

CSC
Project Management Services
A partnership

CORPORATE PROFILE



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Why Conduct A Risk Analysis On Your Project?

- *Document the Project planning assumptions and communicate them clearly to all stakeholders.*
- *Identify opportunities to improve Project and shareholder value.*
- *Identify and rank ALL sources of Project opportunity and risk.*
- *Develop and test contingency plans to ensure Project success.*
- *Focus Project team effort on managing the REAL Project drivers.*
- *Provide an independent, third-party view of the Project.*
- *Understand the total, over-life Project potential.*

Why CSC Project Management Services?

- *Leading Canadian risk management company for over 20 years, with wide international experience.*
- *Proven, professional team.*
- *Experienced in hands-on project management of small to mega-projects.*
- *Proven track record in improving a wide variety of Projects.*
- *Provide project specific models and fit-for-purpose results.*
- *Understand the information required to improve the quality of decisions and evaluate strategic alternatives.*

BACKGROUND

CSC was established in 1982 as an independent consulting firm providing project management services to industry and government. CSC is based in Calgary, Alberta and has clients throughout Canada, the United States, Australia and South America.

The CSC team has extensive and unique project experience which allows CSC to evaluate a wide variety of projects. A CSC specialty is facilitation assistance to organizations in the identification, quantification and mitigation of project risks.

CSC has developed particular expertise in applying a structured approach to strategic decision making and project risk analysis. This process, known as Risk and Decision Analysis, has enabled clients to adopt a proactive approach to project risk assessment and mitigation. The rigour and structure of the facilitated process, in addition to the insights provided by the analysis, have proven this to be a successful approach to improving the quality of strategic decision making.

SERVICES

Strategic Decision Making

CSC helps clients evaluate key strategic decisions, which must be made in an environment of uncertainty. The use of the Risk & Decision Analysis process is a key ingredient in bringing structure and rigour to decision making. CSC, acting as an independent third party, minimizes in-house biases while incorporating the client's collective knowledge and experience in the analysis. CSC also ensures that the level of detail is appropriate to the question at hand while using an approach that does not overlook or understate key risks or opportunities.

This process has been used successfully on a range of decisions from high level corporate strategic decisions to tactical project decisions.

Project Risk Analysis

Risk and Decision Analysis is used to assist project teams in assessing risk on their project. It identifies areas that have the highest potential impact on overall project value, including cost and schedule. This focuses the team on strategies that capture potential opportunities and mitigate the most significant risks.

CSC has found that such an approach brings a level of insight to projects that would not be apparent using more traditional methods. This allows for effective, proactive planning to reduce the impact of risks and maximize project value. CSC can also assist the project team to develop their ongoing risk management plan.

Project Management Education

CSC can provide in-house seminars on Risk & Decision Analysis to train personnel in the fundamentals of risk analysis and strategic decision making. There is a full range of educational opportunities from workshops on Risk Awareness to PMI based Project Management Training.

CSC's workshops are developed to provide organizations with the opportunity to learn the background behind the Project Management and Project Control principles necessary to ensure successful application of Project Management procedures.

Project Management Assistance

CSC can provide clients with the benefit of its experience and expertise in project management and project auditing by offering a number of specific services, including:

- independent review or development of project cost & schedule estimates
- independent review of the project management and control plan
- on-going project controls assistance
- on-going project performance review & audit
- assistance with initial project budget and control plan preparation

For specific project applications CSC can provide this expertise through dedicated on-site assistance on a part-time basis to ensure project controls are established and maintained throughout the project life.

KEY PERSONNEL

Stan Wilson P.Eng. PMP

Citizenship – Canadian

B.Sc. Civil Engineering, University of Alberta, 1962

Stan Wilson is the founder and a Senior Partner for CSC Project Management Services, with over 35 years experience in the management of consulting engineering, heavy civil engineering, and pipeline construction at both project and corporate levels. This experience has allowed him to emerge as one of Canada's leaders in the application of Risk and Decision Analysis techniques for strategic planning.

Stan was vice president, Project Services, for the Alaska Highway Gas Pipeline project and was responsible for all planning and control activities for this major energy transportation project. Prior to this Stan was a Regional Manager for Foundation Company of Canada, with involvement in major construction projects from Churchill Falls, Labrador to Vancouver, British Columbia.

Dave Evans Ph.D. P.Geol.

Citizenship – Canadian and British

Ph.D. Science & Technology, Imperial College, London, 1972

Dave Evans is a Senior Partner for CSC. He has over 30 years domestic and international experience in mining, petroleum, pipelines and environmental practice. His expertise is in strategic management, risk analysis and management, regulatory and environmental management, with extensive arbitration and facilitation experience.

As a Senior Consultant with an engineering and environmental consulting firm, Dave has conducted environmental risk assessments on a number of projects ranging from flooding impact studies to operational risk evaluations to decommissioning of plants.

Chris Coulthard B.A.

Citizenship – Canadian

B.A. (Honours) Computing & Information Sciences, University of Guelph, 1986

Chris Coulthard is a Senior Partner with CSC. He has over 20 years experience in project planning and management in both Civil and Information Technology projects. His focus is in the application of risk analysis modeling techniques for large-scale capital projects and the implementation of project management, cost control and cost estimating systems in a corporate economic environment.

Before joining CSC, Chris was a project leader at Canadian Pacific Ltd. where he developed artificial intelligence applications.

Ian Henderson M.Sc. P.Eng. SPE
Citizenship – Canadian and British
M.Sc. Civil Engineering, University of Manitoba, 1972

Ian Henderson is a Senior Partner for CSC. He has over 30 years experience with a broad range of development, operations and strategic management in the oil and gas industry. His expertise is in petroleum management, with emphasis on bottom line improvements.

Prior to joining CSC, Ian was a senior advisor in the Resources department of Shell Canada Limited, focusing on new business developments. His career with Shell included petroleum management in the Middle East, management of heavy oil operations and development for the Peace River Oil Sands, and extensive technical work in petroleum engineering.

Roger Brundrit M.Sc. P. Geo.
Citizenship – Canadian and British
M.Sc. Nuclear Physics, University of Manitoba, 1972

Roger Brundrit is a Senior Consultant for CSC. He has over 30 years experience in the oil and gas sector with a successful background in oil and gas exploration. He has proven the ability to develop and manage new business units while creating and implementing economic strategies.

Before joining CSC, Roger was a private Oil and Gas Consultant and Director of a private technology company. Prior to that he was Vice President of Exploration & Production for Shell Canada Limited and served four years as Head Strategist Upstream for Royal Dutch Shell in The Hague, with responsibility for developing world-wide strategy and responsibility for acquisitions and divestments.

Bev Ostermann M.Sc. P.Eng.
Citizenship – Canadian
M.Sc. Construction Management, Stanford University, California, 1964

Bev Ostermann is a Senior Consultant for CSC. He has over 35 years of experience in the areas of cost estimating, cost and schedule control, project engineering, systems development in engineering disciplines, and senior corporate management functions. Bev has prepared numerous construction contract claims for heavy engineering and construction projects, acting for both owners and contractors, and also has extensive experience in Risk Analysis for project planning.

He previously held the position of Vice President Engineering for the Loram Group, a major Canadian contracting organization, specializing in heavy engineering, large diameter pipelines and railroad construction in support of major civil projects such as Churchill Falls, Duncan Lake Dam and others.

Phillip Jones

Citizenship – Canadian
B.A. Economics, University of Calgary, 1996

Phillip Jones is an Analyst for CSC. Phillip has a background in economics and has extensive experience with CSC developing Monte Carlo risk models for a variety of projects including oil and gas processing plants, pipelines and mining projects. Phillip has also been involved in developing detailed risk analyses on aspects including reservoir characterization, production profiles, capital and operating costs, and market share assessment and market development planning.



EXPERIENCE

Summary of Projects:

While many of our current projects are in early planning or are not yet announced, the following is a brief summary of recent relevant projects in the public domain:

2005 – City of Winnipeg – Waste Water Treatment Projects

CSC is in the process of conducting cost and schedule risk analysis for three projects at existing City of Winnipeg waste water facilities. The City has incorporated risk management as a requirement for all major projects.

2003 - 2004 – Terasen Pipelines Inc. – Express Expansion Project

CSC completed two stages of risk analysis on this project to expand the Express pipeline with a series of pump station expansions in Canada and the United States. The project was successfully completed below budget and ahead of schedule.

2001 - 2002 – True North Energy – Fort Hills Project

CSC completed a preliminary risk analysis on the proposed oil sands mining project evaluating technology options, then proceeding to complete an initial assessment of project cost and schedule. The analysis was updated in 2002 and used to develop specific project strategies.

2001 – Terasen Pipelines Inc. – Corridor Pipeline Project

CSC completed an initial risk analysis on this major pipeline project connecting the Muskeg River Mine to the Scotford Refinery in Edmonton. The risk analysis was updated in 2001 to ensure the project achieved completion on time and under budget.

2001 -- Suncor Energy Inc. – Firebag Oil Sands SAGD Project

CSC updated the risk and decision analysis originally conducted in 1999 at completion of the engineering design to ensure that the project plan was on track.

2001 – Trican Partnership – Well Servicing Risk Analysis

CSC completed a risk assessment and analysis on a new technique for zone isolations in well bores in order to demonstrate to regulatory authorities that the process did not pose an undue risk of well failure.

2001 – Pan Canadian Petroleum – Great Plains

CSC undertook a project to determine an optimal development plan for a shallow, tight-gas reservoir. Risks modeled included well performance, drilling schedule, and surface development encroachments.

2001 – Husky Energy Limited – Thermal Heavy Oil Development

CSC conducted an initial risk analysis for an in-situ Heavy Oil development.

2001 – Syncrude Canada Limited – UE-1 Expansion Project

CSC completed an update of the risk assessment on an expansion of the Oil Sands facilities in Fort McMurray. The analysis included review of the updated project cost estimate.

2000-1995 Sable Offshore Energy Project

CSC completed a detailed risk analysis of reservoir characteristics, gas production, capital and operating costs, market development and market share for a major offshore gas development, which included approximately 250 kilometers of offshore pipelines. The analysis continued as the project evolved, with reports at eight major milestones in the project life cycle.

2000 – Westcoast Energy – Vancouver Island Pipeline

CSC conducted a deterministic operational risk assessment on the pipeline system delivery capacity under cold weather conditions.

2000 – Noranda Inc. – Lady Loretta Mine Evaluation

CSC completed a risk assessment and analysis on a proposed copper mine in Australia, considering regulatory, environmental, capital and operating cost, production, and marketing issues.

2000 – Cabre Exploration Ltd. – Miscible Flood Evaluation

CSC reviewed a proposed tertiary recovery miscible flood project for an existing oilfield in Western Canada. The study evaluated technical and economic risk for the proposed project.

2000 –NOVA Chemicals Ltd. – SCLAIR Project Evaluation

CSC reviewed an ongoing construction project, which was undergoing schedule and cost overruns, to determine causes and potential for future reductions. Using the risk analysis process a series of mitigation actions were identified for project team implementation.

1999 – ATCO Pipelines Limited – Muskeg River Gas Supply Pipeline

CSC conducted a risk assessment and analysis on a 115 kilometer natural gas pipeline project connecting a new oil sands mine to a natural gas supply.

1999 – British Columbia Gas – Southern Crossing

CSC conducted a risk assessment and analysis on a proposed natural gas pipeline in the southern Canadian Rocky Mountains. CSC evaluated project risks and advised on strategic planning of the project.

1999 – ATCO Power Limited – Muskeg River Cogeneration Project

CSC conducted a risk assessment and analysis on a Cogeneration project to supply electrical power and live steam for an oil sands mining project.

1999 – Alberta Energy Company – Gas Storage Risk Assessment

CSC conducted a risk assessment and analysis on a major underground natural gas storage facility. The project assessed the potential for an Effective Failure Event (EFE) in an over-pressured underground reservoir, and implemented a mitigation plan for testing and reducing the risks identified.

1999 Shell Canada Limited – Athabasca Oil Sands Project

CSC coordinated a Risk & Decision Analysis for this major new oil sands development, that includes a mine, Cogeneration project located 450 kilometers from a major centre, the product and supply pipelines, and the upgrader project at the existing refinery. The project involved combining the risk assessments provided by the individual projects into an overall Risk Analysis which was intended to be used to develop project mitigation planning.

1999 – Esso Canada Limited – Norman Wells Refinery Decommissioning

CSC conducted an environmental risk assessment for the decommissioning of a major oil refinery in northern Canada.

1998 Shell Chemicals Ltd. – MEG Chemical Project

CSC completed a comprehensive Risk & Decision Analysis on this project, which was an addition to the existing Scotford Styrene Plant in Edmonton, Alberta. The review identified potential schedule problems that the project team mitigated.

1998 PanCanadian International Portfolio Management.

CSC developed a portfolio management system for PanCanadian International to assist them in their decisions about acquisitions, exploration, and asset purchases in different countries worldwide. The full cycle economic model included provision for risk assessments of reserves, reservoir performance, cost and scheduling of the field development, and the fiscal terms for each country. In addition it provided screening tools for evaluating both onshore and offshore property development.

1998 Suncor Millennium Oil Sands Mine.

CSC completed a comprehensive Risk & Decision Analysis which was used to develop the incentive formula for sharing risk rewards with the Alliance team. Developing a shared understanding of the risks and opportunities among the nine company Alliance team and the project owners was a significant challenge.

1997 Alberta Pipeline Project

CSC completed risk assessment and analysis on the preliminary engineering estimates and project economics as well as the predicted gas volumes, for a new primary gas transmission project.

1995 PanCanadian – Hayter SAGD Development.

CSC completed an analysis of a proposed Steam Assisted Gravity Drainage project which resulted in a decision not to proceed.

1995 PanCanadian - Cohasset Panuke Offshore Oil Development.

CSC completed a comprehensive risk and decision analysis which resulted in a re-configuration of facilities to add significant value to the project.

1993 Syncrude – Long Term Bitumen Supply Study

CSC completed an analysis of long term development options including extensive evaluations of in-situ recovery projects such as Steam Soaks and Steam Assisted Gravity Drainage, utilizing AOSTRA Underground Test Facility data.

1992 EcoPetrol, Columbia

CSC facilitated risk analysis workshops for the planning of the automation project (SCADA) of the gathering and distribution pipelines for EcoPetrol.

1987 - 2002 Syncrude Capital Projects

CSC has facilitated the risk and decision analysis for each major expansion of Syncrude's oil sands facilities, and has been involved in all major capital projects.

1993 Billiton Maatschappij Surinam Lelydorp III Expansion

CSC conducted a full Risk and Decision Analysis for this bauxite producer on a proposed expansion to their existing mine located in Surinam, South America.

1991 Griffin Coal Company, Muja Open Pit

CSC assisted this Australian coal supplier in the development of alternative mine plans to determine if more efficient utilization of mining resources was possible. A three year operating cost estimate was also prepared to assist in the budgeting process.

1987 - 1990 Saskatchewan Water Corp. - Lake Diefenbaker Irrigation Project

CSC consulted on the development of irrigation facilities at Diefenbaker Lake in Saskatchewan, assisting in both technical and contractual reviews on the \$200 million development. CSC's staff on site assumed the lead project management role.

1985 – Present - Construction Cost Estimates and Schedules

CSC has produced numerous construction cost estimates and construction schedules on a variety of major projects, both for contractor and owner groups. Some of these include the Prince Edward Island Crossing, Oldman River Dam, Suncor Dump Pocket, Iskut River Power Development, Saskwater Irrigation Developments, Boston Central Artery, and Chesapeake Bay Bridge.

1983 - National Energy Board and Energy Mines and Resources

As a member of a Task Force, CSC studied cost controls for pipeline construction, the impact of new technology on pipeline costs and regulations, and the development and implementation of a system to monitor pipeline construction cost performance.

1983 – Present - Contract Claims

CSC has acted on behalf of numerous owners and contractors to prepare and defend contract claims on a variety of civil projects, and to appear as expert witnesses in legal actions related to completed projects.

Risk Analysis and Project Management Training:

Risk Register for Mining Projects Workshop – Mineral Economics and Management Society (MEMS)

HSE Management Workshops – various oil & gas companies in Malaysia, Venezuela, Peru and Canada

Petro-Canada International Management Services

Alberta Government Telephones (Telus)

Alberta Energy Company - Pipeline Division

CLIENTS

The following is a partial list of clients that CSC has worked with in various capacities:

Alberta Environmental Protection
Alberta Pipeline Project
Alberta Telecom International
Apache Petroleum
ATCO (ATCO Power Ltd., ATCO Pipelines Ltd.)
British Columbia Gas
British Columbia Transit
Billiton Maatschappij Surinam-Shell - (S. America)
Cabre Exploration Ltd.
Chief Construction Ltd.
City of Calgary
City of Lethbridge
City of Winnipeg
Colt Engineering
ConocoPhillips Canada Resources Corp.
EcoPetrol - Columbia
ENCANA Petroleum (Alberta Energy Co., Pan Canadian Petroleum)
Griffin Coal Company (Australia)
Husky Energy

Imperial Oil Ltd. (Esso Resources)
Mobil Canada
Nakamun Financial Services
National Energy Board (NEB)
Nexen Canada Ltd.
Noranda Inc.
NOVA Chemicals Ltd.
Petro-Canada
Sable Offshore Energy
Saskatchewan Water Corporation
Shell Canada Ltd.
Shell Chemicals Ltd.
Suncor Energy Inc.
Syncrude Canada Ltd.
Telus Corp (Alberta Government Telephones)
Terasen Pipelines Inc. (Trans Mountain Pipelines Ltd.)
Tilbury Cement Ltd.
Town of Canmore
True North Energy
Western Oil Sands Inc.
YFPB – Bolivian National Oil Company

