-in-one are popular with a greater user base, however the processes built-in the system need some customization in order for it to be adopted by Aspen, or alternatively Aspen will need to do some business re-engineering.
2. In CIS fleet management is an individual module and interlinks with payroll, contract and subcontract. When Aspen posts the cost for equipment rental through the fleet module in CIS, it posts the cost separately into payroll for operator's cost, contract crude cost or subcontract billing cost. Other systems do not have a built-in fleet module, so they all need system customization.

4.1.3 INTERVIEW

The BA conducted separate interviews with all the SMEs from key stakeholder groups, such as Accounting, HR and Payroll, Supply Chain, Contracts, Document Control, Marketing and Surveyor. The current process and system functionality was mapped. The summary of the interviews conducted are listed below:

1. SMEs are satisfied with the functionality of CIS and there are a lot of good features that have not yet been adopted.

2. All of the system issues need management approval before being forwarded to CIS's help desk. This will reduce the overall cost of the system support, however it will cause delays to get some tasks completed.
3. The new dashboard report from CIS v11 and the additional reports are combined, as per the latest requirements from CIS's current clients. It fulfills the current reporting requirements for Aspen. The reports from the other three software systems have gaps within Aspen's current reporting needs.
4. Going paperless for invoice submission and processing will significantly increase the efficiency in processing times, while reducing overhead cost.
5. Having the Surveyor go paperless by submitting inspection information into system through a handheld device will increase the accuracy and reduce delays for contract payment.
6. Currently Aspen purchased 50 licences per annual, however there are only 25 users will be using system most of the time. The rest users are random login. The CIS prime v11 can provide group license option, Aspen can reduce cost by controlling float licensed users in total of 30.

4.1.4 WORKSHOPS

The BA presented all the requirements gathered through the previous session. The requirements were accessed by all the stakeholders and sent for approval and were base lined.

4.2 DOCUMENTED REQUIREMENTS

The gathered requirements are listed in Table 7. The requirements are categorized by Business Requirements and Stakeholder Requirements.

Table 7 Requirement Attribute Table

Req #	Type	Description	Complexity (H/M/L)	Priority (H/M/L)	MoSCoW	Risk	Status	Dependencies
B1	Business	The ERP system implemented will reduce allocated IT cost by 30% annually	H	H	M	H	Accepted	
B2	Business	The ERP system implemented will increase data transaction efficiency by 50%	H	H	M	M	Accepted	S1,F12
B3	Business	The ERP system migration shouldn't impact financial year-end process	H	H	M	H	Accepted	
B4	Business	System Dashboard report for company high level Financial and performance Summary	H	H	M	M	Accepted	
B5	Business	System should support more than 100 GL accounts	H	H	M	H	Accepted	
B6	Business	System support multiple company setup	H	H	M	H	Accepted	
F1	Function	System has built in year-end process procedure	H	H	M	H	Accepted	B5,B3
F2	Function	System should have clear error message	H	H	M	H	Accepted	
F3	Function	System should have configurable user security setup	H	H	M	H	Accepted	
F4	Function	System should have on screen help and out of box help manual	H	H	M	H	Accepted	
F5	Function	System should have GL report and cash flow report	H	H	M	H	Accepted	
F6	Function	System should have direct banking exchange	H	H	M	H	Accepted	
F7	Function	Fleet management can link to Contract Ledger	H	H	M	H	Accepted	
F8	Function	Fleet management can link to Payroll	H	H	M	H	Accepted	
F9	Function	System should have configurable milestone and auto generate forecast activity	H	H	M	H	Accepted	
F10	Function	User task should synchronize with Outlook Calendar	H	H	M	H	Accepted	

Req #	Type	Description	Complexity (H/M/L)	Priority (H/M/L)	MoSCoW	Risk	Status	Dependencies
F11	Function	System should send alert for delay task	H	H	S	H	Accepted	
F12	Function	System should support customer create invoice through any type of browser and handheld device	H	H	M	H	Accepted	
NF1	Non-Functional	System can handle the licensed users by active users	H	H	M	H	Accepted	
S1	User	Surveyor can enter inspection result through handheld unit	H	H	M	H	Accepted	
S2	User	User configurable report	H	H	M	H	Accepted	
S3	User	System can manage customer feedback	H	M	S	M	Proposed	
S4	User	Payroll can manage different type of pay period	H	H	M	H	Accepted	F8
S5	User	Fleet management can post labour charge to payroll	H	H	M	H	Accepted	F8,F7
S6	User	PO and contract template is configurable	H	H	M	M	Accepted	
T1	Transitional	System should have all GL accounts migrated with the same structure	H	H	M	H	Accepted	B5
T2	Transitional	Users should be trained before go-live	H	H	M	H	Accepted	
T3	Transitional	All current data should be migrated 3 months before go-live	H	H	M	H	Accepted	
T4	Transitional	Notification should be sent to customers and trades who will require remote access to the system	H	H	M	H	Accepted	

5 SOLUTION OPTIONS AND ANALYSIS

Based on the requirements gathered and the existing process Aspen is using, the Project Team did research on benchmarking the industry's best ERP solutions for the construction industry.

The following alternatives are proposed:

Option 1: Upgrade to CIS version 11 by August 1, 2016.

Option 2: Upgrade the existing CIS system to version 11 Prime by August 1, 2016. Aspen will migrate the data to CIS's fully managed hosting service, utilize CIS applications and support their infrastructure through their 'Cloud' based platform.

Options 3: Purchase a different ERP software (Microsoft DGP, SAP All-In-One or SRE).

5.1 ALTERNATIVE SOLUTION OPTION 1

Option 1: Upgrade to CIS version 11 by August 1, 2016.

Benefit: Aspen will save money for developing and implementing a solution. There will be no process change for Aspen Construction.

Risk: There will be no cost savings for IT and future support.

Costs: There will be cost associated to the purchase of the application server, database server, server setup and data migration. The system support and troubleshooting costs will be billed monthly for support calls from Aspen.

Requirement coverage: All the requirements will be covered by this option.

5.2 ALTERNATIVE SOLUTION OPTION 2

Option 2: Upgrade the existing CIS system to version 11 Prime by August 1, 2016. Aspen will migrate the data to CIS's fully managed hosting service, utilize CIS applications and support their infrastructure through their 'Cloud' based platform.

Benefit: Aspen will save the cost for developing and implementing a solution. There will be no change in the process inside Aspen Construction.

Risk: There might be a security risk for data hosting on the cloud and difficulty with future migration of the legacy data to other ERP solutions.

Cost: The only cost for this option is for data migration service.

Requirement coverage: All the requirements will be covered by this option.

5.3 ALTERNATIVE SOLUTION OPTION 3

Option 3: Purchase a different ERP software (Microsoft DGP, SAP All-In-One or SRE).

Benefit: There are new features within the listed ERP systems. It might bring significant benefits for the business in the future if adopted. It may bring future cost savings to the business.

Risk: Aspen will have to re-adapt current process to the business process from the ERP software of choice. The implementation period to deploy a new ERP system is 12-18 months and there is a high risk that Aspen will miss their next year-end period.

Cost: There will be costs associated to the purchase the application server, database server, server setup, data migration and consultant fees for implementation of new solutions. Costs for system support and troubleshooting will be billed monthly as they receive support calls from Aspen.

Requirement coverage: All the business requirements and stakeholder requirements are covered by this option, except the fleet management module, which is designed differently within other ERP systems. This will require a process change for Aspen.

Table 8 Cost summary

Alternatives					
Options	Option 1	Option 2	Option 3		
			a	b	c
Brand	CIS v11	CIS v11 Prime	Microsoft DGP	SAP All-In-One	SRE
Cost					
Hardware	$20,000	$0	$30,000	$50,000	$40,000
Installation	$5,000	$0	$5,000	$5,000	$5,000
Migration	$2,000	$2,000	$4,000	$8,000	$5,000
Total Implementation	$27,000	$2,000	$39,000	$63,000	$50,000
License for App	$500/seat	$5,000 (10 seats)	$900/seat	$1,000/seat	$800/seat
License for Database	$500/seat		$500/seat	$1,000/seat	$500/seat
Total cost for 50 Seats annual	$50,000	$25,000	$70,000	$100,000	$65,000
Support	$50/hour	$10,000 /year	$90/hour	$100/hour	$90/hour
Total cost for support annual (400 hours)	$20,000	$10,000	$36,000	$40,000	$36,000
Overall Cost	$97,000	$37,000	$145,000	$203,000	$151,000

5.4 RISK ANALYSIS

The BA performed a risk analysis for the identified risks. The following table lists the risks identified during the analysis phase, along with the solutions and mitigation plan.

Table 9 Risk Analyst

Ref. #	Category	Identified Risk or Opportunity	Mitigation	(P)	(I)	(P x I)	Rank
1	Business	Overall cost exceed budget	Choose the option under company set budget, or prove that the ERP system of choice will bring future cost saving or significant benefit for business.	3	4	12	3
2	Business	Delay to meet the next year end period	Monitor the schedule constantly, identify any significant slippage and find immediate solutions.	4	5	20	1
3	Business	Delay of signoff	Project manager and BA have to ensure all the tasks and signoffs on time, and there is no delays.	4	4	16	2
4	Implementation	Agreement of business stakeholders on proposed new features	Review new features from business perspective. Define business benefits.	3	2	6	5
5	Implementation	Availability of broad business audience to take the training on new interface	Plan training ahead. Have multiple training session.	3	3	9	4
6	Implementation	Adoption of new processes and features	Ensure training is executed as per plan. Provide ongoing support on new processes and features.	3	1	3	7
7	Implementation	Delay of develop internal training	Start to work on the development of internal training as the development of the project	2	2	4	6

6 RECOMMENDATION AND SOLUTION VALIDATION PLAN

6.1 RECOMMENDATION

After going through the analysis for the above three options, option 2 upgrading the existing CIS system to version 11 Prime by taking the fully managed hosting service provided by CIS, utilizing CIS applications and supporting infrastructure through their 'Cloud' based platform, is elected by the Project Team as the recommended solution. It meets the business and stakeholder requirements and the migration will be completed within 12 months. As shown in the following table, option 2 will save Aspen 50% annually in IT support costs and the cost savings for migration and adoption to CIS v11 Prime is $63,000.

Table 10 Cost Compare

	Alternatives				
Criteria	Option 1	Option 2	Option 3		
Brand	CIS v11	CIS v11 Prime	a Microsoft DGP	b SAP All-In-One	c SRE
Budget	$100,000	$100,000	$100,000	$100,000	$100,000
1st year cost	($97,000)	($37,000)	($145,000)	($203,000)	($151,000)
Cost saving for project	$3,000	$63,000	($45,000)	($103,000)	($51,000)
Annual allocated budget	$70,000	$70,000	$70,000	$70,000	$70,000
2nd year cost	($70,000)	($35,000)	($106,000)	($140,000)	($101,000)
Cost saving	0%	50%	(51%)	(100%)	(44%)
NPV (5 years)	($27,000)	$134,137.79	($179,027.45)	($335,275.59)	($170,579.19)

6.2 SOLUTION LIMITATIONS

1. The solution will cover all the standard processes from CIS v11, however there will be some new built-in features which Aspen will have to adopt, which cannot be removed or disabled by configuration.
2. The data will be hosted at CIS's facility. If there is a requirement for system maintenance, the outage will need to be scheduled ahead of time, according to the company's financial and billing schedule.
3. There will be a process change and training required for contractors who require invoice and billing to system as there will no longer be a paper invoice process in the future.
4. There will be process change for how the Surveyor submits inspection results, as there will be no paper submissions. They will use a handheld device to enter the information and synchronize it with the central database.
5. All support calls will be forwarded to the CIS help desk. Delays may be dependent on the Help Desk's workload.

6.3 APPROVALS AND NEXT STEPS

The Project Team will give a presentation to the sponsors and get the project charter approved and signed off. There will be a SharePoint site setup for storing project document and all communication. All the SMEs and stakeholders involved in the project will be granted access to review, update and submit documents through the SharePoint site. The project health status will be tracked through the website as well. The full project schedule will be published, reviewed and updated on a weekly basis by the Project Team.

Once the project is approved to proceed, the BA will prepare a Business Case, which will then be presented to the project stakeholders for approval during the following week.

Project consultants will start to work on the business process review, work with SMEs to identify current processes and future processes.

6.4 SOLUTION VALIDATION PLAN

A User Acceptance Test (UAT) is scheduled on May 1, 2016, when the UAT system will be deployed. There is a three month window for UAT testing, before the signoff to “go live”. Any deficiencies identified will be collected, prioritized and sent back to the Project Team for review. If the defect causes design or scope change, it will require a written notification to the stakeholders, which will then require approval. The impact, cost and schedule will be reviewed at that time and the schedule for the change will be rolled out.

There will be a Team Testing Activity Meeting scheduled for 30 minutes every day, in order to review testing activities, road blocks, any unresolved issues, and to review the deficiency list.

Test script and workflow will be provided to ensure that the test criteria is met when stakeholders go through each process. All these activities will be summarized to match the requirements. A gap analysis will follow, to recognize if there is any missing information and processes will be captured and documented.

The deficiencies will be reviewed at the criticality level. A red light will indicate that there are still a number of defects in the high or medium criticality rating. All the defects being fixed will be sent back to the tester to put into regression test. Once the tester updates the defect, the status will be closed, once it passes the test.

According to the project timeline, the system will switch over on August 1, 2016. There will be UAT signoff prior to that. There will also be a process and Key Performance Indicator (KPI) report developed to track the cost savings for this process, the processing time to process and post ledgers, post invoices, and submitting Surveyor information.

7 BUSINESS CASE

Business Case Name: Aspen Construction – CIS Migration

Prepared by: Huijie Zi-Yep

Date Issued: March 30th, 2015

7.1 EXECUTIVE SUMMARY

Aspen Construction has been using CIS (Construction Industry Solutions) for 30 years. It is the core management accounting system used to maintain their business. Recently, CIS announced that they will release CIS Version 11 mid 2015, which will include major changes in the architecture of the software that will allow the system to adapt to different operating platforms. They will also stop supporting their previous versions of the system at the end of 2016.

There are 16 months until the next year end period in August 2016 an Aspen needs to take this opportunity to review and benchmark against the current software market, in order to decide whether to select a different ERP solution that will fulfill all of the company's existing requirements and will also reduce cost and increase efficiencies, or upgrade to CIS v.11.

7.2 PURPOSE STATEMENT

Aspen needs to make a decision on whether to purchase the new version of CIS or a different ERP system in the market, thereby implementing and migrating the legacy data before the next year end period August 2016. Aspen also wants to reduce IT support costs and the annual budget for maintaining the ERP system by 30%, increase the efficiencies by using online invoice submission and paperless submissions from Surveyors through a handheld unit.

7.3 EVALUATION ANALYSIS

The Project Team performed market research, selected three other highly ranked ERP systems adopted by peers in the industry. The BA compared the requirements for upgrading or migrating the ERP system, the effort required and the cost. Aspen invited software consultants from Microsoft DGP, SAP All-In-One and SRE to conduct a demonstration of their respective products to key stakeholders. Then BA held interview sessions after to clarify the requirements with stakeholders and multiple workshops to prioritize the requirements. The following requirements were concluded:

- Aspen needs to upgrade to CIS v11, as the previous version will be discontinue and no support will be provided after the end of 2016.
- Aspen's next year end period is August 2016 and the system needs to migrate and switch over before that time.
- Aspen wants to reduce its costs associated to annual IT support by 30%.
- Aspen wants to implement user configurable report and increase efficiency for processing invoices and Surveyor reports.

7.4 ASSUMPTIONS

The following assumptions were made:

- The new ERP system implemented will need to have support from the software vendor for the next 10 years, with no major architecture change.
- All stakeholders will be advised of the changes and granted access to the new ERP system, training or instruction, if required.
- The new ERP system and the legacy system will operate parallel to one another for 3 months, with the legacy data either being migrated or archived.
- User training will be completed upon a “go live” date.
- The cost to maintain the new ERP system should be within the company’s annual allocated budget.

7.5 OPTIONS

The following options were proposed by the Project Team:

1. Upgrade the existing CIS system to version 11 by August 1, 2016.
2. Upgrade existing CIS system to version 11 Prime by August 1, 2016. Aspen will migrate the data to CIS’s fully managed hosting service, utilize CIS applications and supporting infrastructure through their 'Cloud' based platform.
3. Purchase a different product from the market (i.e. Microsoft DGP, SAP All-In-One and SRE).

Table 10 Compare Options

Option		Cost	Maintainance	Meet Business requirement	Cost Saving	Increase Efficiency
1		$97,000	$70,000	Yes	No	Yes
2		$37,000	$35,000	Yes	Yes	Yes
3	**a**	$145,000	$106,000	No	No	Yes
	b	$203,000	$140,000	No	No	Yes
	c	$151,000	$101,000	Partial	No	Yes

Table 11 Options summary

Option	Implementation effort	Benefit	Issues
1	M	Aspen will save costs for developing and implementing a solution. There will be no process change for Aspen Construction.	There will be no cost saving for IT and future support.

Option	Implementation effort	Benefit	Issues
2	L	Aspen will save the cost for developing and implementing a solution. There will be no process change for Aspen Construction.	There might be risk for data security, since data is hosted on a cloud based platform.
3	H	There might be future cost savings for IT and system support. The new features from the ERP system might bring significant cost savings if they are being adopted by Aspen.	Aspen will have to re-adapt different business process from ERP software of choice. The implementation period to deploy a new ERP system is 12-18 months and there might be high risk that Aspen will miss their next year-end period.

7.6 RECOMMENDED OPTION

Among the three options, Option 2 to upgrade the existing CIS system to version 11 Prime and take the fully managed hosting service provided by CIS through the 'Cloud' based platform is recommended. The migration cost is under the current budget and it will reduce future IT support costs by 50%.

7.7 RISK ANALYSIS

The following are the top three risks identified during the risk analysis.

Risk#	Risk	Mitigation plan
1	Delay to meet the next year end period	Monitor the schedule constantly, identify any significant slippage and find immediate solutions.
2	Delay of signoff	Project Manager and BA have to ensure all the tasks and signoffs occur on time, and there are no delays. If there is disagreement with the function change, the Project Team needs to work on contingency plan with stakeholders immediately.
3	Overall cost exceeds budget	Choose the option under company's set budget and make sure the productivity is within the consultant hours.

7.8 IMPLEMENTATION STRATEGY

The implementation plan is outlined as below:

Milestone	Due Date
Project initiation	April 1, 2015
Market research, product analyst, and impact analysis	May 1, 2015
Solution options documented	August 1, 2015
Presentation of Business case and recommendations to Aspen Directors	October 1, 2015
Budget approval and system design start	November 1, 2015

System design complete, demonstration and walkthrough	February 1, 2016
UAT environment setup, test and acceptance, system “go live”	May 1, 2016
System switch over	August 1, 2016

7.9 CONCLUSION

To meet the CIS software support cut-off date at the end of 2016 and Aspen’s financial year end on August 1, 2016, a recommendation is made to upgrade the current CIS to version 11 and take the CIS Prime option to migrate data to CIS’s cloud based platform. The plan is to have CIS version 11 “go live” three months prior to the company’s year-end period which is May 2016. Both systems will run in parallel to one another and finally switch over upon the company year-end. The cost to implement the upgrade and migration is under budget and the solution will save Aspen 50% in annual IT support costs.

8 LESSONS LEARNED

8.1 CHALLENGES DURING THE CASE STUDY

The following are the challenges experienced during the case study:

1. I had a hard time keeping the scope small and trying not to expand the subject. As you go through the details of a business problem, there are a lot of details that have to be avoided to make it less convoluted.
2. There are so many business terms and it will take too much time and space in order to explain them. I assume that readers/stakeholders know what I am referring to.
3. I had to continuously refer to the requirements defined at the beginning to make sure the content and analysis are in line with the scope I proposed.
4. This is my second submission. I changed the subject since the original subject was a big scope and it was hard to draw a conclusion without a deeper analysis of the subject.
5. It took me one year to finish all the BA courses, so I had to go back and review the subjects and techniques that I had previously learned.

8.2 WHAT WORKED WELL

1. The last course helped me review the subject and draft my requirement plan. The tips and highlights of the discussions helped me structure the final subject.
2. I also benefited by reviewing subjects of other students to see what they prepared.
3. The online course website is very helpful tool. I kept going back to review the discussions and submissions, which helped me recall my original understanding of the subject.

GLOSSARY

Term of Acronym	Description
CIS	Construction industry solutions
ERP	Enterprise Recourse Planning
GL	General Ledger
PL	Purchase Ledger
PR	Payroll
CL	Contract Ledger
HR	Human Recourse
FL	Fleet Management
CRM	Customer relationship management
BI	Business Intelligence Report
PMI	Project Management Institution
BA	Business Analyst