BC Ferries Automated Customer Experience (ACE) Program Review – Follow Up 2015

May 11, 2015

pwc

Table of Contents

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Executive Summary

British Columbia Ferry Services Inc. (BC Ferries) is undertaking a large, complex set of initiatives to enable transformational change in the business operating model of the ferry service. The Automated Customer Experience (ACE) Program is aligned with BC Ferries strategic direction and is a necessary enabling platform in a larger change program to improve customer experience, grow ridership, increase value-add revenue and reduce operating costs through demand management. The computer systems currently in use by BC Ferries are not able to accommodate these transformational changes.

The BC Ferry Commission engaged the services of PricewaterhouseCoopers LLP (PwC) to conduct a performance review of the ACE Program in October, 2013. The initial Program Review identified a number of program governance and delivery issues and made recommendations to address these in a report entitled "*BC Ferries Automated Customer Experience (ACE) Program Review – December 2013*" posted on the BC Ferry Commission web site.

The 2013 Performance Review assessed the program against key success criteria and made several recommendations designed to strengthen program delivery and address identified risk elements. The purpose of this current review (April 2015) is to follow up on the program changes resulting from the 2013 recommendations, and to assess the state of the ACE Program in April of 2015. This report contains the findings and recommendations of the follow-up assessment.

In general, the current review found that the ACE Program has made significant changes in almost all of the identified risk areas, and has substantially reduced the overall program risk profile. The ACE program is positioned to deliver the foundations for future change initiatives such as the Fare Flexibility and Digital Experience program. The current review did identify a number of issues and makes recommendations to further improve the likelihood of program success.

Key insights identified during our review include:

- Program Sponsorship

  There are a number of changes occurring in program leadership. Most significantly, the program sponsor, while maintaining continuity in the sponsorship of ACE (as well as a number of other major IT initiatives), is retiring from the CFO position on the executive team. This may require additional efforts to maintain clear decision authority, ensure executive alignment, and support program delivery assurance.

- Inter-Program Governance

  The ACE program, PCI /Payment project and Fare Flexibility / Digital Experience program have inter-dependencies that need to be coordinated and effectively governed. Mechanisms will be required to address conflicting resource demands and to manage the functional, schedule and technical interfaces.

- Program Cost Considerations

  Program costs have been re-forecast consistent with the revised delivery approach and timing of the ACE program. Prices related to the three current RFP competitions may have an impact on the final program cost. While the detailed cost estimates were not reviewed as part of this assessment, the overall program cost estimate appears much more reasonable than forecast in 2013, for a program of the scope and complexity of ACE.

- Program Schedule Considerations

  The program schedule for the completion of release 1 of ACE appears aggressive. Key schedule risks have been identified and recommendations provided in the review. Continued strong management oversight will

be required to achieve the target delivery dates. It is important that management ensure satisfactory completion of testing and quality assurance activities before production release of the new system.

The report is structured around each of the 2013 assessment items and details the program changes since last review, provides an updated colour-coded risk categorization for each issue and documents any new or supplemental issues and recommendations arising from the current review. We have also included recommendations for further external assessment at critical stages in the program.

Review Objectives

The BC Ferry Commission carries the mandate to oversee major capital investments by BC Ferries t0 ensure that investments are aligned with longer term strategic goals and will deliver value to ferry service users and BC taxpayers. Under this mandate, the BC Ferry Commission engaged the services of PwC, an independent third-party consulting firm, and initiated a review of the ACE Program on October 23, 2013.

The Program Review issued a number of findings and recommendations to the BC Ferry Commission in late 2013, The purpose of the current review (April 2015) is to follow up on the implementation of the 2013 recommendations, and to assess the state of the ACE Program in April of 2015

The objectives of the April 2015 Program review were to:

- Assess actions taken in response to the recommendations made in the October 2013 review
- Validate the continued progress of the ACE Program
- Identify program/project risks and opportunities to enhance program delivery and reduce delivery risk
- Provide a report on findings and recommendations to the BC Ferry Commission in respect to identified risks and opportunities.

Scope & Approach

The scope of the April 2015 program review included:

- Review and assess the health of the ACE Program and all sub-projects against the findings and recommendations from the October 2013 review
- Review any changes to the ACE program as a result of the initial Performance Review, including changes to the scope of all sub-projects, governance structure, project planning and implementation plans
- Review the current status of the ACE program and all sub-projects; review and assess changes to key assumptions, cost estimates/potential benefits and determine their reasonableness
- Review any changes to vendor selection process, key contract provisions or negotiation strategies
- Assess organizational capability to complete the design, integration and implementation of all projects within the revised ACE program
- Review and assess the key interdependencies between the ACE program and the Fare Flexibility and Digital Experience Initiative and the project management of these interdependencies
- Review and assess current project risks and mitigation strategies
- Review and assess current project governance model (including governance around customization); identify gaps or areas of ineffective governance
- Review and assess current change management and communications strategies.

Out of scope for the April 2015 review was:

- Re-structuring the fundamental model for delivery of the program
- Detailed review of project cost estimates
- Solution architecture and solution design review
- Vendor capability validation
- Review of external programs such as the Fare Flexibility and Digital Experience program and the Payment /PCI project.

The April 2015 review was carried out through:

- Review of key current program documentation
- On-site interviews with ACE Program leaders and key stakeholders from across the organization
- On-site interviews with project leads and members of ACE Program project teams.

Notice to Reader

This Report is issued by PwC for the exclusive use of the Commission in connection with its performance reviews of BC Ferries.

Our work did not constitute an audit conducted in accordance with generally accepted auditing standards, an examination of internal controls nor attestation nor review services in accordance with the standards established by the Canadian Institute of Chartered Accountants. Accordingly, we do not express an opinion nor any other form of assurance on the financial or other information, or operating internal controls, of BC Ferries.

PwC did not examine, compile or apply agreed upon procedures to satisfy the requirements of the Canadian Institute of Chartered Accountants to the financial information used in this Report and we therefore are unable to express assurances on such information except where expressly stated in the Report to form part of the scope of our work.

Further this Report does not constitute an opinion as to legal matters, including the interpretation of the Coastal Ferry Act or any other similar matters. The economic impact of the various procurement options is also outside the scope of PwC's work.

Our work is based primarily on the information and assumptions listed in the body of this Report. While we read information from various sources we did not perform checking or verification procedures except where expressly stated in the Report to form part of the scope of our work. Our work and commentary is subject to assumptions, which may change with the benefit of further detailed information. We make no representation regarding the sufficiency of our work and had we been asked to perform additional work, additional matters may have come to our attention that would have been reported to the Commission.

Some of the documents and figures we reviewed were produced by third parties. We did not corroborate or verify these documents and figures with these parties. It is outside the scope of our review to evaluate the methodology used to conduct independent studies; therefore, we have accepted the information as presented, including conclusions. We did review the credentials of external consultants that BC Ferries management relied upon and that we were unfamiliar with.

The outputs of the Report are intended to provide the Commissioners with information to assist in informing their decision making process pertaining to BC Ferries. PwC accepts no liability in respect of any loss, damage or expense of whatsoever nature caused by any use the reader may choose to make of this Report, or which is otherwise consequent upon the gaining of access to the Report by the reader.

Our Report, including its schedules, must be considered in its entirety by the reader. Selecting and relying on specific portions of the analyses, or factors considered by us in isolation may be misleading.

Background

British Columbia Ferry Services Inc. (BC Ferries) is undertaking a large, complex set of initiatives to enable transformational change in the business operating model of the ferry service. The first phase of this transformation, the ACE (Automated Customer Experience) program, is designed to replace core IT systems used for customer booking, ticketing, and check-in, consolidate payment processing and streamline vehicle and passenger traffic at terminal sites. The ACE Program will also provide a new platform and business processes designed to enable the BC Ferries to understand and segment their customers, provide targeted marketing and value-add services, establish a strong loyalty program and enable future implementation of demand management through increased advanced purchase incentives and price flexibility.

BC Ferries has recently brought forward a "Fare Flexibility and Digital Experience" initiative pursuant to Section 55 (2) of the *Coastal Ferry Act* for capital funding approval. The business case for this subsequent program identifies several components targeted at enhancing the customer experience and increasing revenue:

- Provide a pricing engine to test scenarios and establish dynamic pricing set-points to the new booking system
- Provide customers with mobile device access to the new booking, ticketing and check-in system
- Increase the capacity and robustness of the BC Ferries web site to handle online web and mobile traffic
- Implement a series of business transformations to provide enhanced service offerings to customers
- Transition the majority of customer sales at major terminals from "show and go" to pre-booked reservations.

Prior to approval of capital funding of this new program, the BC Ferry Commission is seeking insight as to whether the enabling ACE Program will deliver the necessary foundations for the subsequent program.

Throughout 2014, the ACE program has undergone significant re-structuring and has developed detailed bottom-up project plans. The component related to payment processing was de-scoped from ACE and combined with PCI compliance as a separate corporate initiative. The implementation of Primavera Project Management toolset was de-scoped from ACE and established as a broader corporate initiative for capital program management. The re-planning of the program was accompanied with a re-estimation of the total cost and schedule to complete.

The program deliverables have been re-structured into three major releases to better align the program with seasonal black-out periods and resource availability constraints. The first major release has been further sub-divided into several sub-releases:

Release:	Target Date Available for Use*
• eBooking, Ticketing, Check-in and Call Centre CRM	
o Vehicle Classification System pilot	Q1-2015
o Base CRM system	Q2-2015
o eBooking Reservations and Call Centre CRM	Q3-2016 (Release R1.1)
o Ticketing and Check-in release	Q3-2017 (Release R2.0)
• Extended CRM and Card Management	Q4-2017
• Terminal Automation Hardware and Fast Ticketing	Q1-2018

* Target dates as per BC Ferries High Level Integration Schedule

The program sponsor, program business lead and program technical lead have made significant strides in addressing the issues identified in the 2013 review. There are a number of transitions underway in the program leadership including the program sponsor transitioning out of the CFO role and executive team. The program technical lead is transitioning off of the program as he is retiring, but is providing transitional support over the next six months to the newly hired technical lead.

The ACE program is now nearing completion of eBooking solution development phase and has refined the requirements and design elements for the other components of the program.

The program is in the RFP process for selection of external vendors to carry out CRM configuration, system integration (SOA) development and provide QA and testing services. The project plans have recently been incorporated into an integrated program plan within the corporate Primavera toolset and time tracking is being rolled out to team members to enable monitoring of the progress against plan.

Findings and Recommendations

Summary Review Update

#	Best Practice Criteria	Q4-2013	Q2-2015	Comments
1	Business case is aligned with corporate strategy			
2	Business case addresses all components			Fully addressed
3	The program will deliver value for money			
4	Regulatory restrictions appropriately considered			
5	Senior executive business sponsorship			Fully addressed, some cautions
6	Leadership engagement			
7	Business subject matter expert engagement			Improved, still some higher risks
8	Vendor selection process			
9	Appropriate program governance framework			Significant improvement
10	Formal project management methodology			
11	Priority between project cost, schedule and scope			Improved
12	Project managers are adequately empowered			Fully addressed
13	Formal change control practices			Opportunity to enhance
14	Quality assurance function has been established			Improved, still some higher risks
15	Overall integrated schedule has been created			
16	Program schedule is accurate and actively used			Improved, some risks
17	Formal risk management plan has been established			
18	Action is taken to mitigate major program risk			Addressed
18a	Rapid resolution of identified issues	N/A		New risk identified
18b	Timely action to address stream schedule slippage	N/A		New risk identified
19	Package software meets business requirements			No change – timing
20	Overall integration architecture in place			
20a	Adequate solution architecture resources	N/A		New risk identified
21	Effort and approach to integrate solution components			Improved, still some higher risks
22	Adequate network and hardware infrastructure			Fully addressed
23	Shared sense of confidence and accountability			Opportunity to enhance
24	Required changes to business operations defined			Improved
25	Training requirements addressed			
26	Benefits realization plan in place			Some progress
27	Inter-program governance and coordination	N/A		New criteria

Colour index:

Green: Best practice is being clearly demonstrated. No corrective action required.

Yellow: Caution, corrective action will improve likelihood of program success.

Red: Significant risk to the success of the program. Corrective action required.

Updated Findings and Recommendations

	#	Best Practice	Findings	Implications / Risks	Recommendation
		Business environment			
2013	1	Business case is aligned with corporate strategy.	Strongly aligned – a critical initiative to achieve BC Ferries operational integrity, customer satisfaction and revenue goals.	None	
2015 Findings ⬇				Implications / Risks	Recommendation
2015	1	Level of senior executive involvement and awareness of ACE Program objectives indicates continued strong alignment with corporate strategy.			

	#	Best Practice	Findings	Implications / Risks	Recommendation
2013	2	Business case addresses all components needed to realize desired outcomes.	Partial – realization of full benefits of the ACE 'platform' will require a number of additional components planned in a subsequent project(s).	Risk: Reduced business value if subsequent project is not implemented.	Timely review and approval of subsequent project.
2015 Findings ⬇				Implications / Risks	Recommendation
2015	2	The ACE Program has fully defined and scoped its critical sub-projects and determined an interface strategy to other Programs that will leverage and extend the ACE deliverables, such as Fare Flexibility/Digital Experience and Payment Services.			

	#	Best Practice	Findings	Implications / Risks	Recommendation
2013	3	The program will deliver value for money.	The current technical environment is complex, rigid, and built on obsolete technology. The current system locks in an old business operating model that is preventing BC Ferries from reacting to current business imperatives. The program is designed to deliver value both by reducing technical risk and by enabling a new customer focused business model.	None	
2015 Findings⬇				Implications / Risks	Recommendation
2015	3	The ACE program is designed to deliver foundational business capabilities that will enable BCF to offer new value-added products to its customers. The program is a lynch pin in the BCF strategy to increase revenues by leveraging its ability to provide new B2B and B2C offerings into the BC transportation market.			

		Best Practice	Findings	Implications / Risks	Recommendation
2013	**4**	Regulatory restrictions have been appropriately considered.	Appropriately considered. The program will enable variable pricing and allow BC Ferries to set both higher and lower prices, responding to different customer segments, while meeting regulated average price constraints.	None	
2015 Findings ⬇				**Implications / Risks**	
2015	**4**	No change in findings.			

	#	Best Practice	Findings	Implications / Risks	Recommendation	
2013	5	Major transformational business programs have a senior executive business sponsor.	The program is currently sponsored by the head of information technology (CIO).	Risk: The program fails to appropriately balance business and technical issues leading to major implementation problems.	Transition program sponsorship to a member of the senior executive team while maintaining appropriate accountability for the CIO.	
2015 Findings ↓				Implications / Risks	Recommendation / Caution	*BCF Response*
2015	5	ACE Program sponsorship has been transitioned to a member of the senior executive team. A Strategic Projects Committee of the Board has been established to oversee ACE and similar major transformational programs. The current sponsor has retired from his role as CFO but has been retained on a part-time basis (reporting to the CEO) as sponsor of the ACE Program, Fare Flexibility & Digital Experience Program, and Payroll Project.	With the change in positional power, there is inherent risk in conflicting decision making authority. The change to part-time sponsorship brings risks of capacity and coverage.	Ensure there are well documented norms for executive decision making as it relates to the ACE Program. Evaluate the need for additional capacity to oversee the program delivery assurance responsibilities.	*BCF agrees with the findings and recommendations. In addition to the normal governance meetings the Executive Sponsor, Program Owners and Program Director's meet monthly to brief the CEO on current status and raise any items for discussion from Steering Committee as appropriate. As noted the Board has established a Strategic Projects Committee which is briefed by the Executive Sponsor and Program Directors quarterly, at a minimum. Further, additional capacity overseeing Program delivery will be added.*

		Best Practice	Findings	Implications / Risks	Recommendation
2013	6	Leadership engagement.	The program is actively supported by business leaders across the organization.	None	
2015 Findings ⬇				Implications / Risks	Recommendation
2015	6	No change in findings.			

		Best Practice	Findings	Implications / Risks	Recommendation
2013	7	Business unit subject matter experts are actively engaged throughout the project lifecycle.	Business subject matter experts have been actively engaged in the requirements phase and are now being re-assigned to organizational readiness activities, with planned engagement during acceptance testing. There is a gap in business expert participation in the solution design and delivery phase.	Risk: The solution will be delayed due to time to obtain business input, or the solution may not meet business requirements due to missed input.	Assign dedicated business subject matter expert(s) to each project during design and development: BTC project CRM project Integration project Business readiness stream

2015 Findings ⬇			Implications / Risks	Recommendation	BCF Response
2015	7	Progress has been made on this risk with the establishment of a formal project stream (CEBT), additional engagement of business analysts and business unit SMEs on the project, and detailed planning and commitment of line of business resources to conduct user acceptance testing. However, the CEBT sub-project stream is in catch-up mode as it has been subject to turnover in leadership and the current leader has only recently come on board. • The full definition of business flows for eBooking and CRM have not been completed. • Definition of the UAT criteria and test plans for eBooking and CRM has not been completed. This team appears to be under-resourced.	There is a potential risk of project delays due to incomplete understanding and definition of User Acceptance Test criteria. As business flows are developed, additional business requirements may be discovered requiring further development or re-work.	Ensure that the CEBT team is properly resourced through the remainder of the ACE Program. This includes developing a succession plan for contractor resources or for staff that may retire within the ACE timeline. The planned UAT lead role needs to be filled on a priority basis High priority effort is required to complete and validate use cases and business process flows. Additional SMEs need to be appointed to complete the business flows and UAT test cases on a priority basis. Develop contingency plans to accelerate testing.	*BCF agrees with the findings and recommendations.* *Succession planning is in progress to ensure continued contract and staff resources throughout the duration of the program.* *The process has been initiated to have a UAT Lead on board on a priority basis no later than September 2015, as planned. As part of this process, we will seek assistance from our contracted Testing Services vendor to assist with this sourcing. (in any event the UAT Lead will report directly to BCF).* *Additional SMEs have been brought on board to prioritize the completion and validation of use cases and business process flows. An additional Business Analyst will be assigned. Next steps will be to use these resources to develop UAT test cases and UAT success criteria.* *The Testing vendor will be consulted to put in place contingency plans for the acceleration of testing.*

	#	Best Practice	Findings	Implications / Risks	Recommendation
			Program and Project Management Framework		
2013	8	Vendor selection follows a rigorous evaluation and selection process.	A rigorous and comprehensive process is in place and has been followed for vendor selection.	None.	
2015 Findings ⬇				Implications / Risks	Recommendation
2015	8	The Program has made significant improvements in the contracting strategy for the next wave of Vendors, establishing contractual methods that share the risk.			

		Best Practice	Findings	Implications / Risks	Recommendation	
2013	9	Appropriate program governance framework is in place.	The program has a strong governance structure, composed of four committees with defined mandates and large cross-functional (and somewhat overlapping) membership. Committees meet monthly.	Risk: Project decisions are delayed due to long time delays between governance committees.	Streamline the current governance structure and process Transition Risk and Security committees to an advisory / implementation support role.	
2015 Findings ⬇				Implications / Risks	Recommendation	*BCF Response*
2015	9	The program governance structure has been simplified. Its operating process is well-communicated. The right structure and process has been defined, it now needs to be sped up. Refer to item 18a for details.			Refer to item 18a for recommendations.	*See 18a for response.*

	#	Best Practice	Findings	Implications / Risks	Recommendation
2013	10	A formal project management methodology is in place.	The corporation has a formal project management office and practices. Defined projects have a dedicated project manager, project charters, defined deliverables framework and regular reporting.	None	
2015 Findings ⬇				Implications / Risks	Recommendation
2015	10	No change in findings.			

	#	Best Practice	Findings	Implications / Risks	Recommendation
2013	11	The priority between project cost, schedule and scope is clearly defined.	No clear priority has been set between cost, schedule and scope. Projects are attempting to keep all three fixed, leaving quality as the only variable.	Risk: Project managers have limited options to manage unplanned events. Quality issues will ultimately result in cost and schedule overruns.	Provide clear direction to project managers on the relative priority of cost, schedule and scope.
2015 Findings ⬇				Implications / Risks	Recommendation
2015	11	The Project Managers are in alignment in terms of quality and schedule being the top priority for the program. This is strongly supported by the Program Directorship.			

		Best Practice	Findings	Implications / Risks	Recommendation
2013	12	Project managers are adequately empowered to deliver the project.	Experienced project managers are in place for the defined projects. Project managers have limited control of their own budget, contingency, resourcing strategy and realistic schedule estimates. Project managers are challenged in timely decision making and taking action to address project risks. Program has experienced high turn-over in project managers.	Risk: Project managers are unable to take the necessary and appropriate actions in a timely fashion to be successful.	Increase empowerment of project managers to deliver the project within defined governance and change control mechanisms. Recommended governance adjustments will allow streamlined decision making.
2015 Findings ⬇				Implications / Risks	Recommendation
2015	12	Project Managers report significantly improved levels of empowerment, with the ability to define their own schedules, and manage their own project budgets. Participation in the governance framework has been substantially enhanced for the Project Managers. There is clear ownership and commitment to the schedule.			

		Best Practice	Findings		Implications / Risks	Recommendation
2013	13	Formal change control practices are in place.	The program has structured processes for scope, cost and schedule changes. The project is aware of the risks / impacts of customization and has review practices to justify and minimize the number of customizations.		None	
2015 Findings ⬇				Implications / Risks	Recommendation	*BCF Response*
2015	13	The Streams are tracking their own changes, but visibility at the Program level should be improved. Jira is being used to track program and project **issues** but is not used to record project Decisions and Changes. A program Change Control register is available within MS SharePoint for recording program and project **changes and decisions**, but is not widely recognized at the working level.		Changes could be made without adequate input from other streams that may be impacted by the change, resulting in rework.	Consideration should be given to marrying these two information sources such that the resolution to logged issues (decisions and changes) is available in the same environment where issues are raised and logged. Ensure that the Stream members have the ability to review and comment on changes across the program, well prior to the change being accepted.	*BCF acknowledges these recommendations.* *We are actively considering the benefits of marrying the issue tracking tools in the same technology but at a minimum, stepping up our efforts to communicate to the program team the existence of the program change control register in SharePoint.* *Recent amendments to the change control process have engaged the Project Managers and Project teams to ensure they are central to the change evaluation process.*

		Best Practice	Findings	Implications / Risks	Recommendation
2013	14	A quality assurance function has been established and integrated into project teams.	Quality assurance practices are being defined at a corporate level. A comprehensive test strategy has been developed for the ACE Program. The QA lead position on the project is vacant. The project teams have no dedicated personnel to develop test plans and drive the quality assurance activities.	Risk: The quality strategy is not effectively implemented. Quality issues are not discovered until the end of the project resulting in project delays or failure.	Hire an experienced quality assurance lead reporting to the project executive sponsor and an adequate team of QA analysts to work directly with each project.

2015 Findings ⬇		Implications / Risks	Recommendation	BCF Response
2015	14	An experienced QA lead has been appointed, reporting directly to the executive sponsor. A QA/Testing sub-project has been created. QA activities such as requirements traceability are being performed at the project level, risks and issues are being identified and centrally logged for escalation and resolution through the program governance process. An RFP is underway for QA and Testing services. Development of User Acceptance Test plans appears to be behind schedule. Schedule slippage of BTC, CRM or Integration streams will put testing schedule at risk.	Ramp up time required for QA and Test vendor. Late development of UAT test plans and criteria could uncover business requirements and delay the completion of the BTC and CRM deliverables.	Ensure that the QA team and CEBT work closely together on UAT. Consider leveraging the QA & Test Vendor for UAT support (in addition to SIT testing). Ensure QA stream has close engagement with the BTC, CRM and Integration streams. Leverage the Program QA role to ensure rapid resolution and escalation of QA issues and defects. Develop contingency plans to accelerate testing.	*BCF agrees with the findings and recommendations.* *The QA and CEBT teams will work closely together on UAT. The Test Vendor will also be leveraged for UAT support.* *It is intended that the QA Stream will work closely with the BTC, CRM and Integration streams to ensure Quality.* *The QA/Testing Manager will ensure rapid resolution of defects and escalations of QA issues throughout testing cycles.* *The Testing vendor will be consulted to put in place contingency plans for the acceleration of testing.*

	#	Best Practice	Findings	Implications / Risks	Recommendation
2013	15	An overall integrated schedule has been created for the program and projects.	The program has an overall schedule and individual projects schedules implemented in a leading project management tool (Primavera). The program and project schedules are maintained by the project management office. The schedule for each project contains a detailed work breakdown structure (WBS) and key milestones, as well as integration points to the overall program schedule.	None	
2015 Findings ⬇				Implications / Risks	Recommendation
2015	15	The re-worked project plans have recently been integrated into the Primavera tool. The schedule is being maintained by the Program leads and with input from each project stream Project Manager. Time tracking is being implemented to enable progress tracking against plan. Integrated team updates of the schedule are being performed.			

		Best Practice	Findings	Implications / Risks	Recommendation
2013	16	The program schedule is accurate and is actively used to manage the program.	Project managers use their own project schedule tools and report updates to the master program schedule bi-monthly. The Primavera program schedules contain many gaps and inconsistencies. Current status reports are not adequate to visualize and understand the overall schedule status. The program has a large number of project and work-stream inter-dependencies. Visualizing and assessing the status of interdependencies is difficult and time-consuming.	Risks: Program interdependencies are not managed and leadership does not receive timely warning on schedule issues.	Assign accountability for program schedule accuracy on each project and work stream. Provide schedule status reporting at the program and project level, based on the master Primavera schedule. Provide a consolidated Red / Yellow / Green status report on each project schedule, with drill down to the project WBS level. Improve the tracking and consolidated reporting of program inter-dependencies.

2015 Findings ⬇			Implications / Risks	Recommendation	*BCF Response*
2015	16	The updated program schedule has recently been defined and loaded into the corporate Primavera tool. The process of integrating the stream schedules has resulted in a comprehensive overall plan that can now be used to manage the entire program and its individual streams. Overall the program schedule is still aggressive and will require effective management to meet the plan milestones. The PMs require training on how to leverage the Primavera tool. Each PM is accountable for the schedule performance of their stream Summary reporting at the Program and Project level has been defined and further reporting enhancements are planned as the program progresses. A consolidated Red / Yellow / Green status report on each project schedule with drill down to the project WBS level has not been developed as yet.	Close monitoring of schedule progress is necessary to ensure on-time delivery across the ACE Program. The Primavera tool is complicated making it difficult for PMs to leverage without significant expert support.	Develop easy to use program dashboard leveraging Primavera. Implement a specific mechanism for detailed tracking and reporting of project stream interdependencies across the entire Program. Use this to communicate the status and progress of interdependencies and related issues to the ACE Program streams. Provide continued hands-on expert support to the ACE Program and Project Managers from Corporate on the use of Primavera for the remainder of the ACE program.	*BCF agrees with the findings and recommendations.* *Primavera dashboards are being developed to identify, communicate and to highlight interdependencies and critical path tasks.* *A semi-monthly review of program schedule and milestones, with the stream project managers, has been established to discuss, communicate, track and report on project stream interdependencies across the program.* *Primavera expertise has been contracted through external agencies for initial set-up and configuration as well as to provide ongoing support and guidance.*

		Best Practice	Findings	Implications / Risks	Recommendation
2013	17	A formal risk management plan has been established.	The program has a formal risk register and strong practices of risk identification, prioritization and assignment of accountability for mitigation.	None	
2015 Findings ⬇				Implications / Risks	Recommendation
2015	17	No change in findings.			

		Best Practice	Findings	Implications / Risks	Recommendation
2013	18	Timely and effective action is taken to mitigate major program risks.	Risks remain on the risk register for extended timeframes without being mitigated, particularly those related to resourcing. Risk mitigation accountability is typically set at the senior management level.	Risk: Project cost, quality and schedule impacts from unmitigated risks.	Empower project managers to take mitigation actions. Enhance reporting of unmitigated risks.
2015 Findings ⬇				Implications / Risks	Recommendation
2015	18	Project Managers are identifying and formally tracking risks and issues within their streams and reviewing risks regularly across project streams. Project Managers have defined mitigation strategies for their identified risks.			

	#	Best Practice	Findings	Implications / Risks	Recommendation	
2013	18a	Rapid resolution of identified issues.			NOTE: This criterion was not specifically addressed in the first Program Review.	

		2015 Findings ⬇		Implications / Risks	Recommendation	*BCF Response*
2015	18a	Project and Program level issues are being tracked in the JIRA tool. While the resolution process is well defined in the project procedures, multiple critical and major issues remain open on the issue log. The time overhead required in assembling and meeting with the appropriate committees appears to be extending the issue resolution time and impacting the schedule. It is sometimes taking up to three weeks to get an issue resolved at the Program level.		Delays in issue resolution could jeopardize the overall schedule. Risk: Project cost, quality and schedule impacts from the extra time required to resolve issues.	Use the Program-Level QA role to ensure that issue resolution is being performed in a timely, rapid manner. Establish a set of SLA's and key metrics for issue resolution and monitor and report these to the Steering Committee on a monthly basis. Classify issues according to severity and cost impact and provide mechanism to delegate the resolution of lower impact issues. Establish a SWAT team comprised of key members from across the program to rapidly address lingering issues.	*BCF agrees with the findings and recommendations.* *The QA/Testing Manager has developed JIRA dashboard views that highlight and prioritize issues based on severity (as well as a calendar view) to determine timelines to resolution.* *Issue management metrics will be developed and reported to the Steering Committee on a monthly basis.* *Weekly issue review meetings at the Program level have been established to ensure appropriate prioritization and delegation of issues.* *Strategic Working Group will review escalated issues, to resolve and close those issues on a timely basis.*

	#	Best Practice	Findings	Implications / Risks	Recommendation	
2013	18b	Timely action to address stream schedule slippage.			NOTE: This criterion was not specifically addressed in the first Program Review.	

2015 Findings ⬇				Implications / Risks	Recommendation	*BCF Response*
2015	18b	The CRM stream is late and behind in business process flow definition. A formal RFP has been issued for a further assistance with the CRM system implementation. High level schedule assessment indicates this stream is on the critical path with little room for further slippage without affecting the Q3-2016 release date.		CRM stream is now in a "catch-up" situation with limited margin for error.	Ensure that the selected vendor is a strong Siebel CRM integrator and is able to provide both business and technical guidance for the next release of CRM. Ensure Vendors more fully understand the expectations and requirements to bring business knowledge of the application of CRM.	*BCF agrees with the findings and recommendations.* *BCF is in the process of finalizing the selection of a strong Siebel CRM integrator that has commensurate business knowledge. This requirement was reinforced by the issuance of an addendum to the RFP before it closed.*

	#	Best Practice	Findings	Implications / Risks	Recommendation
2013	19	Package software meets business requirements and the Vendor has the capabilities to deliver necessary customizations: Booking Ticketing & Check-in (BTC) system.	The BTC vendor has a standard product offering for eBooking and a well-established software design and development methodology. Substantial software development is required to extend the product for point-of-sale (POS) functionality. Additional effort is needed to define and then design the POS functionality. The Vendor is a small firm based in Italy. A mitigation plan is defined in the contract documents to take over development by BC Ferries if required.	Risk: POS functionality does not meet customer usability and business functional requirements. The vendor fails under the load of the program.	Carry out a thorough review of POS ticketing and check-in business requirements, leveraging other industry's experience. Co-locate key BC Ferries personnel with the Vendor (software analyst, software developer, finance/POS subject matter expert).

2015 Findings ⬇			Implications / Risks	Recommendation	BCF Response
2015	19	Key BC Ferries personnel have not been co-located with the BTC vendor. There is weekly communication, however without local BCF resources on site the cycle-time for problem identification and resolution is substantially increased.

The vendor, while skilled in BTC software development, has limited experience with POS (Fast Ticketing) and with the POS architecture that will be required by BCF (namely online and offline modes of operation). There will be continued refinement of the requirements during detailed design, necessitating timely BCF / eDea collaboration.

Implementation of these features is been planned for Release R2.0 and will start design and development in Q1-2015. | Changing requirements may result in re-work if they are not communicated to the eDea development team in a timely.

eDea interpretation of BCF requirements could be improved with earlier feedback during the development. | Identify and integrate specific BCF Business Analyst, QA and development resources with the eDea team.

Co-locate BCF resources with eDea for knowledge transfer, rapid decision making and risk mitigation and/or establish a daily interaction using videoconferencing between the eDea team and the BCF team. | *BCF agrees with the findings and recommendations. BCF has recently sent teams to work alongside the BTC Vendor and has experienced shortened cycles to resolve solution design decisions. Video conferencing is being utilized multiple times per week and has resulted in enhanced timelines and improved communication. We will continue to identify opportunities to co-locate vendor and BCF Business Analyst, QA and Development teams. Planning of reciprocal visits of the teams will continue for release 2.0, as well as multiple development sprints to ensure regular refinement of the solution during detailed design.* |

	#	Best Practice	Findings	Implications / Risks	Recommendation
2013	20	An overall integration architecture has been developed.	Program has well-developed enterprise, solution and data architectures to guide integration efforts.	None.	
2015 Findings⬇				Implications / Risks	Recommendation
2015	20	No change in findings.			

	#	Best Practice	Findings	Implications / Risks	Recommendation	
	20a	Adequate solution architecture resources are assigned to the program.			NOTE: This criterion was not specifically addressed in the first Program Review.	
2015 Findings ⬇				Implications / Risks	Recommendation	*BCF Response*
2015	20a	The Enterprise Architect team members are playing a critical role as solution architects for the program and are needed to resolve cross-stream design issues and develop the more complex integration designs. There is an increasing demand for architecture resources to support other initiative (Fare Flexibility, Payment Solution, Payroll, enterprise architecture initiatives, ...) that cannot be met with the current EA resource level. The Customer Data Model / Data Hub is a key component of the solution but has not been fully designed.	Lack of key EA resources results in project delays or inadequate cross-stream consideration.	Hire additional experienced architect resource to support increasing demand beyond the ACE program. Maintain continuity of key EA resources on the ACE program. Accelerate completion of the Customer Data Hub design.	*BCF agrees with the findings and recommendations.* *BCF is in the process of recruiting experienced Solution Architect resources to maintain continuity of key architect resources on ACE and related Programs.* *BCF has prioritized design of the customer data hub, several options have been identified.*

	#	Best Practice	Findings	Implications / Risks	Recommendation
2013	21	The level of effort and approach to integrate solution components has been adequately addressed.	The integration design and development work is the largest and most complex aspect of the ACE Program and will use technologies and methods new to the IT department. BC Ferries is using internal resources to carry out the integration work. This work is currently under-resourced for the task and has limited visibility in terms of accountability, management reporting and dependency management.	Risk: High risk to program schedule. Large learning curve to develop the methods, standards and competencies.	Charter and establish a formal project structure for data and systems integration, under the leadership of an experienced software delivery project manager. Supplement the current in-house team with experienced design and development resources skilled in the new technologies and methods.

2015 Findings ⬇		Implications / Risks	Recommendation	*BCF Response*
2015	**21** A formal ACE program sub-project has been chartered and established for the data and systems integration. An RFP is currently underway for a 3rd party Vendor to develop the integrations. At times, the integration team is not being involved in key technical decisions from other streams until the "last minute", where there is insufficient time to carefully scrutinize and influence a decision. Solution design documents being provided by other streams do not always indicate the person authoring the document, making it difficult for members of the integration team to follow up with questions and concerns. Technical decisions have been made by individual project streams without direct input of the integration team, raising concern of substantial re-work on the part of the integration team. The senior integration lead has transitioned to another project.	Late involvement of the integration specialists could result in delays due to rework of integration deliverables. Unexpected loss of the critical DBA resource could lead to schedule delays.	Provide a dedicated integration business / technical lead analyst to work across project streams. Ensure that the integration technical analyst is in the loop with decisions being made by the other streams such as BTC and CRM. Ensure that integration is considered in project stream design decisions. An additional DBA resource is required to balance the workload on the Integration stream. Add quality assurance of the integration deliverables against the architecture into the scope of the QA stream.	*BCF agrees with the findings and recommendations.* *A dedicated business/technical lead is being added to the program to focus on integration across stream.* *More formal discussions have been brokered to ensure integration is factored into all relevant conversations with other project streams.* *An additional DBA resource has been added to balance the workload and provide backup capacity.* *The QA Review board process, which is the responsibility of the QA stream, will include the QA of integration deliverables against the architecture with applicable signoffs.*

	#	Best Practice	Findings	Implications / Risks	Recommendation
2013	**22**	Adequate network and hardware infrastructure underlying the proposed solution has been established based on business requirements.	The ACE Program requires a complex technical environment. No formal project management framework exists for this work. Delivery is being carried out by part-time operational resources, with no dedicated project staff. Delivery of the technical environment is behind schedule.	Risk: High risk to program schedule. Adequate resources are not available to design, provision, and support the project technical environment.	Charter and establish a formal project structure for infrastructure. Supplement the current part-time staff with dedicated resources including a technical architect, database analyst, server /platform analyst and change coordinator.
2015 Findings⬇				Implications / Risks	Recommendation
2015	22	A formal infrastructure stream has been chartered and established as sub-project to the ACE program. The infrastructure project stream has a well-defined infrastructure architecture, capacity planning, and implementation process in place. Operational resources are being utilized to implement ACE program infrastructure components as a way of ensuring knowledge transfer to the operations team. Risks and issues at the infrastructure level are being identified and mitigation strategies have been developed for each one.		

	#	Best Practice	Findings	Implications / Risks	Recommendation	
2013	23	Team members have a shared sense of confidence and accountability for delivery. Teams are effectively engaged within and across projects through collaboration and two-way communication.	Concerns at the delivery staff level are not always heard. Management decisions and directions are not always understood at the team level. Team building efforts are missing.	Risk: High staff turnover and / or low productivity.	Enhance open communication channels across all levels of the program. Invest in regular team building activities.	
2015 Findings ⬇				Implications / Risks	Recommendation	*BCF Response*
2015	23	Team commitment to success and confidence in their leadership and program structure is evident. The program has regular stand-up meetings. Team collaboration is evident. Project managers are well engaged across projects. SMEs and specialists are requesting additional communication with their peers across the ACE projects.		Without communication at the SME and specialist level, there is a risk that implications of decisions made by each stream are not well understood across the program, resulting in re-work and schedule delays.	Focus team stand-up meetings on actual progress, decisions, and issues. In the program stand-up meetings, in addition to reports by the PMs, select other team members to give an update on what they are working on, the issues they face, and their proposed resolutions.	*BCF agrees with the findings and recommendations.* *Team and Program stand-up meetings have been refocused on progress, decisions and issues.* *Project team members are being invited to give updates on progress, issues and potential resolutions.*

	#	Best Practice	Findings	Implications / Risks	Recommendation
		Organizational Change Management			
2013	24	Required changes to business operations have been clearly defined in a future state business model.	The program has obtained input from customers on desired changes and has completed a conceptual design of the future customer experience. Extensive business requirements to support new business operations have been defined. Some business requirements have been defined at a rather high level. The future business process, roles and accountabilities, at an operational level, have not yet been defined.	Potential gaps between identified business requirements and the future operating needs.	Hire an experienced business analyst (BA) lead to support the existing BAs. Develop business and system use cases and process models at a level meaningful for operations. Validate CRM system business requirements against these use cases.
2015 Findings ⬇				Implications / Risks	Recommendation
2015	24	The CEBT sub-project has been staffed with experienced Business Analysts and a detailed change management charter established. The full definition of use cases and business flows for eBooking and CRM have not been completed. (see Item 7 above).			See item 7 for recommendations.

	#	Best Practice	Findings	Implications / Risks	Recommendation
2013	25	Training requirements have been identified and training plans developed.	The program is developing comprehensive training plans to support project implementation.	None.	
2015 Findings ⬇				Implications / Risks	Recommendation
2015	25	The training project charter details the specific training requirements by release and by location. Training material development is scheduled to start in Q4 2015.			

	#	Best Practice	Findings	Implications / Risks	Recommendation	
2013	26	A benefits realization plan with measurements and accountabilities for each benefit stream has been established.	A benefits realization plan has not been developed.	Implications: Benefits are maximized when actively managed post implementation.	Establish a formal benefits realization plan and baseline current performance.	
2015 Findings ⬇				Implications / Risks	Recommendation	*BCF Response*
2015	26	The formal benefits realization plan and benefits register has been initiated but not completed.		The opportunity for gathering of baseline metrics and identification of additional benefits could be missed.	Establish and communicate baseline measurements for wait times, loading times and stand-by ships at terminals before roll-out of ACE deliverables.	*BCF agrees with the findings and recommendations.* *A number of metrics exist in the organization; we are in the process of pulling these metrics into a coordinated document to assist with addressing this recommendation.*

	#	Best Practice	Findings	Implications / Risks	Recommendation	
	27	Inter-program governance and coordination.			NOTE: This criterion was not specifically addressed in the first Program Review.	
2015 Findings⬇				Implications / Risks	Recommendation	*BCF Response*
2015	27	There are critical dependencies in terms of schedule, scope, functionality and technical design between the ACE Program, the Fare Flexibility/Digital Experience Program and the Payment Service Project. Some work has been carried out to identify the schedule alignment between these programs. Development of an approach to govern program interdependencies is under way but has not yet been implemented. A senior communication and change management resource is supporting the development of effective internal and external communications and is looking across programs to ensure consistent and appropriate messaging.	Schedule and scope changes in one program can affect cost, schedule and plans in another program. Mismatch in dependent functionality and technical designs can drive rework and costs.	Define specific dependency items between programs. Establish a "light" governance mechanism to regularly review program to program inter-dependencies. Implement formal hand-off and acceptance of significant decision and changes that affect inter-dependent programs or projects. Create a regular forum for project managers and SMEs to discuss inter-program issues and shared concerns. Establish ad-hoc teams to work inter-dependent program issues.	*BCF agrees with the findings and recommendations.* *A portfolio log will be created to document inter-program dependencies to ensure appropriate visibility, to facilitate timely decision making and rapid resolution of any issues.* *A formal portfolio governance structure has been developed to ensure a regular forum exists for project managers and SMEs to discuss cross program issues and concerns on both a regular and ad-hoc basis.*

Recommendations for On-going Monitoring

The recommendations contained in this report are designed to provide BC Ferries management with the structures, tools and practices to improve their internal program delivery and risk management practices on the ACE Program.

In addition, we recommend regular external third party checkpoint reviews of the program including:

Timeframe	Review focus
Q4, 2015	• An overall ACE Program risk review and confirmation that adequate governance is in place to ensure alignment between ACE, Fare Flexibility and PCI Payment Services programs.
Q4, 2016	• A go-live readiness review of Release 1.1
Q4, 2017	• A go-live readiness review of Release 2.0