

# **A STRATEGIC ANALYSIS OF SNC LAVALIN ATP**

by

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## **ABSTRACT**

This paper presents a strategic analysis of SNC Lavalin ATP, a business unit of SNC Lavalin Group operating in the power transmission industry in Alberta. It analyses the attractiveness of the business environment, determines ATP's competitive position in the industry, develops and assesses strategies for company's growth, and recommends the implementation of the most feasible alternative.

The industry analysis introduces the new concept of key success factors strategic congruence. This emphasizes the need for alignment between the key success factors pertaining to the firm, industry, and client industry, ensuring that the ultimate customer is considered when ranking ATP's key success factors.

The internal analysis is performed using the Diamond-E model. Management preferences have a profound impact and two proposals fail because they do not satisfy these requirements.

The recommendation section proposes the execution of successful alternative, based on a detailed implementation plan presenting the timelines, division of responsibilities and costs.

**Keywords:** Alberta; Power transmission; ATP.

## **DEDICATION**

I lovingly dedicate this thesis to my wife and my son who both supported me each step of the way while showing gargantuan patience.

## **ACKNOWLEDGEMENTS**

I would like to express my sincere gratitude and respect to Neil Abramson for his guidance, candid feedback, and patience during the writing of this paper.

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## **GLOSSARY**

<b>AESO</b>	Acronym for “Alberta Electric System Operator”
<b>AltaLink</b>	The largest power Transmission Facility Owner in Alberta
<b>ATP</b>	Acronym for “Alberta Transmission Projects”
<b>AUC</b>	Acronym for “Alberta Utilities Commission”
<b>AFE</b>	Acronym for “Authorization For Expenditure”
<b>AML</b>	Acronym for “AltaLink Management Ltd.”, the management entity of AltaLink
<b>ATCO Electric</b>	The second largest power Transmission Facility Owner in Alberta
<b>Brownfield project</b>	Is a development of an existing facility that requires upgrades, expansions, reconfigurations, etc., in order to satisfy the growing needs or comply with more stringent standards, norms and regulations
<b>BU</b>	Acronym for “Business Unit”
<b>CTI</b>	Acronym for Critical Transmission Infrastructure, projects essential to meet Albertans’ energy needs now and in the future.
<b>ENMAX</b>	ENMAX Corporation is a utility headquartered in Calgary, with core operations including electricity generation, transmission and distribution and the sale of electricity.
<b>EPCM</b>	Acronym for “Engineering Procurement and Construction Management”
<b>EPCOR</b>	EPCOR Utilities Inc. is a utility company based in Edmonton, which distributes electricity within the City of Edmonton.
<b>EUC</b>	Acronym for “Electricity and Utility Board”

<b>FA</b>	Acronym for “Facility Application”
<b>GWh</b>	Acronym for “Gigawatt hour”
<b>Greenfield project</b>	Is a brand new facility, located in an area where no other construction has been previously built
<b>HEEA</b>	Acronym for “Hydro and Electric Energy Act”
<b>HSE</b>	Acronym for “Health, Safety and Environment”
<b>MW</b>	Acronym for “Megawatt”. A megawatt is a unit for measuring power that is equivalent to one million watts. It is used to measure the installed generation capacity of a power plant.
<b>NID</b>	Acronym for “Needs Identification Document”
<b>OAS</b>	Acronym for “Objective, Advantage, Scope”
<b>P&amp;L</b>	Acronym for “Permit and License”
<b>TFO</b>	Acronym for “Transmission Facility Owner”
<b>T&amp;D</b>	Acronym for “Transmission and Distribution”

# **1: OVERVIEW**

This project presents the business environment presently encountered at SNC-Lavalin Alberta Transmission Projects (ATP), a business unit (BU) of SNC Lavalin Inc. SNC Lavalin Inc. is the largest Canadian engineering firm, publicly traded on the Toronto Stock Exchange. The business unit ATP is located in Calgary, Alberta and is specialized in engineering, procurement and construction management (EPCM) of electric power transmission and distribution facilities. The EPCM is an upstream segment of the power transmission and distribution industry. ATP provides EPCM services to Transmission Facility Owners (TFO), which are usually power utilities and crown corporations.

The purpose of this paper is to assess ATP's current performance, identify its key success factors and weaknesses, determine and assess strategic initiatives meant to bridge the current gaps and improve company competitiveness and performance. It also includes a detailed implementation plan for the most viable strategic options found in the assessment process using the Diamond E-framework.

The scope of the project encompasses EPCM segment of power transmission and distribution industry, underlining the concern of the company's future ability to successfully perform in the new competitive environment in Alberta. Although ATP operates in Alberta, British Columbia and Saskatchewan, the focus of this paper will be company performance in the Albertan market, which generates approximately 80% of

ATP's revenues. It is anticipated this market will offer major growth and expansion opportunities over the next 10 years. In parallel with the expected growth, a change is also anticipated in the competitive environment. The expiration in May 2012 of the exclusivity agreement between ATP and AltaLink, the most important power utility in Alberta, and the perspective of competing on tender for future projects with AltaLink is a source of growing concern for ATP. The management is looking forward to maintaining the company's position of industry leader in the presence of increased competition and in the context of the company's limited experience to compete on tender and limitation of qualified workforce.

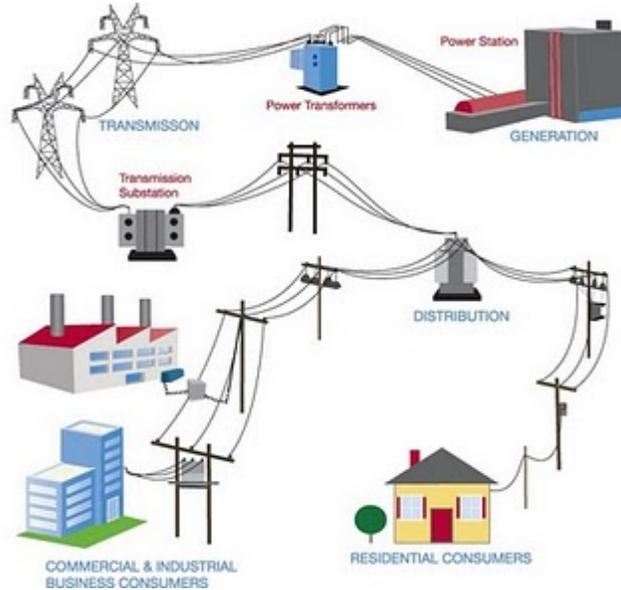
## **1.1 Industry overview**

### **1.1.1 Electric power generation, transmission and distribution**

Electricity is usually produced in remote areas at generating stations that use a variety of fuels or energy sources. The transmission lines carry electricity from the power stations over hundreds of kilometres to transformer substations, located in the proximity of major industrial or commercial consumers. At substations, the voltage is stepped-down and the distribution companies transfer the electricity from the transmission grid to the end industrial, commercial, and residential users.

The process is represented in graphical format in Figure 1 and described in detail in Appendix A.

Figure 1 - Electricity Value Chain<sup>1</sup>



### 1.1.2 Power transmission and distribution industry - size and growth

The transmission system is the electrical equivalent of a highway system. Transmission is the “backbone” of the entire electric system and the transmission infrastructure is generally required to be in place or construction well advanced prior to the development of new power generation plants. In Alberta, the Alberta Utilities Commission (AUC) regulates transmissions, unlike power generation and distribution that operate based on market supply and demand.

The AUC is responsible for making decisions about substations and transmission lines. This includes whether they are needed, where they will go, and how the costs are passed on to consumers. The AUC retains the services of the Alberta Electric System Operator (AESO), a not-for-profit organization and independent from the electricity industry and the Government of Alberta, to prepare long-term transmission system plans.

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<sup>1</sup> Retrieved on July 31, 2010 from <http://sdm-blog.mit.edu/2010/03/sdm-best-thesis-prize-awarded-for-grid.html>

The power lines that deliver electricity to consumers are owned, built and maintained by investor-owned companies known as Transmission Facility Owners (TFO). The AESO determines the need for transmission projects and directs a TFO to apply for approval to construct and operate transmission facilities. The TFOs notify and consult the stakeholders to determine the lowest overall impact route for a transmission line.

After the public consultation is complete, the TFO submits a Facility Application to the AUC to build the new facilities, describing the transmission line route, environmental considerations, cost and schedule, and public consultation program. Upon receipt of TFO's application, the AUC conducts public hearings to review the need for these projects and also analyse the expected project cost. If the AUC approves the project, they then grant construction authorization, and ratepayers, through electricity bills, will pay the cost of the transmission project. Transmission rates are regulated by the AUC and eventually are charged to the final consumers.

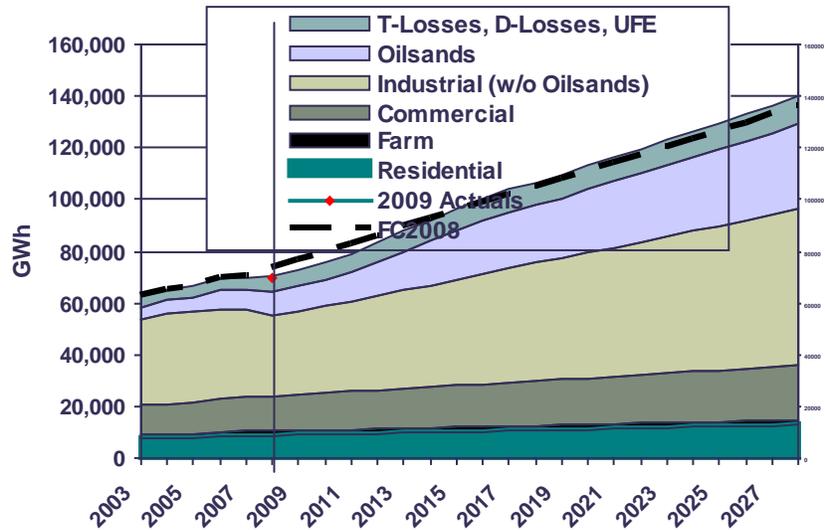
Demand for electricity in Alberta has increased substantially with the growth of industry, population and business. Compared to other provinces, growth in demand in Alberta is the highest in Canada. "From 2001 to 2008, Albertans' demand for power increased by 3.3% per year on average"<sup>2</sup> and the same trend continued in 2009 and 2010. In the long term, the Alberta Electric System Operator (AESO) anticipates an even higher growth rate, with energy demand in the next 20 years forecasted to increase by

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<sup>2</sup> Government of Alberta, Electricity in Alberta (n.d.) Retrieved on March 21, 2011 from <http://www.energy.alberta.ca/Electricity/1586.asp>

approximately 100%. Figure 2 below shows the anticipated growth in demand per sector.

Figure 2 - 2009 Sector Totals – source AESO



Alberta’s transmission system has not been significantly upgraded in more than two decades. No major new transmission lines have been built since the 1980s. The Provincial Energy Strategy identifies several key actions including planning for a comprehensive upgrade to the transmission system with access to renewable or low-emission electricity.

The AESO has identified critical transmission infrastructure projects needed for Albertans as described by the Provincial Energy Strategy. Its long-term Transmission System Plan considers that several critical transmission infrastructure projects are needed between 2010 and 2020 to meet current and future electricity demand. The projects identified in the Long-term Transmission System Plan and filed with the Alberta Utilities Commission are currently estimated at \$14.5 billion. Five Critical Transmission Infrastructure (CTI) projects are highlighted in the Plan and have been classified by the

AESO as “CTI-Tier 1”. The cost of CTI-Tier 1 projects is estimated to cost \$8.1 billion. These projects are aligned with the Provincial Energy Strategy, which includes building critical transmission infrastructure to attract business investments that rely upon electricity. The Long-term Transmission System Plan also includes additional critical transmission infrastructure (CTI-Tier 2) projects, with a current estimated cost of \$6.4 billion that include system upgrades and regional projects.

In addition to the projects considered in the Long-term Transmission System Plan, AESO is considering future intertie transmission line projects that will improve Alberta’s interconnections with neighbouring provinces and states. These projects will enable imports of power when required and exports of surpluses, providing flexibility that supports and encourages market development in Alberta. The complexity and incremental development of these additional transmission facilities is under evaluation, and their value is estimated to be in the range of \$5.0 to \$8.0 billion.

### **1.1.3 Transmission Facility Owners in Alberta**

The power lines that deliver electricity to consumers are owned, built and maintained by Transmission Facility Owners (TFO). Currently, there are a couple of TFOs operating in Alberta. Few of them are utilities, but there are private developers who own merchant power lines.

The utilities are geographically defined:

- AltaLink – the largest utility, develops, operates and maintains the transmission facilities south of Edmonton down to the American border
- ATCO Electric - the second TFO, operates from Edmonton area to Fort McMurray and further north up to the provincial boundary

- EPCOR – a utility in Edmonton area
- ENMAX – another utility in Calgary area

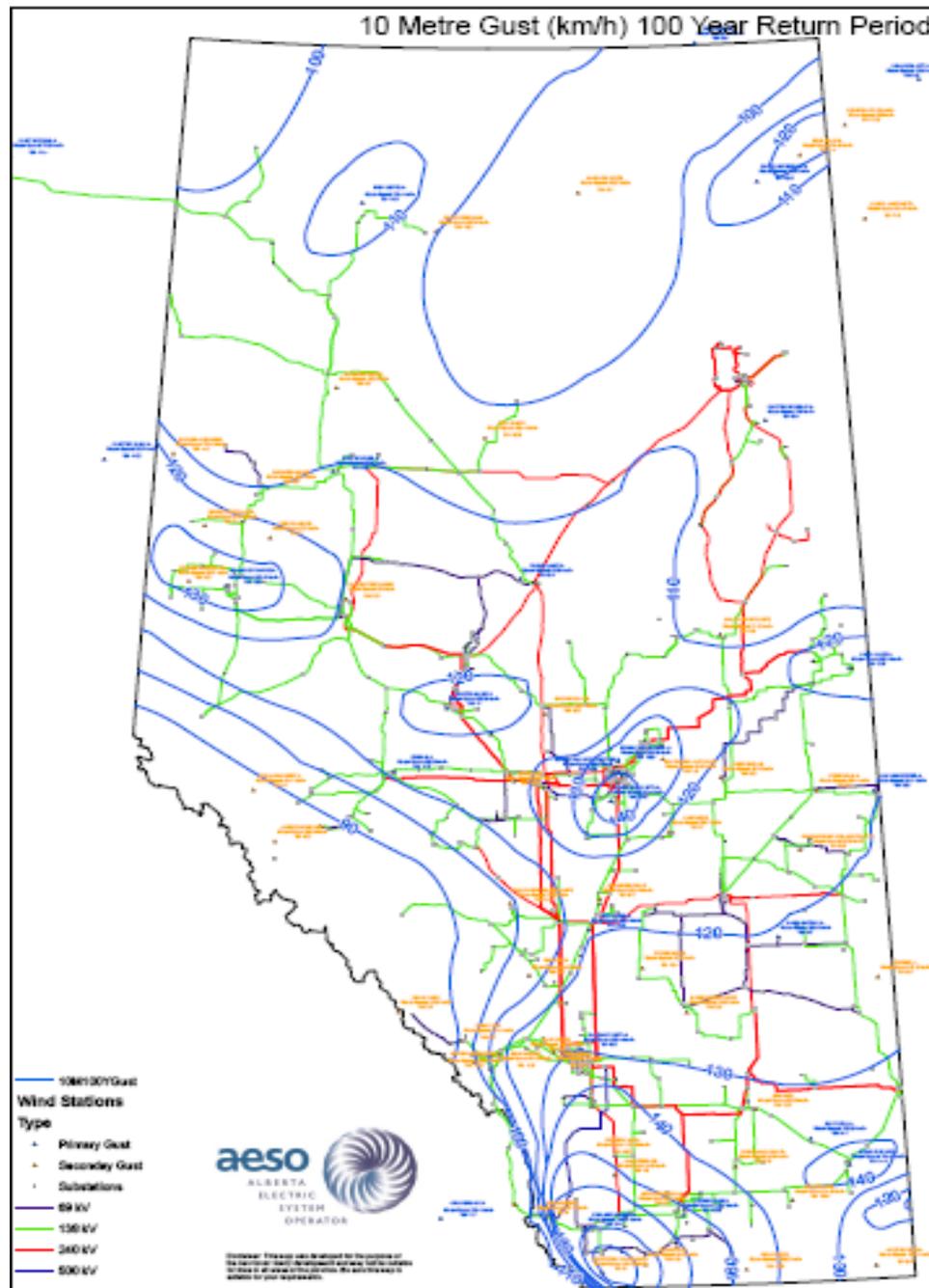
Private developers are mostly localized in southern Alberta and in Oil Sands Area.

From the infrastructure development point of view, AltaLink and ATCO represent the main customers of the Engineering, Procurement and Construction Management (EPCM) firms competing in the power transmission industry. Occasional customers are represented by local utilities, like EPCOR and ENMAX and private developers, when they decide to develop small size power transmission projects.

#### **1.1.4 Competition in developing power transmission facilities – major EPCM firms**

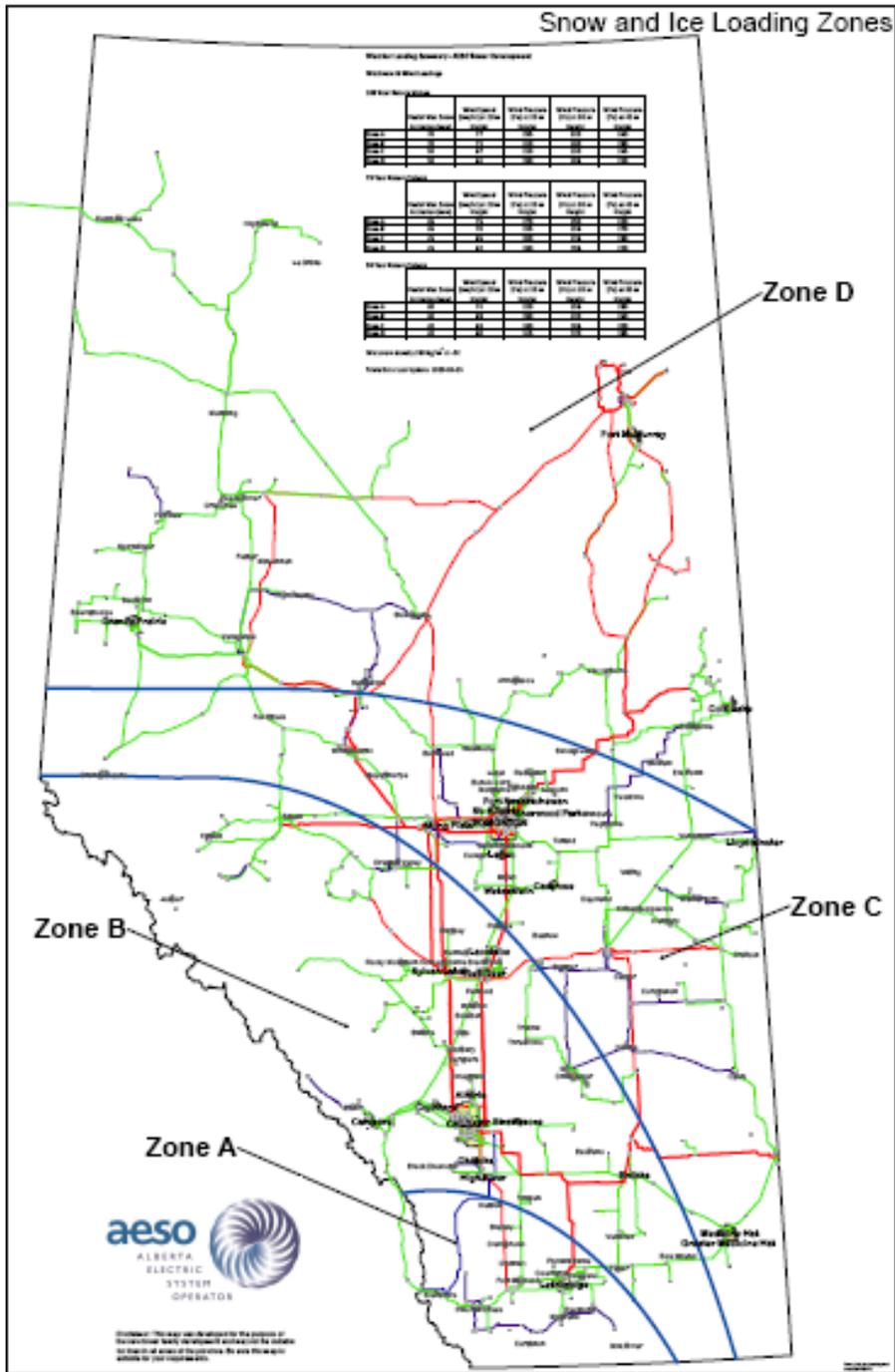
In Alberta, the TFOs rely on EPCM service providers to develop or upgrade their power transmission assets. These assets are not commodities because they require a highly customized design, based on specific geo-climatic criteria, like wind speed and snow and ice loads. These criteria affect facility functional performance, availability, and reliability, and therefore, the AESO is mandating the minimum technical requirements for the design the TFOs and EPCM providers must observe. Figures 3 and 4 below exemplify AESO's requirements.

Figure 3 – Alberta wind map – values recorded in the last 100 years - Source AESO<sup>3</sup>



<sup>3</sup> [http://www.aeso.ca/downloads/Information\\_Document\\_-\\_Bulk\\_Transmission\\_Line\\_Technical\\_Requirements.pdf](http://www.aeso.ca/downloads/Information_Document_-_Bulk_Transmission_Line_Technical_Requirements.pdf)

Figure 4 – Alberta snow and ice loading zones – Source AESO <sup>4</sup>



<sup>4</sup> [http://www.aeso.ca/downloads/Information\\_Document\\_-\\_Bulk\\_Transmission\\_Line\\_Technical\\_Requirements.pdf](http://www.aeso.ca/downloads/Information_Document_-_Bulk_Transmission_Line_Technical_Requirements.pdf)

Three segments of the EPCM industry supply the transmission market:

- Diversified engineering firms, fully capable to provide EPCM services
  - Major global competitors present in Alberta are: SNC Lavalin (through its BU, SNC Lavalin ATP); Bechtel Group; URS Corporation; Fluor Corporation; Jacobs Engineering Group; CH2M HILL Companies and Worley Parsons, the Australian giant that recently acquired Calgary-based Colt Engineering.
- Engineering companies recently ventured in the EPCM services
  - Stantec - the most representative firm in this category.
- Construction firms aiming to a EPCM position
  - Flint Energy – a Canadian company with construction experience of over 100 years;
  - Quanta Services – a large American construction conglomerate

## **1.2 Company overview**

SNC-Lavalin, founded in 1911, is currently one of the leading engineering and construction companies in the world, a global leader in the ownership and management of infrastructure, and a key player in facilities and operations management. The SNC-Lavalin companies have offices across Canada and in 30 other countries around the world and are currently working in some 100 countries and presently having nearly 24,000 employees.

SNC-Lavalin Transmission and Distribution (T&D) is a major division within SNC Lavalin group. T&D has planned, designed, and constructed over 90,000 km of transmission and distribution lines and nearly 1,500 substations. It provides a full range of services for transmission and distribution facilities and infrastructure including planning and feasibility studies; engineering, procurement, construction and project management on an EPC or EPCM basis; software and consulting services.

In 2002, SNC-Lavalin T&D established its formal presence in Alberta because of the acquisition and re-branding of a local engineering and project management entity. This acquisition was a result of Alberta's market deregulation and the split of government owned power utility TransAlta into three new entities:

- AltaLink – a new privately owned utility, focused on developing and managing the power transmission infrastructure
- SNC Lavalin ATP – a new EPCM firm that inherited TransAlta's engineering, project management and procurement departments
- The “new” TransAlta - a private utility, operating and developing power generation plants

On April 30, 2002 AltaLink assumed control of Alberta's largest electrical power transmission system, marking the beginning of a new era in the Canadian electricity industry by becoming the first independent transmission provider in Canada. In spring 2002, following Alberta Utilities Commission (AUC) acceptance, AltaLink and SNC-Lavalin ATP entered into a ten-year exclusive contract to provide engineering,

procurement, and construction management services for all capital projects undertaken by AltaLink.

### 1.2.1 ATP’s position in the marketplace

Despite a lack of construction of major provincial transmission infrastructure over the past twenty years, the company has managed to retain highly specialized utility engineering expertise through the exclusivity agreement with AltaLink. This ensured a steady workflow to its qualified resources, and a growing revenue stream. The progress is reflected in Table 1.2, below:

Table 1.2- ATP revenues evolution<sup>5</sup>

	2006	2007	2008	2009	2010
ATP’s revenues	\$149.7M	\$158.6M	\$173.4M	\$191.2M	\$231.2M
Altalink’s capital expenditures	\$189.6M	\$198.6M	\$227.4M	\$262.3M	\$287.2M

Comparing the company’s revenues to TFO’s consolidated yearly capital expenditures for the same period, it can be concluded that ATP is the dominant player in Alberta’s power transmission development. At the same time, the ten-year exclusivity agreement largely discouraged the establishment of a strong competition at the province level and limited opportunities for competitors to ATCO’s occasional development projects.

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<sup>5</sup> Confidential information, real values have been disguised, but ascendant trend proportionally reflected

Presently, from ATP's standpoint, the industry is still very attractive based on the growth opportunities and how extremely well positioned Business Unit is in the marketplace. This suggests that up to this moment there has been a good fit between the company's past and present strategy and the business environment. However, in May 2012 the environment is going to change and several other firms will competitively bid on the new EPCM projects. The anticipated size of competition on these projects presents a serious threat to ATP's present enviable position. Management admits that the time has come to take a fresh look at current practices, structure and culture, to assess and make the required changes to stimulate and maintain sustainable growth in the changing business context.

### **1.2.2 ATP's current strategy and performance**

Michael Porter identified three potential strategies to outperform other firms in the industry: overall cost leadership, differentiation or focus. He further suggested evaluating company strategy on three business levels: corporate, division or business unit.<sup>6</sup>

Corporate level encompasses the group of businesses, acting in various industries, in which the company should compete and with the selection and coordination of that portfolio of businesses. Division level strategy is more focused than corporate level and provides direction for a single business type or on the same value chain. Business Unit level is referring to only one business and is about developing and maintaining a competitive advantage for its products or services.

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<sup>6</sup> Michael E. Porter – *Competitive Strategy, Techniques for Analyzing Industries and Competitors* – New York, NY- The Free Press 1998

In this paper, the strategic analysis is performed at the business unit (BU) level. ATP is striving to retain its leadership position by relying on experience and innovation, maintaining and strengthening its core engineering competence, developing new skills and activities, and response to the changing needs of clients and markets. ATP is primarily employing a differentiation strategy, focused on targeting utilities active in the power transmission industry.

At the corporate level, SNC Lavalin group has the overarching mission statement summarized below<sup>7</sup>:

“SNC-Lavalin is one of the world's leading engineering, procurement, construction, and related technical services organizations, serving selected industry sectors and geographic markets.

SNC-Lavalin achieves this through the expertise of its people by contributing to the success of its clients through value-added services and by continuous investment in the improvement of its technical and managerial competence.

SNC-Lavalin is committed to achieving a superior financial return for its shareholders.” This mission statement is presented in detail in Appendix B.

At the business unit level, the corporate mission can be expressed in an Objectives, Advantage, and Scope (OAS) statement<sup>8</sup>. The OAS statement consists of three elements strongly intertwined:

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<sup>7</sup> SNC Lavalin - official corporate web site - <http://www.snclavalin.com/about.php?lang=en> ,accessed on May 20, 2011

<sup>8</sup> David J. Collis and Michael G. Rukstad – Can You Say What Your Strategy Is?, Harvard Business Review, Boston, MA, April 2008

- Specific, measurable, bounded by time Objectives (O). The Objectives present concrete end results against which actual performance will be evaluated (e.g. ROS, ROE, ROA, Market Share, Cumulative Profit, etc.).
- Added value Advantage (A) - specifies what firm does uniquely, differently, and better than competitors, together with the source of that advantage(s).
- Scope (S) - defines the domain in which company operates. In essence, Scope addresses the following questions: Who are the customers and segments? Where are the distribution channels geographically located? What are the products/services offered? And, what are the boundaries company will not cross?

Based on the three descriptors presented above, ATP's senior management<sup>9</sup> had developed and accepted the following OAS statement:

- To reach 25% gross margin and \$500 million in sales by 2015, (Objective)
- by providing high quality and innovative Consulting, Engineering, Procurement, Construction Management and Project Management highly customized services (Advantage)
- to North American power utilities and large power transmission facility developers who value reliability, quality, technological advancements and lesser impact on environment over traditional design, conventional materials and construction methods (Scope)
- through our regional offices in Canada and the USA, while engaging our worldwide centres of engineering excellence (Scope)

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<sup>9</sup> Personal interview with ATP Senior Vice President and General Manager, February 4, 2011

- and NOT pursuing opportunistic “one shot deals” that are detrimental to serving the established client base, compromise on health, safety and environmental standards or deliver suboptimal quality services (Scope limits, explicitly stating the boundaries company will not cross)

### **1.3 Firm’s strategy: Differentiation and utility focus**

To achieve its Objectives Advantage Scope (OAS), the Business Unit is seeking to differentiate itself as the industry leader in Alberta by targeting the customers who value quality, technological advancements, lesser impact on the environment and faster implementation over a lower price that reflects traditional design, conventional materials, and construction methods. These customers appreciate the returns from a greater upfront investment that provide higher reliability, shorter duration of construction and minimized footprint and disturbance to the environment.

Even the cost conscious private generators, frequent users of AltaLink’s power lines, recognize the value of paying a little bit more in exchange for receiving utility grade reliability technology, as downtime is very expensive. A good example reflecting the consequences and losses arising from poor reliability of a power line comes from the power generation industry. In case of green energy wind farms, the selling price is approximately \$100 per Megawatt hour. Assuming the size of a common wind farm in Southern Alberta with an installed capacity of 200 Megawatts, a shut down for one day of the transmission line used for shipping the power to consumers can translate into a lost opportunity of \$480,000. Thus, reliability of transmission infrastructure is highly valued equally by its owners and its customers.

### **1.3.1 Utility focus**

Focus is a subset of differentiation strategy aimed at a segment. This means that rather than pursuing all conceivable customers interested in developing power transmission facilities ATP is limiting its portfolio to large and mature clients, providing steady demand and growth opportunities. ATP has focussed and honed its differentiation strategy around specific needs of utilities improving their competitiveness. ATP has proved itself in providing additional value to the utilities by reducing downtime, increasing capacity by using the same transmission corridor, improving reliability, safety, security, and last but not least, minimizing capital investment costs.

Utilities are also predisposed to engage in long term agreement with service providers, aiming to ensure consistency over time on design standards, material specifications, preferred equipment brands in order to facilitate operation and maintenance of newly constructed facilities. These clients tend to select EPCM firms capable of understanding the regulatory environment and its specific constraints and engage them from the pre-feasibility stage of a project until final commissioning. Therefore, a utility focused strategy is desired by these clients.

## **1.4 Strategy and strategic fit**

Critical to the strategy success is “strategic fit”. The notion of “strategic fit” defines the degree of alignment that exists between the firm’s strategy, organizational capabilities, core competencies, and external environment (markets).<sup>10</sup>

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<sup>10</sup> Ed Bukszar - “MBA Strategy Seminar.” Course notes BUS 607 – Strategy. Beedie Graduate School of Business, Simon Fraser University. Jan 10, 2009

An analysis tool used for determining the alignment of a specific organizational element in relation to the overall strategic direction of a company is the “strategic grid”. The strategic grid was introduced in 1983 by F. Warren McFarlan, James L. McKenney and Philip Pyburn<sup>11</sup> and further developed by Professor Ed Buksar<sup>12</sup>.

The strategic fit grid considers nine variables used to assess a firm’s ability to implement its strategy: the score for each variable could suggest either strategy and internal environment are in sync, or indicate a poor alignment of these variables with the strategy. The variables considered are product strategy, research and development (R&D) expenses, structure, decision making, manufacturing, labour, marketing, risk profile, and capital structure. The score for each variable is based on existing data for ATP. Where this is not readily available, necessary information is extracted from corporate reports and interviews with senior executives and is subsequently extrapolated to BU level. The strategic fit grid is presented in Figure 5, below.

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<sup>11</sup> F. Warren McFarlan, James L. McKenney, and Philip Pyburn - The Information Archipelago – Plotting a Course - Harvard Business Review, 1983, retrieved from <http://hbr.org/1983/01/the-information-archipelago-plotting-a-course/ar/pr>

<sup>12</sup> Ed Bukszar - “MBA Strategy Seminar.” Course notes BUS 607 – Strategy. Beedie Graduate School of Business, Simon Fraser University. Jan 10, 2009



### 1.4.1 Product Strategy

The two ends of the spectrum defining product strategy are rapid followers and innovation leaders. In general, companies with a differentiation strategy tend to be highly innovative and produce leading edge products, services, or technologies<sup>14</sup>.

Utility industries tend to be more traditional and there is reluctance in accepting cutting edge technologies for materials and equipment. Traditionally, utilities were not early adopters and innovation was accepted only after the new product or technology has been proven and confirmed by industry experts and accepted by the regulators. However, recent industry reports show that innovation is a key success factor for power transmission utilities and their “late majority” position regarding innovation is expected to change rapidly<sup>15</sup>.

In the meantime, even utilizing existing materials and equipment, there are unlimited opportunities in implementing new and innovative solutions in construction to reduce the environmental footprint, minimize the duration of activities, and create employment for local communities. Throughout its evolution, ATP has proven to be an innovative company, growing the business through novel solutions generating additional value to its clients. Below are only few examples that substantiate this statement:

- the large-scale implementation of ATP’s new method for tower erection utilizing the most powerful commercial helicopters replacing the heavy and greatly environmental disturbing auto cranes

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<sup>14</sup> Bukszar, Ed. “MBA Strategy Seminar.” Course notes. BUS 607 – Strategy. Beedie Graduate School of Business, Simon Fraser University. Jan 10, 2009.

<sup>15</sup> Roland Berger Strategy Consultants - Global Power Utilities Study 2011- Trends and Strategies, April 2011, [http://www.rolandberger.us/media/pdf/Roland\\_Berger\\_GlobalUtilitiesStudyBrief\\_20110422.pdf](http://www.rolandberger.us/media/pdf/Roland_Berger_GlobalUtilitiesStudyBrief_20110422.pdf)

- substitution of excavated foundations with screw piles that eliminate excavation of several thousands of cubic meters, required by the conventional method and again, minimize the damage to the environment
- regular recruitment and employment of First Nations communities from the project area

In light of the reasons above, the BU, rated at 9 in the table above, is identified as a strong fit with the differentiation strategy of the company.

#### **1.4.2 Research and Development (R&D) Expenses**

On average, the business units within SNC Lavalin group spend approximately 3-6% of net income on R&D expenses. ATP is located on the upper limit of this range, with an R&D expense of 6.0%, while its competitors in power transmission industry allocate on average 4.0 - 5.0%.<sup>16</sup> Hence, the R&D expenses rate at 8. This level of spending is consistent with a company that chooses to put time and resources into developing new and innovative solutions.

#### **1.4.3 Structure**

The structure of SNC Lavalin group is relatively decentralized, with each division and BU operating individually with very little input and contribution from the other divisions. Each BU has its own Senior Vice President & General Manager, executive team, and functional department. This allows each BU to respond to its particular industry's needs and allows highly skilled employees the flexibility to employ their entire capabilities. While the Corporate President oversees the group as a whole for consistent

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<sup>16</sup> Personal interview with SNC Lavalin ATP Controller, May 20, 2011

adherence to core values and principles (reflected in Appendix C), SNC Lavalin allows each of the Divisions and BUs to operate much like independent companies.

Internally, the BU has a matrix structure, with dual subordination: a functional, vertical dimension of similar qualifications led by discipline managers and a project-oriented, horizontal structure, with several discipline experts reporting to project managers. The project teams enjoy a high autonomy and the functional managers' role involves resource assignment, workload optimization, professional development, training programs, etc., without interfering in project related tasks.

However, the project managers working on AltaLink projects are currently reporting to the Vice President – AltaLink Projects. Despite his great effort to stay abreast with all projects and his personal commitment to allow great leeway to project managers, as the number of projects increases, it is becoming more and more evident that he is becoming a bottleneck of regular operations. Therefore, the company is rated a 7 at this dimension. This value is still supporting differentiation strategy, but evidently, it could be better. Nevertheless, unless the current trend of centralization at project management level is reversed, it will certainly create problems to ATP's long-term differentiation strategy.

#### **1.4.4 Decision-Making**

The Decision-Making variable is rated at nine in the above chart because of the highly autonomous nature of the decision-making at the BU level within SNC Lavalin group. In addition, highly consistent with the differentiation strategy adopted by the company, internally, each project manager receives a high degree of latitude. This high score, through the interaction between decision-making and the structure, shows that although credited with 7, the decentralization is in effect.

#### **1.4.5 Production**

Because of the highly specialized nature of services provided by ATP, economies of scale have not been the focus. Every single power transmission facility, irrespective of being a greenfield or brownfield project (for definition please refer to Glossary), has its own particularities and requires a different approach. Thus, instead of attempting to achieve economies of scale by developing standard projects “one size fits all”, the attention is concentrated on custom-engineered equipment or new technologies. These innovations are capable of generating economies of scope to the customer through enhancement of asset value by combining several functionalities within the same facility (e.g. power transformers, current and voltage transformers, radio, fibre optic and microwave communications, etc.). ATP continuously provides high flexibility in production and consistently offers integrated solutions with a multitude of features highly valued by its clients. The company scores 8 at production, which is consistent with its differentiation strategy.

#### **1.4.6 Labour**

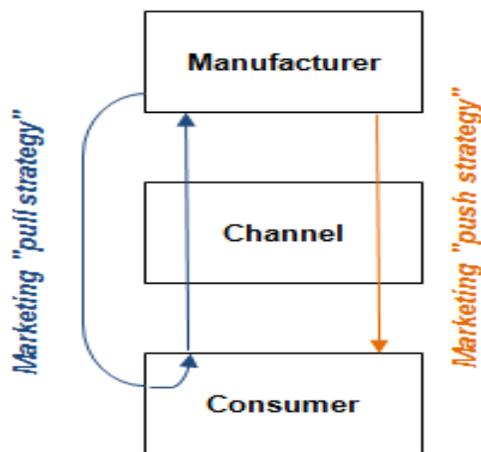
Supplying engineering, procurement, and construction management services requires a highly skilled labour force, consisting of professionals encompassing several disciplines. Also, the R&D activities require engineers with creativity and experience in dealing with a large variety of challenges. With more than 80% of ATP’s employees being engineers and highly qualified professionals, the company rates at 10, or maximum value, on its labour dimension, because of the high concentration of experts. The interdependency between labour attribute, decision making and structure dimensions

explains the very high score recorded for labour. However, the company is facing a growing problem of limited availability of such a highly qualified workforce in Alberta.

### 1.4.7 Marketing

In marketing, a *push strategy* focuses on advertising and leading the retailers to sell the product. Alternatively, a *pull strategy* means that the end consumer demands the product and “pulls” it through the distribution channel, and the retailer’s role is merely to make the product conveniently available.<sup>17</sup> Figure 6 shows a graphic representation of marketing push and pull strategies.

Figure 6 – Push and pull strategies<sup>18</sup>

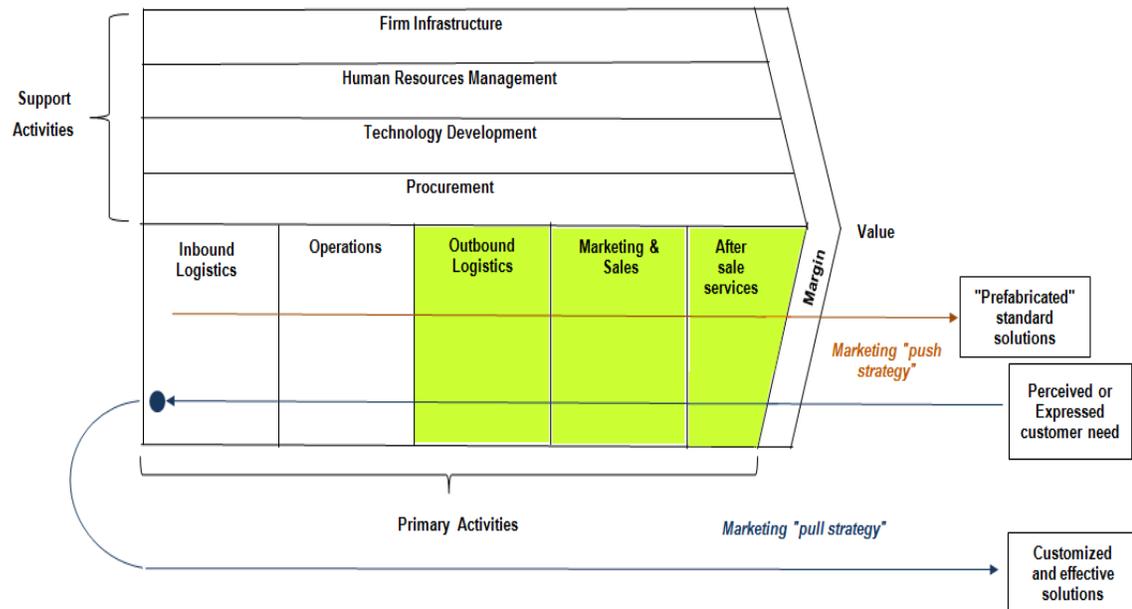


In a business-to-business environment, the distributors and retailers are inexistent and the channel is an integral part of seller’s downstream value chain. Figure 7 highlights this concept.

<sup>17</sup> Silk, Alvin J. - What is Marketing – Boston, MA - Harvard Business School Press, 2006

<sup>18</sup> Silk, Alvin J. - What is Marketing – Boston, MA - Harvard Business School Press, 2006

Figure 7 – Push and pull strategies in business-to-business environment



Typically, a low-cost competitor is associated with a push marketing strategy as it is trying to sell its standard offerings at high volumes to the customer. A differentiated competitor is usually associated with a pull marketing strategy as it is trying to attract customers with a higher willingness to pay for a product or service that satisfies the needs and provides a package of additional benefits.

The company often responds to customer requests, collaboratively develops new products, or pro-actively offers innovative solutions that contribute to the power utilities success. There are, however, instances when company reacts to customer requests and require significant time to provide an appropriate solution. This situation is due, in part, by the current overload of highly qualified resources and a tendency to overdesign the products to minimize the potential failure risk. Long-term, this could become a problem to ATP's differentiation strategy. Therefore, the company is rated an 8 at this dimension.

#### **1.4.8 Risk Profile**

Risk profile is defined as the willingness of a company to take risks and how those risks will affect the strategy of the company.<sup>19</sup>

The modest value of risk profile, rated at 6, indicates an anomaly for an innovative company with a differentiation strategy. This score is due to ATP's risk profile alignment with power utilities it serves, an issue of concern.

The utilities, by their nature, are risk adverse and have a reduced willingness to take chances with respect to loss in the broad sense: loss of assets, loss of their solid health, safety, and environmental (HSE) records, or loss of their public image and reputation.

Conversely, utilities are forced to become more efficient and are demanding their suppliers to propose new technologies able to improve their system performance.

Therefore, in all its projects ATP must act prudently and ensure that the risks assumed are within the range of client's acceptable limits, but at the same time not too risk adverse to deter the creativity and innovation that is essential for its differentiation strategy.

#### **1.4.9 Capital Structure**

Based on corporate financial information, SNC Lavalin Group Inc. appears to have a leveraged structure as indicated by the debt to equity ratio of 195.2% in 2010, above sector and industry average.<sup>20</sup> This can be explained by the corporate decision to increase the level of indebtedness and raise liquidity in preparation for new valuable acquisitions with a much higher return than the cost of capital. It is usually a temporary situation and is consistent with the group's actively pursued inorganic growth strategy.

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<sup>19</sup> BusinessDictionary.com - <http://www.businessdictionary.com/definition/risk-profile.html> , Sep. 18,2011

<sup>20</sup> <http://www.reuters.com/finance/stocks/financialHighlights?symbol=SNC.TO> , May 20, 2011)

However, the current corporate indebtedness has little effect on ATP and at the business unit level the management maintains a highly conservative capital structure, reflected by total lack of debt.<sup>21</sup> The BU's capital structure rates accordingly at 10.

#### **1.4.10 Conclusions of strategic fit analysis**

On almost all analyzed organizational elements, the BU was rated at the upper limit reflecting ATP's management understanding of present business environment. However, maintaining the company's current leadership position through a differentiation strategy may require considerable effort in the future.

The current structure, particularly for project management, is too centralized and is becoming increasingly problematic for the normal course of regular operations. As the number of projects increases, it will become challenging to operate successfully using the existing reporting structure where all project managers report to Vice President, AltaLink Projects.

ATP's current risk profile is too conservative and is an issue of concern for the company's differentiation strategy. The growing shortage of highly qualified resources in Alberta is forcing the company to prefer proven technologies and is limiting engineers' creativity and quick adoption of newly developed technologies.

It is also important to recognize that BU's high performances occur in an extremely favourable context and the results obtained after performing the fit analysis should be carefully considered in conjunction with market dynamics.

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<sup>21</sup> Personal interview with SNC Lavalin ATP Controller, May 20, 2011

## **1.5 Challenges related to anticipated market dynamics**

The exclusivity agreement with AltaLink, very favourable for ATP's position on the market and offering long-term guaranteed revenues and profits, will expire in May 2012. Upon contract expiration, ATP will have direct competition and must participate in public bids in to acquire new projects from AltaLink.

AltaLink's massive capital investment plan demanded ATP's full capacity and, therefore, precluded the BU from tapping into the other major utility market segments such as ATCO Electric, the second largest TFO, or employing its resources in projects promoted by independent power transmission developers. Although these two categories of customers are similar to AltaLink, due to excessive focus and specialization on this client, ATP possesses little experience in serving other utilities or developers in Alberta.

In the medium term (1.5 to 3 years), the provincial government is planning to deregulate power transmission and allow the existence of several TFOs to operate and compete in Alberta, which could further fragment the current concentrated market. Some private developers are already conducting pre-feasibility studies for ambitious future power transmission projects. For example, Trans Canada is envisioning a double circuit 500kV power line capable to export or import up to 2,000MW between Alberta and California.

In a deregulated market, several TFOs will competitively bid for the development of Critical Infrastructure Projects. ATP has to be prepared to enhance its client portfolio,

demonstrate the value added as a benefit of its differentiation strategy, and successfully cope with the rivalry posed by other EPCM, engineering or construction companies.

In the near future, ATP will be striving to maintain its leadership position. The annual revenue growth rate is forecast at 10%, with a range of +/- 3 percent, with a split between AltaLink – 70% and other sources – 30%<sup>22</sup>. In ATP's strategic growth plan, this increase is envisioned to be achieved by:

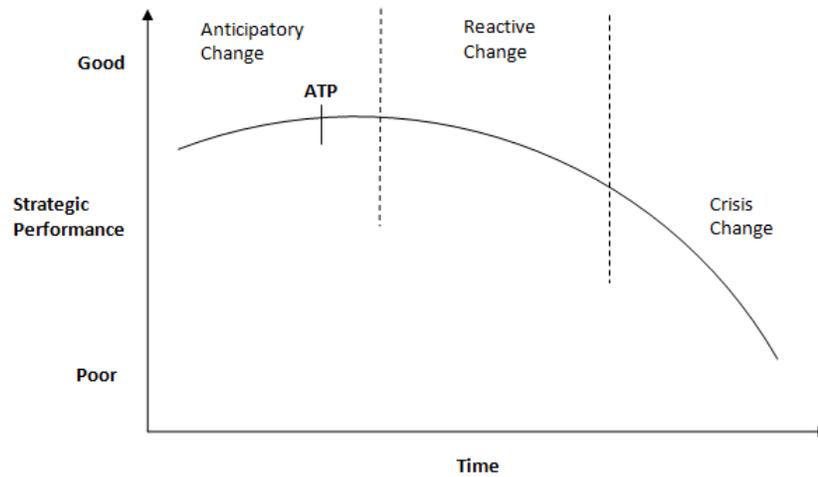
- Continuing to address AltaLink needs and enhance the value of services provided to this utility
- Augmenting the client portfolio in Alberta by tapping into other utilities and, potentially, private developers' projects
- Expanding the customer base by entering in long term master Service Agreements with major utilities in nearby provinces (British Columbia and Saskatchewan)
- Penetrating the market in jurisdictions other than Western Canada

ATP is in the anticipatory change phase where strategic performance is healthy and the need for change is still uncertain. Based on backlog, the large number of existing projects will continue to contribute to the revenue growth, likely for another year or more. ATP's current situation is presented graphically in Figure 8 below.

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<sup>22</sup> *Personal interview with ATP Senior Vice President and General Manager, February 4, 2011*

Figure 8 – Urgency for Action: The Crisis Curve<sup>23</sup>



The critical issue facing ATP after May 2012 is that planned growth will prove very challenging considering the changes in the business environment, growing competition, and limited pool of talented resources. In addition, the industry trends indicate that the client's preferences are moving towards further customization:

- minimized facility footprint and an implicit push for more design customization based on the specific site conditions
- reduced environmental disturbance, and demands for less invasive construction methods and reduction of construction duration
- increased reliability and security standards, which implies more customer specific design and execution

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<sup>23</sup> Crossan, M. Mary, Rouse J. Michael, Fry N. Joseph, Killing J. Peter (2009). Strategic Analysis and Action. Toronto, ON; Pearson Prentice Hall, Seventh Edition.

- desire to maintain existing utility standards and preferred equipment brands that will require in depth knowledge of each customer equipment specifications standardized equipment that is interchangeable
- Reduced operating costs as a result of specialization and low inventory, requiring great familiarity with existing assets

## 1.6 Preview of future chapters

The first chapter presents the industry overview, company's position in the market place, its current strategy and strategic fit, comments on strategic challenges and describes the future issues of concern.

Over the course of forthcoming chapters in this project, the following topics are covered:

- **Chapter 2** focuses on the Environmental Analysis, using Porter's five forces model to evaluate industry attractiveness. Further, a competitive analysis shows the evaluation of ATP's Key Success Factors (KSFs). The competitive analysis, used to compare SNC versus the direct or anticipated competition on the KSFs, finds strategic opportunities and threats. Included is an assessment of the opportunities and threats. At the end, strategic options are presented in response to the KSFs and opportunities identified earlier
- **Chapter 3** covers the internal capabilities analysis and determines which strategic options could be successfully implemented
- **Chapter 4** presents the final recommendations and proposes an Implementation Plan

## **2: EXTERNAL ANALYSIS**

The second chapter provides an overview of the five competitive forces and their strength in order to determine the industry attractiveness.

Corresponding to each of the five forces, sources of competitive advantage are identified as Key Success Factors (KSFs) in the industry and further assessed in greater details with respect to ATP's position vis-a-vis its main competitors. Based on the KSFs, the paper then identifies and analyzes the opportunities and threats existing in the competitive environment.

Finally, the chapter investigates the potential strategic alternatives available to enhance the company position taking advantage of the existing opportunities and mitigating exposure to the threats posed by the competition.

### **2.1 Industry Analysis – The Five Competitive Forces**

The Five Forces Model developed by Michael Porter provides the framework for analyzing the external environment in which the business operates to define the intensity of competition, the level of profitability, and industry attractiveness. Completing the analysis allows companies “to understand the underpinnings of competition and the root causes of profitability”<sup>24</sup>, and thereby enable them to develop better strategies, well aligned to the dynamic business environment.

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<sup>24</sup> Michael E. Porter – *On Competition – Updated and Expanded Edition* – Boston, MA- Harvard Business Review Press 2008

The business environment is governed by five competitive forces: the entry of new competitors, the threat of substitutes, the bargaining power of buyers, the bargaining power of suppliers, and the rivalry among the existing competitors. These forces determine the attractiveness of the industry and the key factors required for success in the industry (KSFs). The following section describes each force, identifies key success factors, and determines ATP's position on each key success factor.

### **2.1.1 Threat of New Entrants** (strength: overall medium)

“The threat of entry into an industry depends on the *barriers to entry* that are present, coupled with the *reaction* from existing competitors that the entrant can expect.”<sup>25</sup>

According to Michael Porter there are at least eight major sources of barriers to entry.

#### **2.1.1.1 Economies of Scale** (strength: low)

Economies of scale deter new entrants by forcing them to come in, either at large scale and risk strong reaction from existing firms, or come in at a small scale and accept a cost disadvantage. The main source of economies of scale is the cost to develop the new product or service. Specifically to EPCM services in power transmission industry, each project has its own particularities that requires customized design, equipment specifications and is subject to particular access, environmental and construction constraints. Hence, because each project is unique, there are no direct opportunities for

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<sup>25</sup> Michael E. Porter – *Competitive Strategy, Techniques for Analysing Industries and Competitors* – New York, NY- The Free Press 1998

replication that generate scale effects. In addition, it is very unlikely for a new entrant to penetrate the market with a large number of projects simultaneously, as a client would be unwilling to assume the risk to award several jobs to a newcomer. We can conclude, therefore, that this barrier to entry is low.

#### **2.1.1.2 Product Differentiation** (strength: very high)

Product differentiation means that established firms have brand identification and customer loyalties, which stem from past advertising, customer service, product differentiation, or simply being first into the industry.<sup>26</sup>

Differentiated EPCM service providers create a forceful barrier to entry by obligating the new entrants to spend heavily to overcome existing customer loyalties. This very high entry barrier is paramount in the power transmission industry. The brand reputation and strong track records are essential for success and are highly exploited by the incumbents. ATP's capability to leverage SNC Lavalin's brand name and its worldwide recognition, in conjunction with a unique long list of successful accomplishments in Alberta, are major Key Success Factors (KSFs) for this business unit.

An equally important KSF relevant to product (service) differentiation is customer loyalty. Although the current exclusivity agreement between SNC Lavalin ATP and AltaLink guarantees repeated business, ATP strives to constantly exceed customer satisfaction and enhance the client's value to its customers. As an expression of its

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<sup>26</sup> Michael E. Porter – *On Competition – Updated and Expanded Edition* – Boston, MA- Harvard Business Review Press 2008

satisfaction and loyalty, AltaLink provides frequent referrals to new potential customers interested in acquiring ATP's services. Customer loyalty is an important KSF for ATP.

#### **2.1.1.3 Capital Requirements** (strength: very high)

The need to invest large financial resources in order to compete creates a barrier to entry, particularly if the capital is required for risky or unrecoverable up-front advertising or research and development.<sup>7</sup>

The capital cost of power transmission facilities is significant. It spans from small projects of \$2.0 million to the largest ones costing between \$700 million and \$1.0 billion. Thus, EPCM services in power transmission industry require a strong financial position and the capability to access large sources of capital. Once the capital is committed to a project it takes usually 3-4 years until final completion and cashing of the final invoice. Sometimes the duration can be even longer due to unpredicted stoppages like adverse weather conditions, changes in environmental restrictions, or unexpected archaeological discoveries. In these instances the EPCM companies require additional financial resources to demobilize and then remobilize the construction crews and equipment making very high overall capital requirements. A strong financial position and access to large sources of capital is an important KSF related to this type of barrier. Particularly in ATP's case, taking advantage of corporate position and the strong financial position is one of the most important KSFs.

#### **2.1.1.4 Customer Switching Costs** (strength: medium-high)

A barrier to entry is created by the presence of switching costs, that is, one-time costs facing the buyer for switching from one supplier's product to another's.<sup>27</sup>

Although engineering services are highly technical and rely on industry standards and general utility codes publicly available, power utilities formalize the working relationship with their major service providers by using numerous procedures jointly developed and compiled into a procedure manual. To name only few of the areas covered by this document, the procedure manual addresses, in great detail, all phases of engineering design starting with pre-feasibility studies and finishing with final acceptance and commissioning. It includes aspects such as equipment technical specification, construction methodology, communication protocol, project management and reporting. Upon completion, both companies have proprietary rights to this document.

The creation of this document requires a significant commitment from senior management and effort from both organizations. The full implementation could take up to one year, but once implemented the procedure manual represents the cornerstone for efficient day-to-day operations and both organizations' focus is overcoming the difficulties arising from development of new projects: regulatory approvals, stakeholders' preferences, environmental restrictions, etc. If the client decides to engage a new EPCM another procedure manual has to be developed, though it may require shorter time to complete it. The immediate, tangible switching cost generated by the need to create another manual does not represent a difficult barrier to surmount and could be offset by a

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<sup>27</sup> Michael E. Porter – *On Competition – Updated and Expanded Edition* – Boston, MA- Harvard Business Review Press 2008

lower cost service provider. However, the inefficiencies associated with the new contractor's learning curve produce a negative ripple effect, difficult to quantify but with significant impact, particularly when the transition happens in the middle of a large program and the client's expert resources have to be diverted from project development to recreating operational procedures. Overall, given the transition inefficiencies, the customer switching costs could be considered at least medium-high.

Specifically for the relationship between AltaLink and ATP, the procedure manual was developed on the basis of common standards the companies took over from Transalta, the former generation and transmission utility in Alberta. This provides ATP unique customer intimacy and the ability to combine detailed customer knowledge with operational flexibility so they can respond quickly to any need, from customizing a product to fulfilling special requests<sup>28</sup>. Switching is not impossible, but is inefficient, and therefore, the barriers are moderate to high. Customer intimacy is a KSF for SNC Lavalin ATP.

#### **2.1.1.5 Unequal Access to Distribution Channels** (strength: low)

The new entrant's need to secure distribution for its product can create a barrier to entry.<sup>29</sup> Unlike consumer goods or even industrial products, in the engineering services and EPCM industry there are no distributors or retailers. In this case, the distribution consists either in long-term agreements or competitive tenders. Thus, access to distribution channels does not represent a barrier to new entrants.

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<sup>28</sup> Michael Treacy and Fred Wiersema – *Customer Intimacy and Other Value Disciplines- Harvard Business Review, Jan-Feb 1993*

<sup>29</sup> Michael E. Porter – *On Competition – Updated and Expanded Edition* – Boston, MA- Harvard Business Review Press 2008

#### **2.1.1.6 Cost Disadvantages Independent of Scale** (strength: high)

Established firms may have a cost or quality advantage not replicable by potential entrants no matter what their size and attained economies of scale.<sup>30</sup>

In engineering services and EPCM industry, the most critical advantages are factors such as: local presence, favourable access to qualified resources, established brand reputation, proprietary product technology, and cumulative experience curve.

Incumbents with strong local presence are able to maximize the value added to the utilities by frequent direct interaction with their clients at the senior management level and numerous joint site visits to assess the progress in the field and provide guidance and appropriate company support to the project teams. Local presence represents an important KSF for ATP; local presence steadily enhances customer intimacy by responding quickly to almost any need AltaLink requires to be successful for its own customers or major stakeholders (the AESO, AUC, Alberta Environment, Indian and Northern Affairs Canada, Department of Fisheries and Oceans, etc.).

Well-entrenched competitors are also better positioned to recruit, develop, and retain qualified workforce as compared to new entrants. Leveraging brand identity and successful track records, incumbents are able to attract both talented young engineers and experienced professionals who value stability and professional development in lieu of riskier positions, although sometimes better paid, offered by newcomers.

Overall, cost disadvantage independent of scale represents a significant, high-strength barrier to entry in the industry.

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<sup>30</sup> Michael E. Porter – *On Competition – Updated and Expanded Edition* – Boston, MA- Harvard Business Review Press 2008

### **2.1.1.7 Government Policy** (strength: high)

Another major source of entry barriers is government policy. Government can limit or even foreclose entry into industries with such controls as licensing requirements, limited on access to raw materials, air and water pollution standards, and product safety and efficacy regulations.<sup>31</sup>

In Alberta the power transmission industry is regulated by the government through the AUC, and major customers are limited to the two main utilities, AltaLink and ATCO. The additional demand created by independent developers is still sporadic and so far reasonably well covered by the existing suppliers. The industrial clients or developers are likely to utilize the services of incumbents who are very familiar with the numerous approvals required for new projects and compliance with increasingly tougher safety and environmental standards, and are able to expedite the process and “get it right” from the first time. Currently, while the provincial government is pondering deregulating the power transmission market, new entrants see little attraction to enter this industry. Presently, government policy represents a high barrier to entry.

### **2.1.1.8 Expected Retaliation** (strength: low)

Expected retaliation refers to potential new entrants’ beliefs of how incumbents may react to their presence by defending established market share. If the reaction is vigorous and expected to last for a long time, the cost of capital required to enter the market could exceed the projected profit, which influences newcomers to stay out of an industry.

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<sup>31</sup> Michael E. Porter – *On Competition – Updated and Expanded Edition* – Boston, MA- Harvard Business Review Press 2008

In Alberta's market, it is highly improbable for incumbents to ignite a price war with newcomers, as there is no significant excess capacity in the engineering services to motivate a price reduction in order to fill available extra capacity and, concurrently, distribute high fixed costs over a larger volume of output. In the face of the threat of new entrants, the incumbents are likely to exercise their clout with customers and, for example, lobby in favour of strengthening the existing long-term agreements or advocate for more restrictive pre-qualification conditions for tenders to keep new competitors out. Nevertheless, this position can be only temporarily successful and mainly in relation to utilities rather than with independent developers or industrial clients.

Moreover, in the event of a sudden overwhelming demand, such as simultaneous development of Critical Transmission Infrastructure Tier 1 and Tier 2, the lack of sufficient supply will become a stronger argument than incumbents' influence, and clients will show increased willingness to accept new providers of engineering services.

Consequently, in both instances of the present status and future market growth, and constant lack of qualified resources, the strength of incumbents' retaliation against new entrants in this industry can be safely considered non-threatening.

### **2.1.2 Bargaining Power of Suppliers** (strength: high)

Powerful suppliers capture more of the value for themselves by charging higher prices, limiting quantity or services, or shifting costs to industry participants.<sup>32</sup>

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<sup>32</sup> Michael E. Porter – *On Competition – Updated and Expanded Edition* – Boston, MA- Harvard Business Review Press 2008

Suppliers to EPCM firms in power transmission industry comprise of pre-construction consultants- specialized in survey, photogrammetry, geotechnical investigation, environmental assessment, experts in relation with the First Nations, manufacturers of equipment and materials, and various construction companies. These range from large organizations capable of building the entire project to small companies performing only specific highly specialized, activities.

Few specialized suppliers serve several EPCM companies and utilities in many provinces and, due to their small number, can exercise significant pressure on buyers. On the front end, local, expert consultants must carry out most of the pre-construction environmental studies. These consultants, due to their scarcity and high specialization, are able to extract considerable profits from the industry.

Private developers are often trying to attract and engage the First Nations and local communities by creating partnerships that include equity participation and the generation of long-term benefits and ancillary advantages – training, construction jobs, permanent operational jobs, development of golf courses, etc. In many cases, the EPCM firm is restricted to only one consultant or liaison, which has the monopoly of relation with First Nations governing bodies.

Currently, there are only few utility grade manufacturers able to meet North American standards although several Asian manufacturers are striving to break into the market. Specialized equipment for power transmission - transformers, circuit breakers, structures (poles or towers), conductors, insulators are produced by a small number of manufacturers and the increasing number of power transmission projects is contributing to the increase of their bargaining power. The equipment is almost always customized

and most of these manufacturers not only provide detailed design and input for EPMC firms R&D, but also are frequently marketing directly to the end users and influence their buying preferences.

On the construction end, the limited numbers of contractors are also enjoying the benefits of a favourable position in relation to EPCM firms and end customers. When they have the option to choose between emergency restoration works, regular maintenance programs, and a new EPCM project, the construction contractors tend to play one customer against another in order to maximize their profits.

SNC-Lavalin ATP manages the strength of suppliers through a corporate Global Procurement System (GPS), which bundles procurement across several projects and divisions, and contracts based on annual volume with phased deliveries. In addition, the system constantly evaluates and promotes new vendors. The GPS gathers materials and equipment for its projects at competitive rates from approximately 42,000 suppliers around the world, 11,000 of which are in Canada<sup>33</sup>. The ability to constantly introduce new suppliers and lower the strength of an existing one, leveraging on corporate purchasing power, is another important KSF for SNC Lavalin ATP, contributing to its leadership position of Alberta's power transmission market.

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<sup>33</sup> SNC-Lavalin and its global strategy - Presented by Pierre Duhaime President and Chief Executive Officer SNC-Lavalin, September 29, 2010 – retrieved on March 24, 2011  
[http://www.snc-lavalin.com/pdf/speeches5\\_en.pdf](http://www.snc-lavalin.com/pdf/speeches5_en.pdf)

### **2.1.3 Bargaining Power of Buyers** (strength: high)

Customers can capture more value by forcing down prices, demanding better quality, or more service. Buyers are powerful if they have negotiating leverage relative to the industry participants, especially if they are concentrated or price sensitive.<sup>34</sup>

In Alberta's power transmission, industry buyers are highly concentrated and the market is an oligopsony with AltaLink and ATCO's combined purchasing power controlling approximately 95% of the market. Moreover, the anticipated expiration of exclusivity agreement between AltaLink and ATP and opening up of the market described in chapter one will provide greater customer power, by making all the service providers bid for each project.

The major utilities, AltaLink and ATCO, have their purchasing criteria focused on high quality, reliability, security, safety, environmental impact, and relationship with local communities. Obviously, they also pay attention to costs as the regulators are closely scrutinizing their capital expenditures, but they value quality and reliability over price. The benefits of a robust and secure network easily offset the consequences of a failure in a province's power transmission grid and costs of emergency restoration works.

Conversely, private developers are primarily price-sensitive and tend to pay less attention than utilities to quality and security, though they devote sometimes even higher consideration to engaging local communities. Although quite active in southern Alberta because of wind turbines boom in this part of the province, their market share is just a tiny fraction compared to big utilities. Because they own only the "collection lines" tying the wind turbines to the power grid, their market position is unlikely to change much in

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<sup>34</sup> Michael E. Porter – *On Competition – Updated and Expanded Edition* – Boston, MA- Harvard Business Review Press 2008

the future, especially when taking into account AltaLink and ATCO's multi-billion development plans.

New projects in remote areas or on First Nations Reserves require flexibility, and at times, a mixed ownership structure for success. Known for their rigid positions, utilities are rarely able to succeed alone in these cases. A knowledgeable, experienced, and financially strong EPCM company could add substantial value by providing feasible public-private partnership solutions. SNC Lavalin Group, through its in-depth understanding and experience in partnerships, is able to lend its expertise and financial support to ATP. For example, SNC Lavalin successfully created partnerships for Canada Line transit system in Vancouver, the Kelowna floating bridge, and highway 407 near Toronto to name only a few major infrastructure projects. Specifically for power transmission industry, ATP's capability to engage into public-private partnerships is another major strength and represents an important KSF.

The buyers' overwhelming power is somewhat diminished (from very high to high) by the growing pressure to construct new transmission facilities. The provincial government commitment's to promote green power and gradually reduce carbon emissions from coal burning power plants promotes the development of renewable energy facilities, mainly the wind farms in the south-western corner of Alberta. This development not only demands immediate action for additional major transmission lines, but also pushes the requirement for redundant lines as part of grid reconfiguration coupled with an advanced control system. When wind farms are inoperative, the new control system and the auxiliary lines are capable of shifting generation immediately to

conventional power plants and transfer the electricity to consumers using another path with minimal losses.

There is no doubt about utilities' bargaining power, but considering the operating constraints of power grid, the EPCM providers can partially alter TFO's strength from very high to high by taking advantage of current demand for new power lines.

#### **2.1.4 Threat of Substitutes** (strength: low)

As described in section 1.2, the AESO predicts the demand for electricity in Alberta will double over the next twenty years. In reality, AESO's projection never considered a major category of potential consumers, "plug-in" electric vehicles, which could result in even higher growth. There is, however, a remote possibility these consumers will use electricity generated locally, as part of a broader concept called distributed generation.

The new concept of distributed generation essentially provides a utility in a box for hotels and large residential buildings, offering electricity, heat, hot water, and cooling on site at below-grid prices by recapturing waste heat.<sup>35</sup> This also includes smart grids and local energy networks, which could, in the medium and distant future, impact the power generation and transmission industries, but the magnitude of the impact is still to be assessed at this time. A conceptualization of these networks is presented in Figure 9.

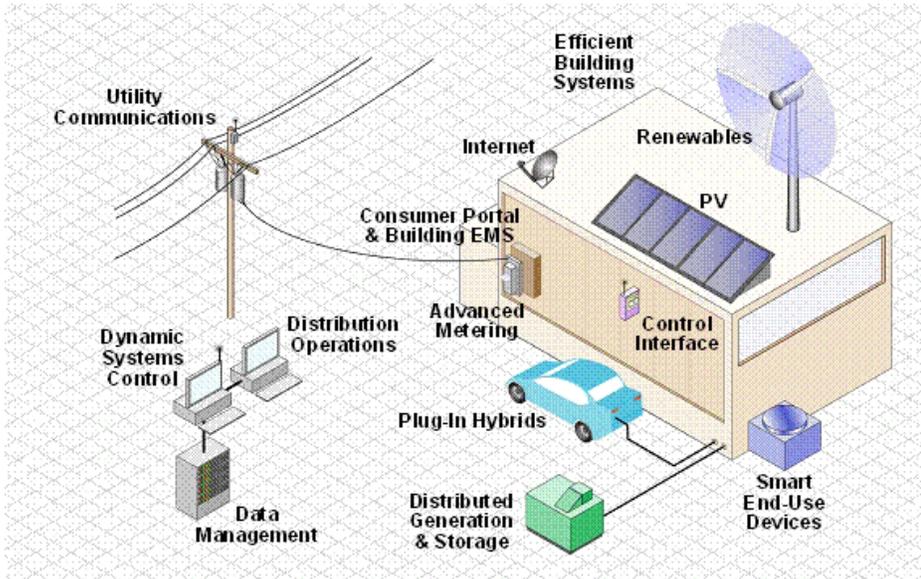
There are also energy conservation initiatives that could level out fluctuations in electricity demand during the day by reducing the morning and evening's peaks, smooth the load on the power lines, and decrease the need for additional power transmission

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<sup>35</sup> Steven Milunovich and Jose Rasco - The Sixth Revolution: The coming of Cleantech - Merrill Lynch – November 17, 2008

facilities. However, the conservation programs do not address medium and long-term growth and, as such, are not current substitutes to power transmission.

Figure 9: Smart grids and local energy networks - Electric Power Research Institute



Technological advancements are expected to influence the future of overhead transmission lines: the shift from alternating current to direct current will reduce the number of conductors (wires) required, the size of towers, and the width of transmission corridors. In the regions with numerous rivers and tributaries, experts are envisioning underwater cables anchored at the bottom of the river beds substituting for the overhead lines.<sup>36</sup> In the future, underground power lines could become more economical than today's prohibitive costs which are approximately ten times more expensive than aerial lines, and could lead to a higher utilization in sub-urban areas, minimizing the environmental and visual impact. Nevertheless, despite promising technological future improvements, there are no viable substitutes to the current methods for power

<sup>36</sup> Clean Technica – Retrieved on March 21, 2011 from: <http://cleantechnica.com/2010/03/17/underwater-transmission-could-be-the-solution-to-get-a-renewable-wind-powered-usa/>

transmission and it is hard to conceive a disruptive technology will emerge in the next decade. The power of substitutes is low.

### **2.1.5 Industry Rivalry (strength: high)**

The power transmission industry is very competitive despite the small number of strong players. This concentration intensifies the competition for a limited pool of highly skilled labour, consisting of professionals including engineering, procurement, and project and construction management. Under these circumstances, it is hard to avoid poaching business and it is usual to witness top qualified specialists migrating not only from one competitor to another, but also to the customers' expert teams.

Incumbents spend significant time and effort in attracting, recruiting, and retaining adequate workforce, but the success of their actions greatly varies. ATP possesses a unique advantage stemming from utility qualified personnel originated from old Transalta, with solid expertise continuously honed over decades.

Although there is a considerable rivalry among industry competitors, the major incumbents carefully avoid price competition. As emphasized by Michael Porter, competition on dimensions other than price - product features, support services, delivery time, or brand image, for instance - is less likely to erode profitability because it improves customer value and can support high prices.<sup>37</sup>

All established EPCM competitors, SNC Lavalin ATP, Fluor, Bechtel and Worley-Parsons are vying for the attention of few customers, striving to differentiate

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<sup>37</sup> Michael E. Porter – *On Competition – Updated and Expanded Edition* – Boston, MA- Harvard Business Review Press 2008

their services by proposing innovative solutions, high quality and reliability, and shorter duration for project implementation.

Without discounting the importance of previously identified attributes for success, equally significant parameters that confer competitive advantage among incumbents are a proven track record in Alberta and customer intimacy, more specifically their capability to tailoring offerings to match exactly the demands of each client.<sup>38</sup> SNC Lavalin ATP is able to excel on both attributes, as track records and customer intimacy are two of its major KSFs pinpointed earlier.

Any development of a greenfield or brownfield facility requires the EPCM providers to possess solid knowledge in the area of project management. A greenfield project is a brand new facility, located in an area where no other construction has been previously built. Conversely, a brownfield project represents the development of an existing facility in order to satisfy the growing needs or comply with more stringent standards.

All competitors are striving to hone their expertise with various degree of success, but, in general, the units representing large corporations are ahead of the competition. SNC Lavalin had developed PM+, an integrated Project Management System, which is coveted by industry leaders worldwide. PM+ combines advanced, interactive computer technology with SNC Lavalin's proven project management technology. PM+ represents for ATP its KSF in the area of project management.

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<sup>38</sup> Michael Treacy and Fred Wiersema – *Customer Intimacy and Other Value Disciplines- Harvard Business Review, Jan-Feb 1993*

Although the EPCM firms do not have to own any production facility, construction equipment, materials, or other similar tangible assets, due to the magnitude of the projects, required long commitment for resources, and complicated progress payment mechanism, the exit barriers are high. In addition, the cost of training, development of proprietary tools, lengthy learning curves, and engineers' entrenchment in highly specialized niches constitute important aspects that could deter incumbents to exit the industry.

The high level of rivalry is somewhat tempered by steady market growth, approx. 3% per annum and the projected surge to 5%, as the forecast for the next 20 years is predicting doubling demand<sup>39</sup>. Conversely, the expectation of a long-term market growth is fuelling competitors' continuous repositioning in the attempt to capture in future a higher share and, hence, is maintaining the level of rivalry at a high level.

## **2.2 Industry Attractiveness**

Figure 10 presents the summary of Industry Structure, using Porter's Five Forces model. The high barriers to entry and low threat of substitutes make the industry very appealing to the incumbents.

Although buyers have a high bargaining power, the EPCM firms currently developing transmission projects can successfully leverage their local presence and understanding of client's needs to create strong value propositions and balance the relationship with the customers.

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<sup>39</sup> Government of Alberta, Electricity in Alberta (n.d.) Retrieved on March 21, 2011 from <http://www.energy.alberta.ca/Electricity/1586.asp>

The strength of suppliers can be somewhat alleviated by long-term purchase agreements and pre-agreed delivery schedules with contingencies built-in to mitigate the risk of late shipments.

Industry growth weakens the intensity of rivalry. Two concurrent factors determine future development of transmission projects in Alberta. The first, as discussed, is growing demand coupled with ageing infrastructure. The second is the provincial government's commitment to promote green power generation. Alberta's current plan to reduce GHG emissions sets a target of 50 percent reduction by 2020.<sup>40</sup> Responding to the Government of Alberta initiatives, in September 2009 the Alberta Utilities Commission (AUC) approved a project to reinforce transmission in southern Alberta and connect 2,700 MW of wind to the grid over the next 10 years.<sup>41</sup> This initiative will require additional distribution and transmission lines to collect and deliver the "green power" to consumers using new corridors still to be determined.

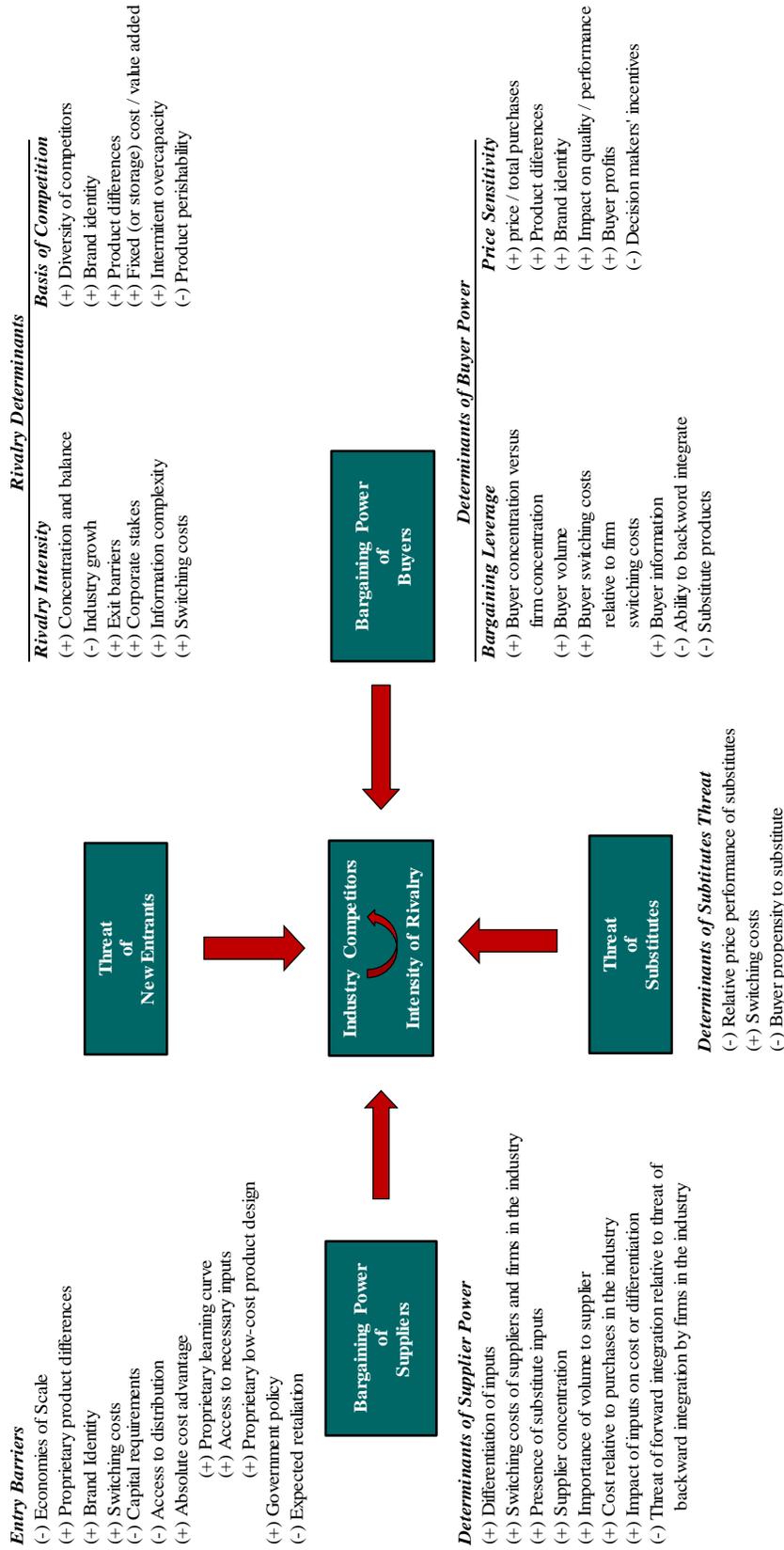
Considering the overall effect of the Five Forces, summarized in Figure 10 below, it can be concluded that power transmission industry in Alberta is attractive.

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<sup>40</sup> Environmental Law Centre - <http://www.elc.ab.ca/pages/Publications/PreviousIssue.aspx?id=578> , retrieved on March 19, 2011

<sup>41</sup>[http://www.aeso.ca/downloads/StakeholderConsultationMatrix\\_Sept3\\_LongTermPlanConsultation\\_FINALE.pdf](http://www.aeso.ca/downloads/StakeholderConsultationMatrix_Sept3_LongTermPlanConsultation_FINALE.pdf) - AESO's web site, retrieved on March 19, 2011

Figure 10 - Alberta's Power Transmission EPCM services for Utilities and Developers - Elements of Industry Structure



Five Forces Model: Michael E. Porter - The Five Competitive Forces That Shape Strategy

Original Source:  
 Michael E. Porter – *Competitive Advantage, Creating and Sustaining Superior Performance* – New York, NY: The Free Press 1998  
 Modified based on:  
 Michael E. Porter – *On Competition - Updated and Expanded Edition* – Boston, MA - Harvard Business Review 2008

## **2.3 Industry Position Analysis**

### **2.3.1 ATP's Key Success Factors and their reflection on firm's strategy**

In section 2.1 ten Key Success Factors (KSFs) were identified, deriving from the industry analysis. This section summarizes the position of ATP's core competencies or corporate strength on these factors:

- Brand name: the strong reputation steadily built by SNC Lavalin group of companies across several industries and markets encompassing over 100 countries means that ATP has the benefit of a highly recognized and valued brand name
- Track record in Alberta is impressive. ATP successfully competed for over 50 power substations and hundreds of kilometers of transmission lines in the last 10 years, which is far greater than any other competitor in the marketplace
- Position in project management, industry leader supported by state-of-the-art project management systems. SNC-Lavalin's PM+ project management system, based on totally integrated databases, is recognized as one of the best in the industry
- Customer intimacy: ATP possess an in-depth understanding and knowledge about its main customer needs and regulatory institutions (e.g. customer's customer) requirements which underlines unparalleled customer intimacy
- Customer loyalty: despite the current exclusivity agreement between SNC Lavalin ATP and Altalink, that guarantees repeated business, ATP delivers high value services, greatly enhancing the customer loyalty that doesn't rely on exclusivity
- Financial position and access to large sources of capital: access to the financial resources of SNC Lavalin group allows ATP to obtain better prices from its

suppliers by utilizing discounts for faster payment and also allows them to cope with the lengthy reimbursement process characteristic to utilities

- Highly skilled workforce: ATP's employees are highly skilled, with a wealth of knowledge in the power transmission industry
- Strong local presence: ATP capitalizes on proximity to the market by frequent direct interaction with clients' management and numerous joint site visits to assess the progress and effectively validate or alter the proposed course of action
- Purchasing power: ATP, through corporate Global Procurement System, bundles procurement across several projects and divisions, and contracts based on annual volume with phased deliveries
- Ability to engage in public-private partnerships: ATP has a flexible and open approach towards the need of its clients. Through its knowledge, experience and strong financial position, the company offers could add feasible public-private partnership solutions.

The KSFs are summarized in Table 2.3.1, below.

Table 2.3.1 - ATP's Key Success Factors

	Key Success Factors	Identified in section
1	Brand reputation	2.1.1.2
2	Successful track records	2.1.1.2 ; 2.1.5
3	Access to highly skilled workforce	2.1.5
4	Unparalleled customer intimacy	2.1.1.4 ; 2.1.5
5	Customer loyalty	2.1.1.2
6	Strong financial position	2.1.1.3
7	Strong local presence	2.1.1.6
8	Leadership in project management	2.1.5
9	Purchasing power	2.1.2
10	Ability to engage in public-private partnerships	2.1.3

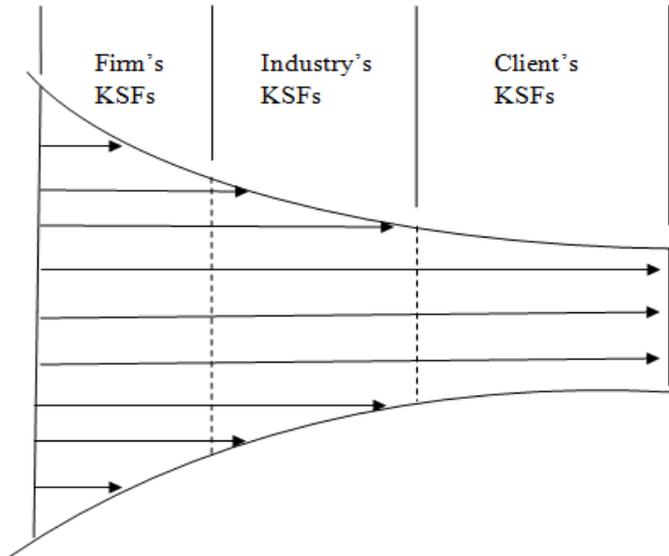
The importance of each ATP's KSF will be assessed in conjunction with their congruence with EPCM Industry's KSFs and will be discussed in the next sections.

### **2.3.2 Client industry economics**

The objective of this section, in the context of ATP's customer focused strategy, is to determine Client Industry KSFs, then assess the alignment between firm's KSFs and Industry's KSFs , and finally the congruence between Industry's KSFs and Client's KSFs. The result of this analysis will allow pinpointing of the firm's specific KSFs which contribute to the Client's success.

This can be illustrated in a funnel type chart, starting with the broad number of firm's KSFs and progressively decreasing, getting "filtered", as they pass through the Industry's KSFs area and advancing towards the Client's KSFs zone (see Figure 11).

Figure 11 – Key Success Factors Congruence



Reflecting competitors' typology, the EPCM power transmission industry combines the KSFs specific to engineering and construction services.

The five key success factors identified by IBIS World in the Global Engineering Services industry have been translated to Alberta's market specific context:<sup>42</sup>

- Ability to compete on tender – similar to other jurisdictions, it is expected that the major utilities and developers in Alberta will frequently award the contracts further to a competitive tender process. Successful competitors should be capable of winning contracts through tender without risking their long-term profitability

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<sup>42</sup> IBIS World Industry Report – Global Engineering Services, 25 March 2011

- Ability to quickly adopt new technology – technological advancements, in terms of new materials and construction technologies, are influencing engineering firms to compete efficiently
- Having contacts within key markets – an established network and sound reputation are increasing the chances to be invited to tender on contracts
- Access to highly skilled workforce – this represent an important constraint on industry expansion and successful firms demonstrate their capacity to attract and retain a skilled workforce
- A wide and expanding product range – possessing a demonstrated capacity to perform a broad range of engineering services, spanning from pre-feasibility studies to detail design, increases the chances to receive an EPCM contract

In addition to the success factors related to engineering services, the EPCM industry also includes the KSFs pertaining to construction of power transmission facilities. In a recent study on Transmission Lines, which are the installations with the highest footprint and impact on environment among all other power transmission assets, IBIS World<sup>43</sup> had determined a similar set of KSFs related to construction services. Although the study is focused on American market, the four KSFs are equally valid to Alberta:

- Ability to compete on tender
- Ability to adopt new technology
- Ability to provide goods/services in diverse locations

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<sup>43</sup> IBIS World Industry Report – Transmission Line Construction in the US, March 2011

- Having a good reputation – specifically reputation for quality workmanship and timeliness is essential for securing ongoing contracts and referrals

Comparing the two sets of KSFs, it can be noticed that the first three factors are very similar for the two types of services, while others are distinguished by specific dimensions. Good reputation is being measured in construction services by quality and timeliness.

Consolidated, the KSF's for engineering and construction services for EPCM industry are presented in a tabular format below:

Table 2.3.2 - Industry's Key Success Factors

EPCM Power Transmission Industry Key Success Factors	
1	Track records & good reputation
2	Diversified client base
3	Timeliness
4	Ability to adopt new technology
5	Quality
6	Ability to compete on tender
7	Health, Safety and Environmental Compliance
8	Access to highly skilled workforce

The EPCM industry KSFs have different degree of importance and, in determining their ranking, it is important to identify first the client industry, (e.g. utilities and major utilities) own KSFs. Based on industry reports, power utilities have several KSFs. In a recent study of Global Power Utilities, Roland Berger Strategy Consultants<sup>44</sup> identified the elements listed below as some of the most important KSFs for the Client

<sup>44</sup> Roland Berger Strategy Consultants - *Global Power Utilities Study 2011- Trends and Strategies*, April 2011, [http://www.rolandberger.us/media/pdf/Roland\\_Berger\\_GlobalUtilitiesStudyBrief\\_20110422.pdf](http://www.rolandberger.us/media/pdf/Roland_Berger_GlobalUtilitiesStudyBrief_20110422.pdf)

Industry. These success factors stem from a broad power utility perspective and provide valuable determinants to be taken into consideration for power transmission utility segment:

- Active asset portfolio management – translated into increased asset utilization (improved ROA driven by products higher reliability and availability)
- Strategic growth - ability to capture a larger market share by selecting offers that require shorter time for physical implementation
- Operational excellence - achieve cost reduction through low maintenance costs and efficiency by acquiring high quality and reliable products
- Innovation –encouraging the acquisition of services and products based on latest and tested technological developments: smart grids, automated load transfer systems, smaller footprint direct current transmission lines etc.

In a recent report focused on power transmission, control and distribution<sup>45</sup>, IBIS

World determined another relevant set of important KSFs for the Client Industry:

- Ability to pass on cost increases – specific to Alberta, electric utilities purchase electricity at prices set by the market; the retail price caps limit the extent to which cost increases can be recovered
- Ensuring pricing policy is appropriate – the maximum retail prices are set by the Alberta Utilities Commission (AUC)

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<sup>45</sup> IBIS World Industry Report –Electric Power Transmission, Control & Distribution in the US, April 2011

- Ability to negotiate successfully with regulator – industry regulation is intense and utilities’ performance is contingent to their ability to ensure the appropriate regulatory decision prevail
- Superior financial management and debt management – the amount borrowed and corresponding interest rates has a major impact on the profitability of operations

The major KSFs for Client Industry as identified can provide an understanding of the position of ATP’s (Firm’s) KSFs vis-a-vis EPCM Industry’s (Industry’s) KSFs and determine Firm’s KSFs congruence with Client Industry’s KSFs. Some of the most representative Client Industry KSFs can be summarized as below:

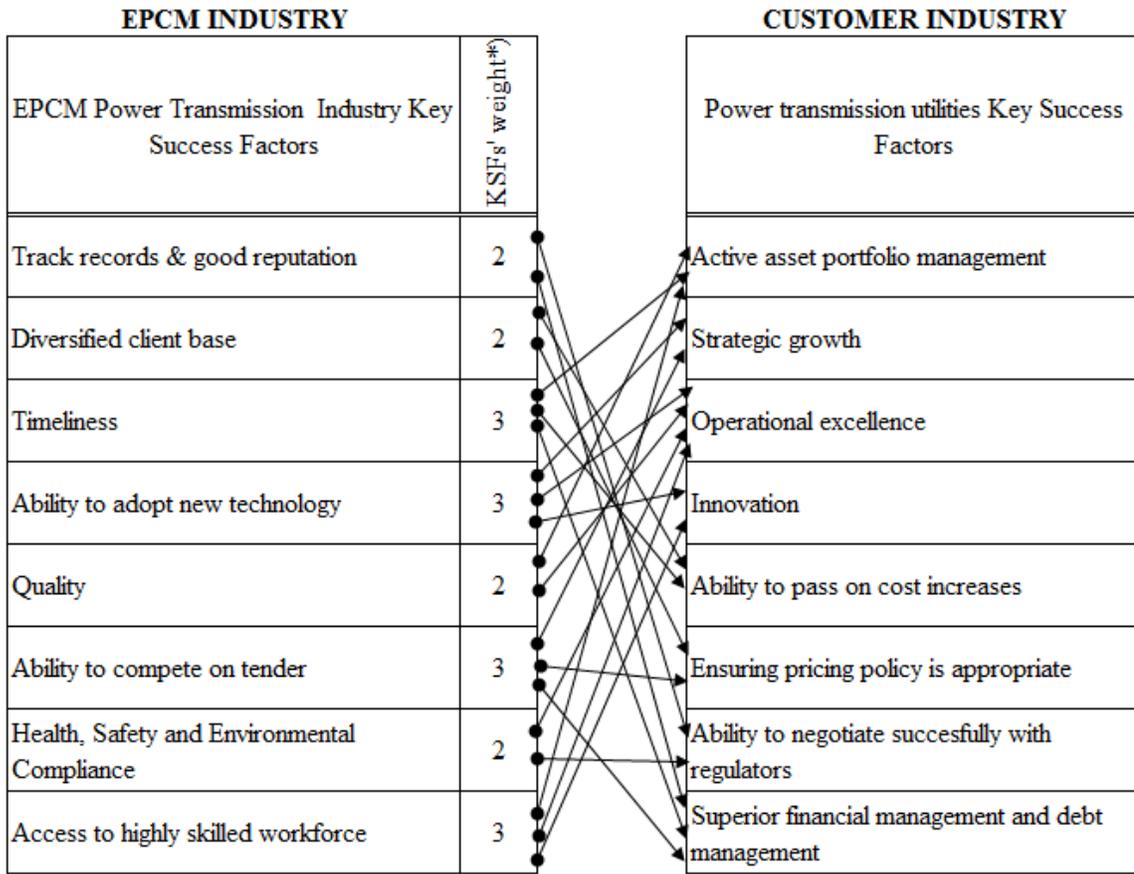
Table 2.3.3 - Client Industry Key Success Factors

Power Utilities Key Success Factors	
1	Active asset portfolio management
2	Strategic growth
3	Operational excellence
4	Innovation
5	Ability to pass on cost increases
6	Ensuring pricing policy is appropriate
7	Ability to negotiate successfully with regulators
8	Superior financial management and debt management

Having selected the eight KSFs for Client Industry, ranking the EPCM industry KSFs can now be decided by examining the links between the two industries. The EPCM industry KSFs addressing the greatest number of Client’s KSFs will be the most important ones. For example, “access to highly skilled workforce” is simultaneously targeting three of the Client’s KSFs: “active asset portfolio management”, “operational excellence” and

“innovation”. Similarly, and then in descending order, all EPCM Industry KFSs can be rated (see Figure 12).

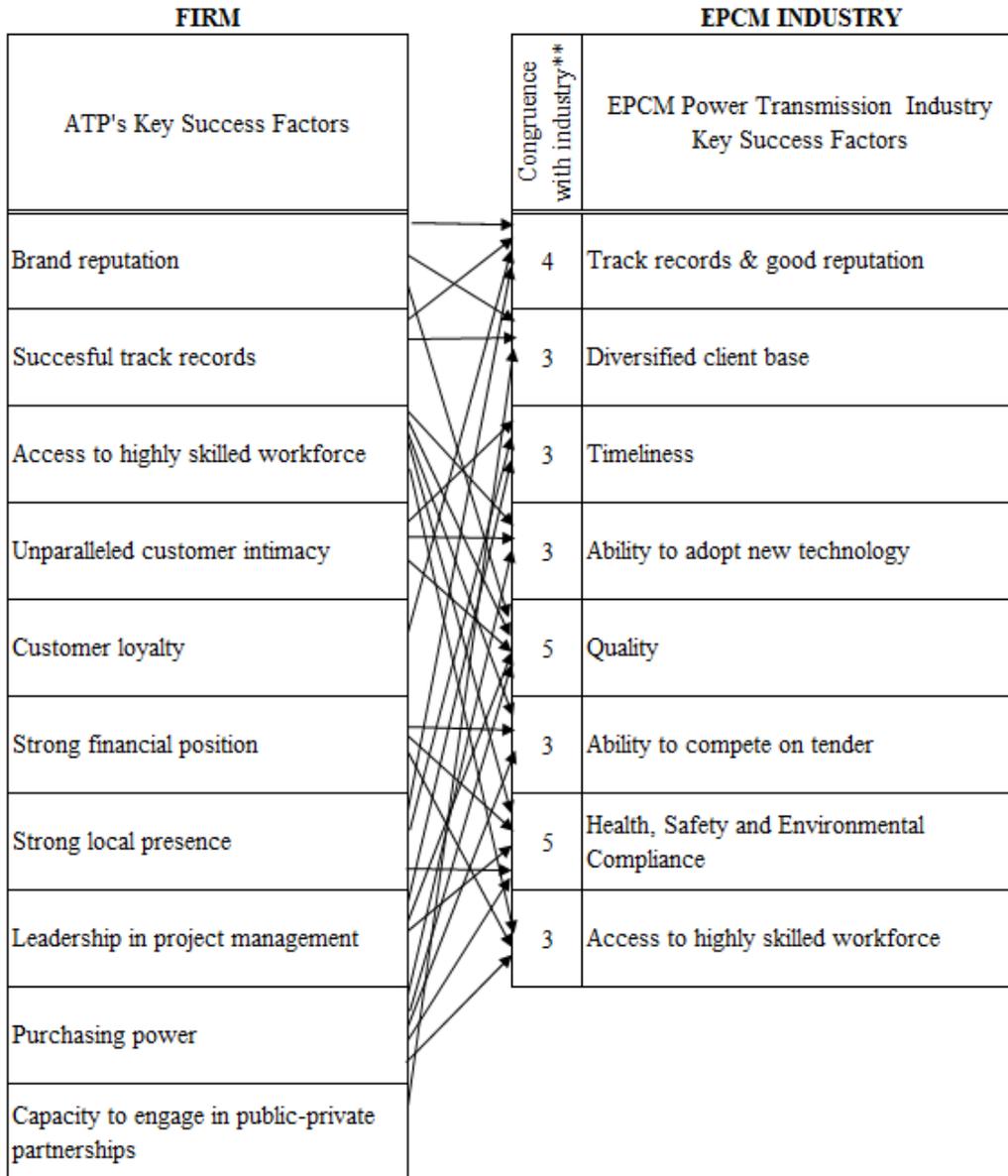
Figure 12 - Ranking of EPCM Industry KFSs



\*) Weight based on number of links between Industry's KSF to Customer's KSF (number of arrow tails per Industry KSF)

Following the same approach, the congruence between firm's KFSs and Industry's KFSs can be assessed by examining the links between the two sets of success factors: the higher the number of firm's KFSs supporting Industry's KFSs, the greater the firm's strategic alignment with the Industry (see Figure 13).

Figure 13 - ATP's KSFs congruence with EPCM Industry's KSFs



\*\*\*) Congruence based on the number of links between Firm's KSF and Industry's KSF  
(number of arrow heads per Industry KSF)

The consolidated image depicting Firm's, Industry's and Client's Key Success Factors strategic congruence is presented in Appendix C.

By multiplying the degree of congruence with Industry’s KSFs corresponding rating, a scoring table can be developed for each of the major competitors. A specific example, using ATP’s values, is presented below in Table 2.3.4.

Table 2.3.4 - ATP’s KSFs competitive alignment with EPCM Industry and Client Industry

ATP's congruence with industry	EPCM Power Transmission Industry Key Success Factors	KSF's weight	ATP's score
(a)	(b)	(c)	(d) = (a) * (c)
3	Ability to compete on tender	3	9
3	Access to highly skilled workforce	3	9
3	Timeliness	3	9
3	Ability to adopt new technology	3	9
4	Track records & good reputation	2	8
3	Diversified client base	2	6
5	Quality	2	10
5	Health, Safety and Environmental Compliance	2	10

## 2.4 Competitive Analysis

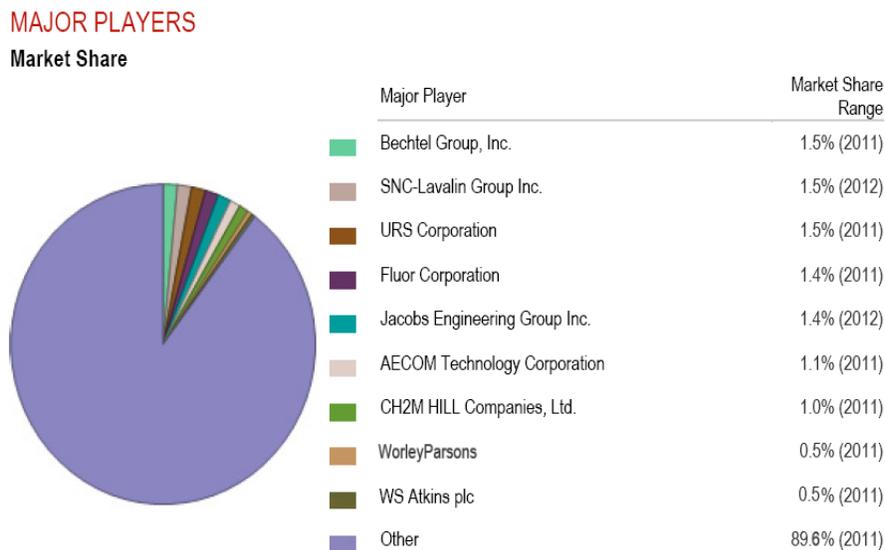
The competitive analysis presents the competitive environment for EPCM Industry, and it compares ATP against the major players based on the Industry KSFs determined in the previous section and summarized in Table 2.3.4. This analysis identifies the opportunities - dimensions where ATP is outperforming its competitors and the threats – areas where the competition is performing better than ATP.

## 2.4.1 Main Competitors

### 2.4.1.1 Global Engineering Companies

Reputable engineering firms with well-established worldwide presence represent the first category. Characteristic of these knowledge-based companies is the presence of a highly skilled workforce and technical experts whose importance for success and value is unequivocally reflected into the costs structure. The market share of these companies is presented in Figure 14 below.

Figure 14 - Major players competing in Global Engineering Services Industry<sup>46</sup>



Below is a brief description of the major players<sup>47</sup>:

**Bechtel Group. Inc.** is one of America's largest engineering and construction services companies with offices in the United States, along with international offices in 27 countries. Since 1898, the firm has completed more than 22,000 projects in 140

<sup>46</sup> IBIS World Industry Report – Global Engineering Services, 25 March 2011

<sup>47</sup> IBIS World Industry Report – Global Engineering Services, 25 March 2011

countries. Bechtel recent growth in annual revenues reflects a number of significant government contracts (including multiple contracts associated with Iraq's reconstruction since 2003 worth over \$2.0 billion) and large infrastructure projects. The group recorded \$30.8 billion in revenues in 2009 and it employed about 49,000 people in 2009.

**URS Corporation** is a publicly owned global engineering service organization, which offers a broad range of planning, design, and construction management services. URS has a long history in North America having served in the consortia responsible for Hoover dam, multiple major highway projects and with NASA on space projects. Current URS contracts in North America include construction manager for the reconstruction of the World Trade Center site in New York and a contract for a new 120-megawatt simple-cycle power generation facility in Alberta, Canada. In 2009, the corporation's revenues were \$9.25 billion and it employed approximately 45,000 people.

**Fluor Corporation** operates under five main business groups: Oil and Gas, Industrial and Infrastructure, Government Services, Global Services and Power. In 2009, Fluor added a new business segment to its Power group, which focuses on global renewable energy needs specifically for clients in the solar, wind and biomass sectors. In 2010, the corporation recorded \$20.8 billion in revenues and it employed approximately 37,000 people.

**Jacobs Engineering Group Inc.** provides engineering, design, and construction services to a wide range of industries and markets, including infrastructure programs, petroleum and gas refining, power, chemical and polymers, and technology and manufacturing. The firm has managed an aggressive acquisition and joint venture strategy since the early 1990s with the objective of expanding the firm's local and

international market bases. Jacobs Engineering runs offices in over 20 countries with major operations in North America, the United Kingdom, Europe, India, Australia, and Asia. Group's revenues in 2010 were \$10 billion and it employed approximately 38,500 people.

**CH2M HILL Companies, Ltd.** is a private employee-owned consulting engineering firm and currently operates 200 offices in over 30 countries worldwide. CH2M Hill consulting services include general civil engineering, environmental testing, structures and foundations, corrosion control, energy systems, program management and construction management. In 2009, company recorded \$6.3 billion in revenues and had 23,500 employees.

**WorleyParsons Limited** has achieved spectacular revenue growth since 2001 largely because of acquisitions principally in Canada and the United States. WorleyParsons is a major international energy and resources focusing on hydrocarbons, minerals and metals, and infrastructure. The company generated almost \$5.0 billion in 2010 and employed approximately 32,000 people.

#### **2.4.1.2 Engineering firms aspiring to EPCM status**

Engineering firms with some EPCM capability represent the second category. A representative example of this category is **Stantec**.

**Stantec** provides professional consulting services in planning, engineering, environmental sciences, project management, and project economics for infrastructure and facility projects. Stantec offers services through more than 160 offices in North

America. In 2010, Stantec recorded approximately \$5.8 billion in revenues and employed about 10,500 people.

#### **2.4.1.3 Large construction companies**

The third category is represented by large construction firms striving to include in their value chain engineering and procurement activities. In Alberta, Flint Energy and Quanta Services are the most active contestants, which use their long-standing construction expertise to produce unsophisticated design and purchase traditional materials from well-known vendors.

**Flint Energy Services Ltd.** is a fully integrated upstream and midstream construction and production service provider to the energy and resource industries. With more than 60 locations across North America, Flint plans, fabricates, transports, builds, and maintains major infrastructure projects. In 2010, company's revenues were approximately \$1.8 billion and employed a workforce of 10,000 people.

**Quanta Services** is a provider of specialized contracting services for the electric power, natural gas and pipeline and telecommunication industries. The company provides a comprehensive range of services, including the design, installation, maintenance and repair of virtually every type of infrastructure. The company has major offices in 40 states and employs approximately 14,000 people. In 2010, the company recorded \$3.9 billion in revenues.

The grid presented in Table 2.4.1 below rates ATP against the competition based on the eight Industry KSFs. Overall, compared to the other contestants, ATP has a very strong performance on track records and reputation, and excellent performance quality and on health, safety and environmental records.

The table also illustrates areas where ATP meets, but not exceeds, the competitors' achievements, and in some areas, where the competition's competency is ranked higher than ATP's. The goal of this analysis is to close the gaps on attributes where ATP is being outperformed, while maintaining or enlarging the rift where ATP has the leading position.

Table 2.4.1 - Competitive analysis for the EPCM Industry Key Success Factors

	PERFORMANCE									
	SNC Lavalin	Bechtel Group	URS Corporation	Fluor Corporation	Jacobs Eng. Group	CH2M HILL Corp.	Worley Parsons	Stantec	Flint Energy	Quanta
Ability to compete on tender	3	4	4	3	4	3	3	3	3	3
Access to highly skilled workforce	3	4	3	3	3	3	4	3	3	3
Timeliness	3	3	3	4	3	3	3	3	3	3
Ability to adopt new technology	3	3	3	3	3	3	3	3	3	3
Track records and reputation	4	3	3	3	3	3	3	3	2	3
Diversified client base	3	3	3	3	3	3	3	2	3	3
Quality	5	4	4	3	4	4	4	3	3	3
Health, Safety and Environment	5	4	3	3	3	3	4	3	3	3

Performance:

1- weak; 2- modest; 3- good; 4- very good; 5- excellent

**TOTAL SCORE**

	Importance Rank	Bechtel Group	URS Corporation	Fluor Corporation	Jacobs Eng. Group	CH2M HILL Corp.	Worley Parsons	Stantec	Flint Energy	Quanta	SNC Lavalin ATP
Ability to compete on tender	3	12	12	9	12	9	9	9	9	9	9
Access to highly skilled workforce	3	12	9	9	9	9	12	9	9	9	9
Timeliness	3	9	9	12	9	9	9	9	9	9	9
Ability to adopt new technology	3	9	9	9	9	9	9	9	9	9	9
Track records and reputation	2	6	6	6	6	6	6	6	4	6	8
Diversified client base	2	6	6	6	6	6	6	4	6	6	6
Quality	2	8	8	6	8	8	8	6	6	6	10
Health, Safety and Environment	2	8	6	6	6	6	8	6	6	6	10
Weight:		70	65	63	65	62	67	58	58	60	70

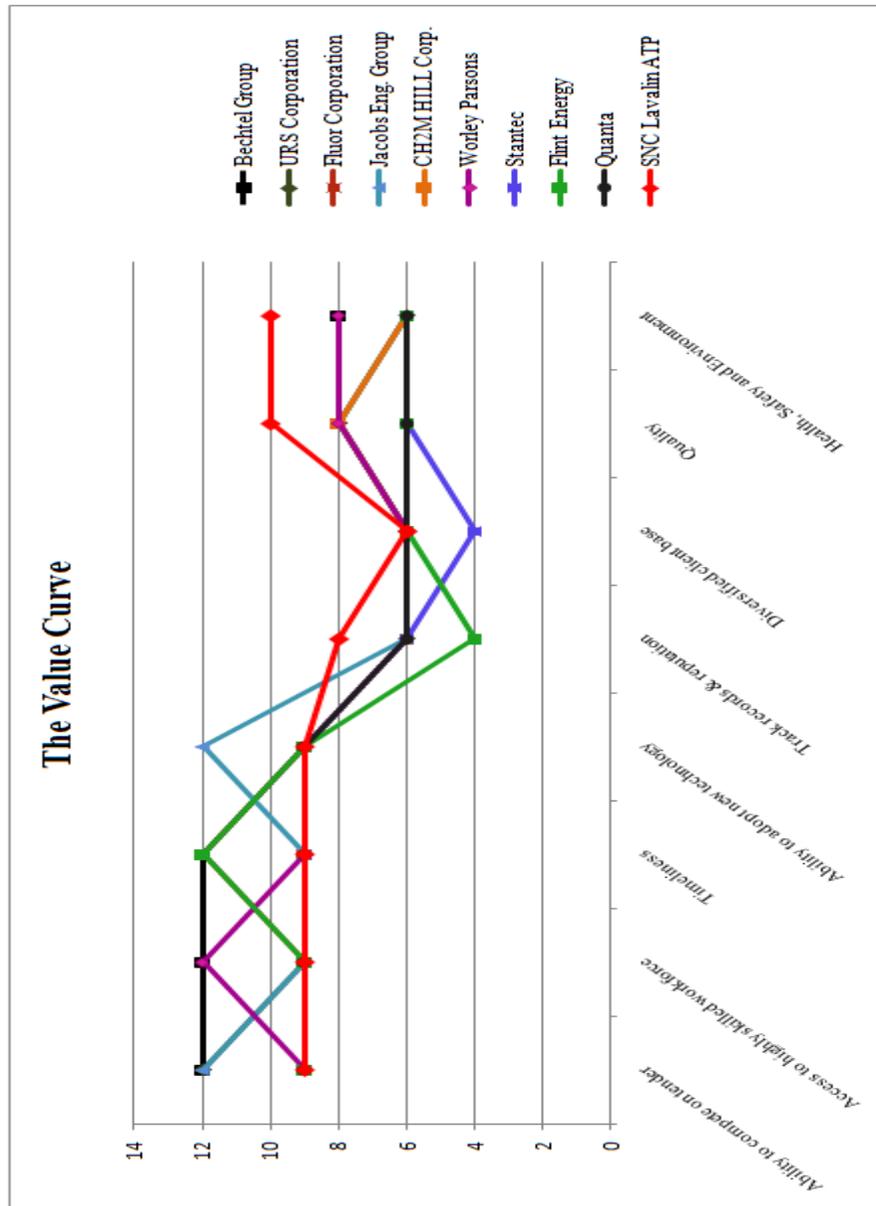
Weight:

3- very important; 2- important; 1- somewhat important

The grid can be also expressed in a graphical format, utilizing the value curve concept (see Figure 15). Value curve is a graphic depiction of a company's relative performance

across its industry's factors of competition<sup>48</sup>. The horizontal axis captures the range of factors the industry competes on and the vertical dimension represents the offering level that customers receive across all key competing factors.

Figure 15 – Value curve analysis



Source:  
 Value Curve - W.Chan Kim, Renee Mauborgne - Blue Ocean Strategy, How to Create Uncontested Market Space and Make Competition Irrelevant  
 Boston, MA- Harvard Business Review Press 2005

<sup>48</sup>W.Chan Kim and Renee Mauborgne. "Blue Ocean Strategy," *Harvard Business Review* (2007)

Value curve presents in a visual format the four attributes on which ATP lags behind its competitors: Ability to compete on tender, Access to highly skilled workforce, Timeliness and Ability to adopt new technology. It also identifies the dimensions where ATP outscores competition: Track records and reputation, Quality and performance on Health, Safety and Environment.

## **2.5 Opportunities**

### **2.5.1 Track records and reputation**

ATP's impressive records in Alberta are second to none. The experience accumulated in very diverse and large projects offers the assurance to any client that the job will be done, despite of numerous constrains usually affecting power transmission. Because of its well-known reputation, ATP is often invited to bid on power transmission projects in all Canadian provinces.

### **2.5.2 Quality**

ATP consistently delivers high quality services and its internal engineering specifications are sometimes more stringent than utility standards. It is usual to have the TFOs upgrading their standards to match ATP's norms, or solicit input from ATP's engineers when reviewing their specifications.

### **2.5.3 Health, Safety and Environment**

Increasingly tougher environmental regulations present a great opportunity for ATP, given the strong in-house expertise complemented by the alliance with SNC Lavalin Environment, another business unit based in Calgary. Combined, the two units

possess probably the best available expertise in Western Canada specialized in environmental management for power line construction. BC Hydro, SaskPower and numerous independent power producers in Alberta and BC are seeking ATP's environmental expertise for their projects. Health and Safety performance is also very good and well-known in Western Canada.

## **2.6 Threats**

### **2.6.1 Ability to compete on tender**

Due to the lack of exposure to a competitive tender process, ATP finds itself lagging behind its competitors on this attribute. The differentiation certainly increases the cost, but another cause of this situation is the shortage of experienced estimators and qualified resources capable to assemble attractive proposals without pricing them outside the market.

### **2.6.2 Access to highly skilled workforce**

ATP has a limited pool of qualified resources in Alberta. This limitation produces also a ripple effect and worsens ATP's timeliness performance, and absorbs more time on routine tasks in detriment of more valuable activities and innovation. This is a very serious threat and, in anticipation of increased future workload, the business unit should strive to address this threat in a structured and long-term sustainable fashion.

### **2.6.3 Timeliness**

The limitation of qualified resources is forcing ATP to overload its most qualified engineers. This situation generates competing priorities among projects and inevitably,

some contracts are being delayed because of lack of qualified personnel. Addressing the shortage of qualified resources should implicitly alleviate the threat of falling behind on timeliness.

#### **2.6.4 Ability to adopt new technology**

The adoption of new technology is demanded by utilities, as this represents one of their KSF as well. This threat could be mitigated by the availability of sufficient and highly qualified resources, capable to assess the benefits and applicability of technological advancements or generate internally innovative ideas to improve current performance.

### **2.7 Strategic Recommendations**

#### **2.7.1 Creation of high performing inter-disciplinary project delivery teams**

Strategic Alternative #1 enhances ATP's **Ability to compete on tender** by improving competitiveness through high performance and efficiency; also, these teams comprising in highly skilled professionals should significantly boost the firm **Capability to adopt new technologies**.

It is proposed the creation of a couple of "self-sufficient" teams consisting in outstanding professionals, each of them expert in a discipline or area of knowledge: engineering, material procurement, contracts, construction and project management. The teams should be fully capable to deliver successfully and highly efficient the most difficult and challenging projects, or, if needed, take over and rescue any project in trouble. The team members are exceptional individuals, highly inspirational to the other

employees aiming to become one day members of one of the “star teams”, and conversely the aspirants should work hard to earn the right to be part of one of these teams.

### **2.7.2 Post-acquisition integration team**

Strategic Alternative #2 addresses **Ability to compete on tender** and **Access to highly skilled workforce** concerns.

SNC Lavalin ATP recently acquired Marte Engenharia, a reputable engineering firm from Brazil. Marte Engenharia, established in 1988 and with over 900 regular employees, has a leadership position in the Brazilian power transmission engineering market. However, so far there are no material benefits or synergies in Alberta or in Brazil as a result of this acquisition. The two groups continue to function pretty much in isolation and the integration effort is carried out with modest progress by an understaffed integration coordinator, who operates under the pressure of immediate needs required by the projects in Alberta.

Thus, given the enormous potential of Marte’s specialists for projects in Canada, it is recommended a systematic and long-term approach in order to benefit to the maximum extent possible of this acquisition. Strategic Alternative #2 proposes the establishment of a full-fledged post-acquisition integration team consisting of senior executives and cross-departmental experts, from both entities, ATP and Marte Engenharia, and led by ATP’s Senior Vice President. This team should create the premises of intimate integration of talent and resources of the two businesses, minimizing or, when possible, taking advantage of cultural differences.

### **2.7.3 Acquisition of an engineering firm in India**

Strategic Alternative #3 addresses **Timeliness** and **Access to highly skilled workforce** concerns.

With a similar focus on fast inorganic growth, it is recommended the acquisition of an engineering firm in India, with EPCM capability and a solid portfolio of projects. The rationale for this new acquisition is to have round the clock access to SNC Lavalin centres of excellence worldwide, while taking advantage of talented resources very familiar with English language. By utilizing this unique capability to transfer engineering activities to the opposite time zone and create joint Canadian-Indian teams that can perform round the clock on North & South American projects. In the long-term this acquisition should enable a stronger worldwide presence and allow ATP to expand and capture a global market share.

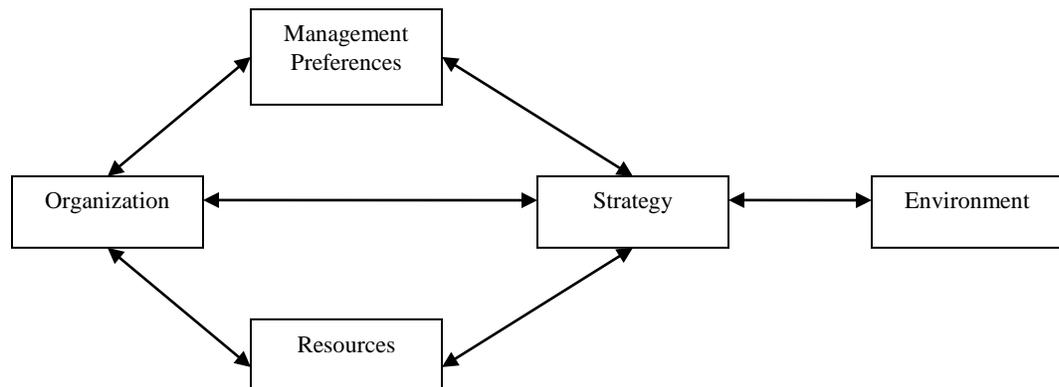
### 3: INTERNAL ANALYSIS AND IMPLEMENTATION

The internal analysis and implementation chapter determines whether ATP's internal capabilities are sufficient, or could be made sufficient to allow the implementation of one or more strategic alternatives identified and proposed in Chapter 2.

#### 3.1 The Diamond-E Framework

In order to evaluate the strategic alternatives presented in Chapter 2, the Diamond-E framework model is used. The model assesses the viability of strategic alternatives stemming from the external environment analysis considering management preferences, organizational capabilities, and internal resources required for effective execution<sup>49</sup>. Diamond – Framework is presented in Figure 16, below.

Figure 16 – The Diamond –E Framework



<sup>49</sup> Crossan, M. Mary, Rouse J. Michael, Fry N. Joseph, Killing J. Peter (2009). Strategic Analysis and Action. Toronto, ON; Pearson Prentice Hall, Seventh Edition.

The Management Preferences analysis determines how well the proposed alternatives are aligned with management objectives, management experience, management team, and leadership. Specifically to this paper, the discussion is limited to key decision makers within ATP, represented by: the Senior Vice President, the Vice President for AltaLink projects, the Vice President of Engineering, the Director of Material Procurement and Construction Contracts, and the Director of Human Resources.

The Organization analysis assesses how well the strategic alternatives fit with the organization's systems, structure, and culture.

The Resource analysis evaluates viability of proposed strategic alternatives considering the operational, human, and financial resources available within the organization.

### **3.2 Assessment of Strategic Alternative #1**

Strategic Alternative #1 recommends the creation of multi-disciplinary project delivery teams, consisting of exceptional individuals, very knowledgeable and capable to successfully deliver complex projects or rescue troubled projects and turn them profitable. Under this alternative ATP continues to hone its differentiation strategy by attracting and internally building strong, highly skilled and efficient human capital, able to quickly understand and adopt new technologies. In the context of changing business environment towards open competition, these highly performing teams should not only increase ATP's ability to compete on tender, but also offer the assurance of project delivery within desired profit margins.

### **3.2.1 Management Preferences**

Management preferences encompass management objectives, management experience, management team, and leadership.

#### **3.2.1.1 Management Objectives**

Under Strategic Alternative # 1 the management team will be faced with a new level of decentralization, where they will have to step back and allow high level of autonomy to project managers. Essentially, the project managers will be responsible for forming, retaining, motivating and managing the delivery teams, while the senior management's role will be to attract and develop top talent, and provide guidance with respect to their best utilization.

Table 3.2 below presents a comparison between required and observed preferences amongst the key decision makers within ATP.

**Table 3.2: Management Objectives Under Strategic Alternative #1**

<b>Management Subject</b>	<b>Required Preferences</b>	<b>Observed Preferences</b>	<b>Major Gaps</b>	<b>Gap-Closing Analysis</b>
Senior Vice President	Step back and support Senior Management in attracting, developing and retaining highly qualified resources.	Predisposition for hands-on management. Desire in developing the organization rapidly, with limited patience for organic growth.	Interest in rapid inorganic growth versus lengthy process of developing high performance teams	Review Senior Vice President position, with potential decrease of his role in growth strategy
Vice President - AltaLink Projects	Interest in sharing highly qualified resources with other projects not related to AltaLink	Propensity toward developing and retaining top talent on AltaLink projects only	Tension within accounts managers	Redistribute the pool of available expert resources and/or make them available to all customers
Vice President - Engineering	Interest in developing best in class expertise in several engineering disciplines	Desire to have extremely well qualified engineers and access to the most performant software and tools.	None	None
Director of Material Procurement and Construction Contracts	Step back and allow purchasing groups to operate more independent and on project need basis	Preference to maintaining a close control over current purchasing practices and procedures	Interest in maintaining the current practices using corporate purchasing power versus fragmentation on project procurement	Redefine the role of Director of Procurement by reducing his authority over Project Procurement Managers
Director of HR	Interest in attracting and retaining highly qualified resources. Develop a new compensation system incenting top performers.	Preference in utilizing available and limited expertise local labor pool; gradually bringing staff up to required competency level over a reasonable period of time.	Attracting the scarce top talented individuals in an undersupplied market would be extremely challenging. Current difficulties in finding qualified resources already place a lot of pressure on HR Director.	Reduce the role of Director of HR. Redefine the recruiting process, actively look to other markets and outsource this HR function.

### **3.2.1.1.1 Gaps in Management Objectives**

Based on personal observations and through interviews with the Senior Vice President, the Director of Procurement and the Director of HR, there are significant gaps between the management preferences and the required preferences in order to have this strategic alternative implemented. As presented in Table 3.2, bridging the gaps will require an important reduction of senior management involvement in daily and short-term operations, and a diminished clout over company's growth strategy.

That said, all of the executives interviewed indicated their agreement about the imperative need of bringing onboard highly skilled personnel capable to improve ATP's capability to compete on tender, foster innovation and shorten project delivery time.

### **3.2.1.1.2 Suggested Gap-Bridging Solution**

Closing these major gaps may require significant changes to the senior management team, including the review of the Senior Vice President, Director of Procurement, and Director of HR roles. This strategic alternative also reduces the collaborative nature of the work amongst the Vice President for AltaLink projects and the account managers responsible for other clients. The management team is likely to decline to go in this direction because, with the exception of the Vice President for Engineering, all the key decision-makers are against this kind of proposal.

## **3.2.2 Summary of assessment**

Because the management team is very unlikely to move forward with this alternative, pursuing this strategic alternative will not be considered any further<sup>50</sup>.

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<sup>50</sup> Crossan, M. Mary, Rouse J. Michael, Fry N. Joseph, Killing J. Peter (2009). Strategic Analysis and Action. Toronto, ON; Pearson Prentice Hall, Seventh Edition.

### **3.3 Assessment of Strategic Alternative #2**

Strategic Alternative #2 is also addressing the need of highly qualified resources, capable to improve the company's ability to compete on tender and improve delivery schedule on complex development projects. ATP recently acquired Marte Engenharia, Brazil's #1 power transmission engineering company, with approximately 60% market share. The rationale for this acquisition was to penetrate into the booming Brazilian market by combining Marte's solid reputation and client base with SNC Lavalin ATP's experience on EPC projects. In parallel, Marte's 900 experienced power transmission engineers and technologists were deemed very valuable for strengthening the in-house expertise for 240kV and 500kV projects in Alberta. Despite this robust business case, after almost a year, the results are quite modest and the expected synergy arising from this acquisition is still to materialize. Strategic Alternative #2 recommends the establishment of a post-acquisition integration team, consisting where possible of matched pairs of executives from the same functions in each company, striving to learn from each other and combine the best of both businesses.

### **3.3.1 Management Preferences**

#### **3.3.1.1 Management Objectives**

In Strategic Alternative #2, the management team will have to work closely together and with Marte's counterparts, acting like welcoming hosts and eager learners<sup>51</sup>, to allay fears that ATP's team had arrived to supplant Marte's management. It will require a concerted effort to retain, integrate and motivate talented employees, who will work quickly and smoothly, innovate and adapt to emergent trends. In this paper, the analysis will be limited to ATP's part of the team and, unless otherwise stated, the Brazilian members are considered matching the required preferences.

Table 3.3 below summarizes the comparison between required and observed preferences related to the key decision makers of ATP.

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<sup>51</sup> Rosabeth Moss Kanter, "Mergers That Stick" – Harvard Business Review, October 2009

**Table 3.3: Management Objectives Under Strategic Alternative #2**

<b>Management Subject</b>	<b>Required Preferences</b>	<b>Observed Preferences</b>	<b>Major Gaps</b>	<b>Gap-Closing Analysis</b>
Senior Vice President	Interests in making Marte's acquisition successful and growing rapidly ATP's accessible pool of talent	Match with required preferences	None	None
Vice President - AltaLink Projects	Interest in sharing project experience with Marte and integrate Marte's talent in AltaLink projects	Desire to attract talented and experienced engineers and specialists to AltaLink projects; Limited availability for meeting and sharing expertise with others	No major gaps, although systematic contact and information sharing with Marte is imperative	Redesign the structure reporting to Vice President - AltaLink Projects to free-up some of his time for interacting with Marte's management
Vice President - Engineering	Interest in working together with Marte's counterpart for sharing engineering expertise and level the resource load	Interest in acquiring and developing expertise for 500kV projects, commonly build in Brazil, but not yet constructed in Alberta	None	None
Director of Material Procurement and Construction Contracts	Interests in working together with Marte to share and utilize ATP's procurement and construction capabilities on new EPC projects in Brazil	Natural inclination towards training and explaining others ATP's processes and procedures	None	None
Director of HR	Interest in integrating Marte's resources into ATP's pool, by overcoming cultural barriers and alignment of various systems (timesheet systems, employee compensation structure and benefits, etc.)	Marte is now an ATP entity and its resources are part of SNC Lavalin group. Although different than traditional labour pool, attracting the required talent to Alberta projects from Brazil is significantly easier than sourcing resources from unknown markets	None	None

#### **3.3.1.1.1 Gaps in Management Objectives**

There are no major gaps, and most of the required preferences in management objectives match with the observed ones. Broadly speaking, there is a general desire to accelerate the integration of the newly acquired unit; the only constraint that impedes the management team to hasten this process is the availability of time. From this perspective, the current extremely busy schedule of the Vice President for AltaLink projects is significantly affecting his willingness to hold additional meetings or travel to other SNC Lavalin entities, share ATP's expertise, and discuss opportunities for resource sharing and knowledge transfer. The other members of the management team seem to have lesser time limitations to actively participate and support the integration, largely due to better hierarchical reporting structures beneath them.

#### **3.3.1.1.2 Suggested Gap-Bridging Solution**

To ensure the participation of the Vice President for AltaLink projects at the collective effort of post-acquisition integration, the current reporting hierarchy should be revised in the sense of creating a sustainable structure capable to oversee efficiently the projects in Alberta. A geographical separation of the province, taking into account also the size of the projects and appointment of a few area directors is necessary so that the Vice President for AltaLink projects will have the required time to focus on integration. The proposed change will be presented in detail under the Management Team subsection.

#### **3.3.1.2 Management Experience**

Strategic Alternative #2 will require a Senior Vice President able to direct a multi-cultural integration team, spanning across two countries and comprising of experts in operations, engineering, procurement, construction, finance and human resources. The

management team will require strong understanding of the local market, experience in cross-departmental cooperation and knowledge about alignment and integration of businesses. Combined, the team should be able to successfully address the major areas of integration: organizational structure, infrastructure, the software (including standards, systems, procedures, knowledge) and, most important, people.

Table 3.4 below illustrates the required experience in contrast with observed knowledge.

**Table 3.4: Management Experience Under Strategic Alternative #2**

Management Subject	Required Experience	Observed Experience	Major Gaps	Gap-Closing Analysis
Senior Vice President	Lead a multi-discipline and multi-cultural integration team ; Strong knowledge of local market	Match with required experience; Limited experience with Brazilian market	No major gaps, but his limited experience in South American markets will require strong local insight	Assign a local senior manager to work together with the Senior VP
Vice President - AltaLink Projects	Project development process and required resources and qualifications; Previous integration experience	Match with required experience	None	None
Vice President - Engineering	Integration and alignment of software, standards, systems and engineering knowledge	Extensive international experience, including Brazil; previous participation in integration teams	None	None
Director of Material Procurement and Construction Contracts	Intimate knowledge of procurement processes; Previous integration experience; Familiarity with local market	Match with required experience	None	None
Director of HR	Integration of office infrastructure and integration of people; Strong understanding of local market	Match with required experience; Limited experience with Brazilian market	No major gaps, but his limited experience in South American markets will require local input and guidance	Employ an experienced local HR consultant familiar with North American business culture

#### **3.3.1.2.1 Gaps in Management Experience**

Most of the required preferences in management experience match with the observed preferences. The significant area of expertise missing is strong knowledge of local market. Having a very good understanding of Brazilian market and culture is imperative for successful integration of Marte's resources into ATP's pool. Any attempt to impose decisions or changes from a "conqueror" position could trigger a massive defection of the most talented individuals and leave ATP at the end with an "empty shell".

In the past, the management team had occasionally travelled to Brazil to meet with Marte, and there was only a sporadic endeavour to acquire some knowledge of local market. It will require a more formal approach to ensure the executives have a thorough understanding of Marte's full potential, the way the company operates, the local culture and market conditions.

#### **3.3.1.2.2 Suggested Gap-Bridging Solution**

In order to address the Senior Vice President's limited knowledge of the Brazilian market, an experienced local person should work closely with the Senior Vice President to provide him strong insight and recommendations. The ideal candidate for this role is Marte's Vice President of Operations, who was instrumental during the acquisition process, had travelled extensively to Canada to meet ATP executives and has a good understanding of SNC Lavalin's structure and culture. There is no material cost associated with this appointment other than few extra travel expenses, estimated at about \$10K per year.

On the people side, the HR Director will require an experienced local person, also familiar with the North American culture. There are no such candidates within Marte's HR department and trying to grow this competence in-house it will take too long to use it for this strategic alternative. A practical option is to employ a local HR consultant to work closely with ATP's Director and jointly design a program to gradually melt the cultural barriers, foster direct communication between ATP and Marte's employees and encourage their participation on projects in Alberta. The estimated cost for this type of consultant is somewhere between \$30K and \$45K per year.

#### **3.3.1.3 Management Team**

Strategic Alternative #2 will require a high-performing management team, working together in a collaborative manner. The Senior Vice President should have a strong ability to lead the team, and capable to accept constructive criticism. The team itself will need to be very synergetic and have a very good relationship with the Senior Vice President and Brazilian counterpart.

Table 3.5 summarizes the comparison between required and observed preferences.

**Table 3.5: Management Team Under Strategic Alternative #2**

Management Subject	Required Competence/Capability	Observed Competence/Capability	Major Gaps	Gap-Closing Analysis
Senior Vice President	Ability to lead the team through collaborative engagement and accept constructive critique	Match with required preferences	None	None
Vice President - AltaLink Projects	Capability to work together with others and provide high value contribution to integration effort	Match with required preferences; Current time limitation is an issue	Availability to meet with the team is seriously hindered by time limitation due to workload and lack of adequate subordinate structure	Assign new regional directors reporting to VP AltaLink Projects: Mega North, Mega South and Smaller size Projects
Vice President - Engineering	Capability to work together with others and provide high value contribution to integration effort	Match with required preferences	None	None
Director of Material Procurement and Construction Contracts	Capability to work together with others and provide high value contribution to integration effort	Match with required preferences	None	None
Director of HR	Capability to work together with others and provide high value contribution to integration effort	Match with required preferences	None	None

**3.3.1.3.1 Gaps in Management Team**

Most of the required preferences under the management team’s assessment match with those observed. The only issue of concern is the current time limitation of Vice President AltaLink Projects. His current commitments and workload significantly affects his ability to contribute to the integration effort. The potential impact of Marte’s highly qualified workforce on Alberta projects is so important, that it is crucial to have him available to participate to the integration to the most possible extend.

**3.3.1.3.2 Suggested Gap-Bridging Solution**

In order to bridge this particular gap, it is recommended to appoint two regional directors covering the very large or “mega” projects geographically, in Southern and

Northern Alberta, and a third director responsible for smaller size project across the entire province. The three directors will allow the Vice President AltaLink Projects to oversee effectively a large number of projects distributed over the province and assist him to free up some valuable time required for integration. Moreover, this structure will mirror the existing AltaLink organization and enable direct communication between counterparts. Currently, within ATP, there are a couple of project managers qualified to perform the job of regional directors. The combined incremental increase of their compensation for the new positions is estimated is estimated to approximately \$50K per year.

#### **3.3.1.4 Leadership**

In Strategic Alternative #2, the entire management team needs to have a strong sense of confidence. To succeed it is required to have a determined and persuasive Senior Vice President, capable to lead the team with integrity, and inspire trust and loyalty. The team members need to trust each other, strongly believe in their capability and expertise, and trust in the Senior Vice President's ability to lead the team.

Table 3.6 below presents the summary of required preferences versus observed preferences.

**Table 3.6: Leadership Under Strategic Alternative #2**

<b>Management Subject</b>	<b>Required Competence/Capability</b>	<b>Observed Competence/Capability</b>	<b>Major Gaps</b>	<b>Gap-Closing Analysis</b>
Senior Vice President	Determination, integrity, vision, persuasion and confidence in ability to lead the team	Match with required experience	None	None
Vice President - AltaLink Projects	Confidence in Senior VP leadership and trust in team members abilities to successfully complete the integration	Match with required experience	None	None
Vice President - Engineering	Confidence in Senior VP leadership and trust in team members abilities to successfully complete the integration	Match with required experience	None	None
Director of Material Procurement and Construction Contracts	Confidence in Senior VP leadership and trust in team members abilities to successfully complete the integration	Match with required experience	None	None
Director of HR	Confidence in Senior VP leadership and trust in team members abilities to successfully complete the integration	Match with required experience	None	None

**3.3.1.4.1 Gaps in Leadership**

All the required preferences match those observed. The senior management team is confident in the Senior Vice President’s capability to lead successfully the group. Conversely, the Senior Vice President trusts the team and performs well in his role of the ultimate decision maker. No gaps in leadership are identified at this time.

### 3.3.1.5 Management Preference Summary

The analysis of the Management Preferences indicated three gaps and recommended solutions to surmount them to make Strategic Alternative #2 successful:

- Assign Marte’s Vice President of Operations to work together with ATP’s Senior Vice President and alleviate his limited experience with the Brazilian market
- Appoint three project directors for AltaLink projects to create time for the Vice President AltaLink Project to contribute actively to the integration effort
- Employ a local HR consultant to complement ATP’s Director of HR insufficient knowledge of Brazilian culture and labour market.

Table 3.7 below presents the suggested recommendations to bridge these three gaps.

**Table 3.7: Summary of Management Preference Gaps and Suggested Solutions for Strategic Alternative #2**

	<b>Gap</b>	<b>Suggested Solution</b>	<b>Estimated Costs</b>
1	Senior Vice President limited experience with Brazilian market	Assign Marte's Vice President of Operations to work together with the Senior VP	\$10K per year
2	Create time for Vice President AltaLink Projects	Appoint three new regional directors reporting to VP AltaLink Projects: Mega North, Mega South and Small Size Projects	\$50K per year
3	Director of HR insufficient understanding of Brazilian culture	Employ an experienced local HR consultant familiar with North American business culture	\$30K to \$45K per year

### 3.3.2 Organization

Organizational capabilities include internal systems, structure and culture. The fitness of each of these three components with the proposed Strategic Alternative #2 will

be analysed in turn and determine which organizational changes would be required to implement the proposal.

### **3.3.2.1 Systems**

The existing ATP's systems are fully capable to support the post- acquisition integration effort. The PM+ corporate software has Enterprise Resource Planning (EPR) capability and allows project teams to operate simultaneously in multiple locations. The current projects in Alberta are utilizing this feature to a large extent and information sharing is done either through corporate servers residing in Montreal and Paris or through a secure File Transfer Protocol (FTP) site hosted by Google. In addition, ATP's teams are regularly using web conferencing and on line meetings video conference calls.

While the existing infrastructure in Canada has the required capability to handle a larger number of projects and geographically dispersed teams, the system in Brazil is lagging behind in terms of performance and speed. In parallel, the outdated infrastructure issue is aggravated by the lack of formal professional training at Marte. The employees occasionally attend training sessions or take speciality courses, but usually this happens on the ad-hoc basis, rather than because of a training and professional development plan.

Table 3.8 below summarizes the comparison between required and existing organizational capabilities pertaining to internal systems.

**Table 3.8: Systems Under Strategic Alternative #2**

<b>Required Organizational Capabilities</b>	<b>Existing Organizational Capabilities</b>	<b>Capability Gaps</b>	<b>Actions to Close Gaps</b>
IT infrastructure capable to sustain an increase flow of information and data exchange at ATP and Marte's offices	Only ATP has all required IT infrastructure in place	Insufficient and outdated infrastructure at Marte's offices	Acquire new work stations and servers for Marte. Install corporate PM+ software and data repository on Marte's stations.
Training programs to ensure good understanding and utilization to full potential of new hardware and software	Formal training is available only at ATP	No training currently available at Marte	Set up a formal bilingual, English and Portuguese, training program for Marte employees

**3.3.2.1.1 Gaps in Systems**

Currently, only ATP meets the required capability. On Marte's side, the existent network does not meet the requirements; it is insufficient in terms of the number of computers, speed and computing power. Moreover, as the integration of infrastructure, software, standards and procedures will require significant training, the present lack of a formal training process at Marte needs immediate attention.

**3.3.2.1.2 Suggested Gap-Bridging Solution**

Having the same version of software and easy access to corporate repository of knowledge and lessons learned is imperative for the success of integration. The first step into this direction will be to overcome the hardware and software gap. A recent estimate made by IT department revealed the need of an investment in infrastructure and software licenses worth approximately \$200K.

In conjunction with hardware and software upgrade, a formal training program will need to be designed and implemented. Training should focus on corporate systems,

software, standards, processes and procedures, and it is recommended to be bilingual, in English and Portuguese. In parallel, and through an incentive system rewarding the top performers on corporate systems training, the company should sponsor evening English language courses and other specialty courses at local colleges and universities. A budgetary estimate of training costs, including the employee salary while attending the sessions, considered by the Senior Vice President and Marte's Vice President of Operations indicated a value of approximately \$150K per year. Certainly, the value will need further refinement, but in the interim, this could be considered a reasonable indicative cost.

### **3.3.2.2 Structure**

As pointed out in the Strategic Fit Grid, even under the current operating conditions in Alberta alone, ATP's bottleneck in project management structure is already causing some problems. The Management Team analysis highlighted the need to create time for the Vice President of AltaLink Projects in order to allow him to have active participation in the integration team. Solving this issue should be given top priority.

Once the availability of senior executives is resolved, the integration effort will be divided into several sub-activities, each of them related to an area of expertise. Leading these sub-activities will be the responsibility of corresponding senior managers from both units. For example, the Vice President of Engineering will work with Marte's Director of Engineering and, together with a group of specialists from both units, devise a detailed plan addressing engineering aspects of integration. The Director of Procurement and HR Director will follow a similar collaborative approach with their counterparts in their respective areas of expertise.

Table 3.9 below shows the differences between required and observed organizational capabilities.

**Table 3.9: Structure Under Strategic Alternative #2**

<b>Required Organizational Capabilities</b>	<b>Existing Organizational Capabilities</b>	<b>Capability Gaps</b>	<b>Actions to Close Gaps</b>
An effective hierarchical reporting structure under VP of AltaLink Projects, allowing him to delegate some of his workload and free up some time for integration	VP of AltaLink Projects oversees over 25 project managers working all across Alberta, and practically has no time available for integration	Inadequate reporting structure under VP of AltaLink Projects	Appoint three new regional directors reporting to VP AltaLink Projects: Mega North, Mega South and Small Size Projects
Knowledge area groups, led by senior managers from both companies	Currently only ATP executives are managing the area groups	No engagement of Marte's executives in specialty groups	Establish a joint management structure ATP - Marte to ensure cohesion in action and early buy-in; Ensure participation of experts from both organizations

**3.3.2.2.1 Gaps in Structure**

The current inefficient hierarchical structure under the Vice President AltaLink Projects is impeding him to participate in Marte’s integration. This situation has been identified first in the Management Preferences section and is reoccurring under the Organizational Capabilities.

So far, mainly ATP’s management carried out the integration effort and there was little engagement of Marte’s executives. This proved to be not only counterproductive, but also generated confusion about Marte’s management future role. Due to the lack of clear direction, few of Marte’s executives left the company and there is an increasing number contemplating doing the same.

#### **3.3.2.2.2 Suggested Gap-Bridging Solutions**

In Alberta, it is recommended a new reporting structure for AltaLink projects, specifically the assignment of three new directors with precise regional and project size responsibilities.

The integration team also requires a formal, yet decentralized, structure. Once the area-specific groups are defined, they should be given a fairly large degree of independence, being allowed to bring into their team subject matter experts from both companies and together formulate the best course of action. Occasionally, they may require the assistance of specialists from SNC Lavalin's head office to help overcome system limitation or work around incompatibilities. This direct interaction with the experts should happen at a group level and should not be elevated to higher echelons unless a predetermined budget is exceeded, or the integration schedule is affected, or the other groups are impacted. A budgetary estimate of the costs required by the head office experts produced by the Senior Vice President and Marte's Vice President of Operations had indicated a yearly amount of approximately \$50K.

To ensure the harmonization between the sub-tasks groups and to make certain that the deadlines are being met, the team will report to ATP's Senior Vice President, who will be assisted by Marte's VP of Operations.

#### **3.3.2.3 Organization Culture**

To make Strategic Alternative #2 successful, the two units, ATP and Marte, should work collaboratively to identify the best of both companies and have a bi-directional transfer of knowledge and practices. At no moment, ATP should be perceived as a "conqueror" or attempt to impose decisions from a dominant position, without

consulting and seeking input from Marte’s executives. It is of paramount importance to foster a culture of regard and collaboration to ensure talent retention and smooth integration of Brazilian employees in the new environment. Conversely, the cultural differences between Canadians and Brazilians in communication styles, display of emotions, punctuality and formality should be noted, understood and taken into account in the regular meetings, brainstorming sessions, as well in team building gatherings, informal communications, etc.

Table 3.10 below summarizes the differences between required and observed organizational capabilities.

**Table 3.10: Organizational Culture Under Strategic Alternative #2**

<b>Required Organizational Capabilities</b>	<b>Existing Organizational Capabilities</b>	<b>Capability Gaps</b>	<b>Actions to Close Gaps</b>
High degree of regard and collaboration for the benefit of the business as a whole	Some collaboration at the senior management level; Tendency to impose ATP's business practices and work	Insufficient consultation with Marte executives and formal inclusion of their input in current integration strategy	Establish a set of terms of references to assist senior management team in working collaboratively
ATP's executives should have a good understanding of Brazilian culture and customs	Some sporadic understanding acquired during short business trips to Brazil	Limited understanding of Brazilian culture	Enroll ATP's representatives in classes about Brazilian culture
Marte's executives should have a good understanding of Canadian culture and customs	Very seldom Brazilian executives travel to Canada and hence they rely on second hand information about Canadian culture and customs	Almost no previous direct interaction with Canadian culture	Enroll Marte's representatives in classes about Canadian culture; Alternate team meetings in Brazil and Canada to hasten executive's understanding of local cultures

#### **3.3.2.3.1 Gaps in Organizational Culture**

While in general the executives enjoy working together, the integration related discussions usually follow agendas developed by ATP with little prior consultation or input from Brazilian counterpart. Not always everyone is on the same page when it comes to what should and should not be discussed in the conference calls and the level of detail required to properly addressing the topics.

At the moment, neither ATP's executives, nor Marte's management have a strong understanding of each other's local culture. With the exception of the Director of Procurement, who is familiar with Brazilian market and to a great extent with Brazilian culture, none of the ATP's executives possesses a good understanding of Brazilian culture and customs. Similarly, there have been only few isolated trips of Marte's Vice President of Operations to Canada, but otherwise none of Marte's executives had travelled to Canada recently.

#### **3.3.2.3.2 Suggested Gap-Bridging Solutions**

In order to improve collaboration among the team members and enhance Marte's representatives' contribution to the integration effort, it is recommended to develop a document outlining the terms of reference on how the team plans to work together, including the description of decision-making process. This document should mitigate the risk of Marte's members not being consulted and fully engaged in the alignment and integration of the two organizations.

Understanding the cultural differences and improving familiarity with local customs will require more direct interaction between the team members. In this light, it is recommended to hold quarterly in-person alternate meetings, in Canada and in Brazil.

SNC Lavalin travel agent had estimated that a budget of \$50K per year would be sufficient to cover the travel and accommodation costs for 5 persons each quarter.

In parallel with direct interaction, it is recommended that representatives from both companies attend formal classes of Brazilian and Canadian history, culture and customs. The cost to support this action is estimated to \$20K per year.

#### **3.3.2.4 Organization Summary**

The analysis of the Organization had revealed six gaps and recommended corresponding solutions in order to make Strategic Alternative #2 successful:

- Upgrade Marte's outdated and insufficient IT infrastructure and software
- Enhance Marte's understanding of SNC Lavalin corporate processes, procedures, standards, tools and software
- Address the inadequate reporting structure under the Vice President for AltaLink Projects – reoccurring issue, identified and treated under Management Preferences
- Engage Marte's representatives in the specialty groups
- Improve direct interaction ATP-Marte and set-up quarterly in person meetings in Canada and Brazil
- Address limited understanding of local cultures by enrolling representatives from ATP and Marte in formal classes about Canada and Brazil's history, culture and customs.

Table 3.11 below presents the suggested recommendations to bridge these six gaps.

**Table 3.11: Summary of Organization Gaps and Suggested Solutions for Strategic Alternative #2**

	<b>Gap</b>	<b>Suggested Solution</b>	<b>Estimated Costs</b>
1	Outdated IT infrastructure in Marte's offices	Improve existing IT infrastructure and acquire necessary software	\$200k one time investment
2	Little understanding of SNC Lavalin corporate processes, standards, tools and software	Establish corporate training programs in Brazil; Sponsor English language and professional development courses in Brazil	\$150K per year
3	Inadequate reporting structure under VP of AltaLink Projects	Appoint three new regional directors reporting to VP AltaLink Projects: Mega North, Mega South and Small Size Projects	Costs considered under Management Preference suggested solutions
4	No engagement of Marte's executives in specialty groups	Establish a joint management structure ATP - Marte to ensure cohesion in action and early buy-in; Ensure participation of experts from both organizations	\$50K per year
5	Insufficient direct interaction and in person meetings	Facilitate direct interaction through quarterly in person meetings, in Canada and in Brazil	\$50K per year
6	Limited understanding of local culture and customs	Enroll ATP and Marte representatives in classes about Brazilian and Canadian history, culture and customs	\$20K per year

### 3.3.3 Resources

Resources matter a great deal because “sustained competitive advantage is based on the acquisition of resources that possess a unique relationship to the external environment and are integrated in innovative ways.”<sup>52</sup>

#### 3.3.3.1 Operational Resources

Operational resources include marketing, operations, development and reputation. The most critical resources for making Strategic Alternative #2 successful are operations and development. From the operations perspective, both units will require strong functional managers at engineering, procurement, construction and project management

<sup>52</sup> W. Jack Duncan, Peter M. Ginter and Linda E. Swayne, “Competitive advantage and internal organizational assessment”, *Academy of Management Executive* Vol. 12, No. 3 (1998): 10.

level. Processes alignment is very important for the companies' integration, but further operational improvements to maintain best practices and adoption of new technologies in the field of power transmission will be crucial for maintaining ATP and Marte's leadership position.

A solid marketing capability will be required to increase ATP and Marte's profile in the utility world and enhance the recognition of their competence in both countries.

Finally, it is necessary to maintain the current strong and positive reputation in Canada and Brazil.

Table 3.12 below summarizes the comparison between required and available operational resources.

**Table 3.12: Organizational Culture Under Strategic Alternative #2**

Required Organizational Capabilities	Existing Organizational Capabilities	Capability Gaps	Actions to Close Gaps
High degree of regard and collaboration for the benefit of the business as a whole	Some collaboration at senior management level; Tendency to impose ATP's business practices and work procedures	Insufficient consultation with Marte's executives and no formal inclusion of their input in current integration strategy	Establish a set of terms of references to assist senior management team in working collaboratively
ATP's executives should have a good understanding of Brazilian culture and customs	Some sporadic understanding acquired during short business trips to Brazil	Limited understanding of Brazilian culture	Enroll ATP's representatives in classes about Brazilian culture
Marte's executives should have a good understanding of Canadian culture and customs	Very seldom Brazilian executives travel to Canada and hence they rely on second hand information about Canadian culture and customs	Almost no previous direct interaction with Canadian culture	Enroll Marte's representatives in classes about Canadian culture; Alternate quarterly team meetings in Brazil and Canada to hasten executive's understanding of local cultures

#### **3.3.3.1.1 Gaps in Operational Resources**

The current insufficient highly qualified resources within ATP to keep up with the growing workload require a rapid attraction of a significant number of talented individuals. In fact, this is the essence of Strategic Alternative #2 and it is not a surprise to see this gap in operational resources under development category. The current gap in project management capability within ATP is re-occurring, and its mere presence here reiterates the importance of this issue. Required marketing expertise and reputation are currently successfully covered.

#### **3.3.3.1.2 Suggested Gap-Bridging Solutions**

As previously mentioned, the project management gap in operations has been addressed in the Management Preferences analysis by suggesting the assignment of three new project directors. To insure immediate inflow of talent into AltaLink projects, it is recommended to develop and bring up to speed 25 top engineers from Marte and engage them in ATP's projects in Alberta within the first six months from the commencement of Strategic Alternative #2. Each of them will have to travel to Calgary and participate at the meeting with the team and the Client. For this purpose, ATP's management is considering a budget of \$100K sufficient to cover the first year.

#### **3.3.3.2 Human Resources**

Strategic Alternative #2 will require a strong senior management team, few new assignments, and a couple of consultants to assist and complement limited familiarity with markets and cultures.

Table 3.13 below presents the summary of required versus available human resources.

**Table 3.13: Human Resources Under Strategic Alternative #2**

Required Resources	Available Resources	Major Gaps	Actions to Close Gaps
Strong and committed senior management team	Matches with required resources	None	None
Senior Vice President experienced with Brazilian market	Senior Vice President has limited experience with Brazilian market	Experience with Brazilian market required	Assign Marte's Vice President of Operations to work together with the Senior VP
Significant participation required from Vice President for AltaLink Projects	Vice President for AltaLink Project insufficiently available	Time required for Vice President AltaLink Projects	Appoint three new regional directors reporting to VP AltaLink Projects: Mega North, Mega South and Small Size Projects
Director of HR with strong understanding of Brazilian culture and labour market	Director of HR has insufficient understanding of Brazilian culture and labour market	Experience with Brazilian culture and labour market required	Employ an experienced local HR consultant familiar with North American business culture
Highly skilled engineers required for ATP's projects in Alberta	Insufficient resources, current Canadian resources are overloaded	Highly skilled engineers are required in Alberta	In the first six months, bring up to speed and engage in AltaLink projects 25 top talented engineers from Marte

### 3.3.3.2.1 Gaps in Human Resources

ATP and Marte have a strong senior management team, all of them having a long history with respective organizations and truly committed to the success of the recent acquisition. The major gaps identified under Human Resources have been previously outlined under Management Preferences, Organizational Capabilities, or Operational Resources.

### 3.3.3.2.2 Suggested Gap-Bridging Solutions

As described in the preceding sections, with the exception of Brazilian HR consultant, all required resources can be provided from within ATP or Marte.

### 3.3.3.3 Summary – Operational and Human Resources

The analysis of the Organization had exposed four gaps and recommended corresponding gap-bridging solutions to enable the success of Strategic Alternative #2:

- Assign appropriate number of resources to address present shortage of qualified resources on AltaLink project management
- Enhance the Senior Vice President experience with Brazilian market
- Address the limited familiarity of the HR Director with Brazilian culture and labour market
- Improve ATP’s capability to adopt new technologies, currently hindered by resource overload in Alberta

Table 3.14 below presents the suggested recommendations to bridge these four gaps.

**Table 3.14: Summary of Operational and Human Resources Gaps and Suggested Solutions for Strategic Alternative #2**

	<b>Gap</b>	<b>Suggested Solution</b>	<b>Estimated Costs</b>
1	Inadequate operations resources (project management) for AltaLink Projects	Appoint three new regional directors reporting to VP AltaLink Projects: Mega North, Mega South and Small Size Projects	Costs considered under Management Preference suggested solutions
2	Senior Vice President has limited experience with Brazilian market	Assign Marte's Vice President of Operations to work together with the Senior VP	Costs considered under Management Preference suggested solutions
3	Director of HR has insufficient understanding of Brazilian culture and labour market	Employ an experienced local HR consultant familiar with North American business culture	Costs considered under Management Preference suggested solutions
4	Capability to adopt new technologies is hindered by current resource overload in Canada	In the first six months, bring up to speed and engage in AltaLink projects 25 top talented engineers from Marte	\$100K per year

### 3.3.3.4 Financial Resources

Strategic Alternative #2's financial needs are estimated to require \$670K in the first year, and an amount of approximately \$500K each year thereafter. The initial one time investment of \$200K in Marte's IT infrastructure is expected to satisfy the needs for three years and the costs of subsequent periodic upgrades are assumed to be offset by a reduction in regular yearly costs.

Table 3.15 below presents the breakdown of required financial resources identified under Management Preferences, Organization and Resources.

**Table 3.15: Financial Resources Required for Strategic Alternative #2**

	<b>Gap</b>	<b>Suggested Solution</b>	<b>Estimated Costs</b>
1	Senior Vice President limited experience with Brazilian market	Assign Marte's Vice President of Operations to work together with the Senior VP	\$10K per year
2	Create time for Vice President AltaLink Projects	Appoint three new regional directors reporting to VP AltaLink Projects: Mega North, Mega South and Small Size Projects	\$50K per year
3	Director of HR insufficient understanding of Brazilian culture and labour market	Employ an experienced local HR consultant familiar with North American business culture	\$40K per year
4	Outdated IT infrastructure in Marte's offices	Improve existing IT infrastructure and acquire necessary software	\$200k one time investment
5	Little understanding of SNC Lavalin corporate processes, standards, tools and software	Establish corporate training programs in Brazil; Sponsor English language and professional development courses in Brazil	\$150K per year
6	No engagement of Marte's executives in specialty groups	Establish a joint management structure ATP - Marte to ensure cohesion in action and early buy-in; Ensure participation of experts from both organizations	\$50K per year
7	Insufficient direct interaction and in person meetings	Facilitate direct interaction through quarterly in person meetings, in Canada and in Brazil	\$50K per year
8	Limited understanding of local culture and customs	Enroll ATP and Marte representatives in classes about Brazilian and Canadian history, culture and customs	\$20K per year
9	Capability to adopt new technologies is hindered by current resource overload in Canada	In the first six months, bring up to speed and engage in AltaLink projects 25 top talented engineers from Marte	\$100K per year

\$470K per year and  
\$200k one time investment

The funds required by this investment are within SNC Lavalin's group financial capability and it will not require debt or equity finance.

### 3.3.4 Benefits of Strategic Alternative #2

Strategic Alternative #2 is anticipated to recover rapidly its initial investment and regular yearly expenditures. The difference in labour costs between Canada and Brazil are expected to generate a strong and steady return.

The average salary of an intermediate to senior engineer in Alberta is approximately \$7,000/month, while in Brazil, for similar qualification and experience, is approximately \$1,500/month<sup>53</sup>. Anticipating the implementation of an incentive pay system in Brazil designed to stimulate performance and amounting up to 33% over and above regular salary, will result in a favourable variance of \$5,000 per month for every engineer. Considering the threshold of 25 engineers from Marte working on AltaLink's projects at the end of the first six months, the overall variance at the end of first year it will equate to \$750,000. Nevertheless, although this theoretical return exceeds the investment at the beginning of Year 1, ATP will consider a contingency amount of \$80,000 as management reserve and aim for a break-even at the end of Year 1.

The time value of money is not anticipated to pose a material effect and it is expected to be offset by improved cash inflow generated by quicker project delivery supported by additional highly skilled Brazilian resources.

In the mid-term, specifically by the end of Year 3, it is anticipated that approximately 100 Brazilian engineers will work remotely on ATP's projects in Canada. This model may hypothetically generate a saving on salary cost of  $100 \times \$5,000/\text{month} \times 12 = \$6,000,000$  per year. Considering the gap Canada – Brazil narrowing by an inflated

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<sup>53</sup> [www.worldsalaries.org/brazil.shtml](http://www.worldsalaries.org/brazil.shtml), accessed on Feb. 14, 2012

(and unlikely) 5% per year, equivalent to compounded 15.76% over three years, Strategic Alternative #2 will still yield \$5,054,400 per year.

### **3.3.5 Summary of Assessment**

The identified gaps could be successfully surmounted by suggested gap-bridging recommendations. The proposed Strategic Alternative #2 fully supports the post-acquisition integration effort; it is realistic and is expected to generate a great return. Therefore, Strategic Alternative #2 is a viable option, capable to address successfully ATP's current constrains: access to highly skilled workforce, timeliness of project delivery, ability to adopt new technologies, and improvement on competitiveness on tender.

### **3.4 Assessment of Strategic Alternative #3**

Strategic Alternative #3 is also addressing the need of highly qualified resources, capable of improving the company's ability to compete on tender and improve delivery schedule on complex development projects. Similar to Strategic Alternative #2, and with the same focus on fast, inorganic growth, it is recommended an acquisition of an engineering firm in India, with EPCM capability and a solid portfolio of projects. The argument for this new acquisition is to enable ATP almost round the clock access to a pool of highly qualified resources, taking advantage of time zone difference between Canada and India. In addition to time zone advantage, and in contrast to Brazil, the Indian employees are more familiar with the English language and the British culture, an aspect that could simplify and accelerate post-acquisition integration. It is intended to utilize this

unique capability and perform engineering and project related activities in opposite time zones by establishing joint Canadian-Indian teams working round the clock on North & South American projects. In the long term, this acquisition should create the premises for a stronger worldwide presence, allowing ATP to expand and capture a global market share.

### **3.4.1 Management Preferences**

#### **3.4.1.1 Management Objectives**

Under Strategic Alternative # 3, ATP management team will have to work closely with the Mergers & Acquisitions experts from SNC Lavalin head office and together devise a plan to identify and evaluate potential targets of interest in India. Once the local engineering or EPCM companies are identified, a comprehensive and lengthy due diligence process will commence to investigate the targeted acquisition. Based on the previous experience with Marte Engenharia in Brazil, this action is expected to take up to one year, or even longer.

##### **3.4.1.1.1 Gaps in Management Objectives**

Although ATP and SNC Lavalin possess the required capabilities to pursue a new acquisition in India, and everybody is on the same page regarding ATP's inorganic growth, this will not be a quick and easy fix to ATP's current problems.

Based on personal observations and through interviews, ATP's senior management is not prepared to entertain the idea of another acquisition before finishing Marte's integration and start seeing the material benefits of this effort.

#### **3.4.1.1.2 Suggested Gap-Bridging Solution**

At this time, it is unlikely to see a feasible solution for closing these major gaps. For the next few years the management team is likely to be reluctant to pursue a new acquisition, and probably only after the success of Strategic Alternative #2 is proven, they may decide to revisit this proposal sometime in the distant future.

#### **3.4.2 Summary of assessment**

Because the management team is very unlikely to move forward with this alternative, the assessment of this strategic alternative will not be carried any further<sup>54</sup>.

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<sup>54</sup> Crossan, M. Mary, Rouse J. Michael, Fry N. Joseph, Killing J. Peter (2009). *Strategic Analysis and Action*. Toronto, ON; Pearson Prentice Hall, Seventh Edition.

## **4: FINAL RECOMMENDATIONS AND PROPOSED IMPLEMENTATION PLAN**

This chapter will present a summary of the proposed Strategic Alternative, elaborate on suggested recommendations and propose an Implementation Plan with the corresponding timelines.

### **4.1 Summary of the Strategic Alternative**

Further to the industry analysis and evaluation of company's internal capabilities, the most feasible solution to maintain ATP's current leadership position is to accelerate the integration of recently acquired Marte Engenharia with SNC Lavalin ATP. The highly qualified employees available in Brazil should be able to alleviate the current resource shortage in Alberta, accelerate project delivery, and create the premises for quicker adoption of new technologies. Because of these improvements, ATP's ability to compete on tender would be positively influenced.

The proposed full-scale joint integration team will comprise of experienced senior executives from both units and reporting to the Senior Vice President, the highest decision making authority within SNC Lavalin ATP. A big emphasis will be placed on combining the best of both companies, rather than imposing processes owned by one or the other. In parallel, the team will insist on people's integration by promoting the understanding of the cultural differences and supporting direct communication and regular in person meetings in Canada and Brazil.

Although ATP is currently in the anticipatory change phase, the dynamics of the business environment combined with management preferences will require a rapid pace for implementing this strategic alternative. The first results are expected to materialize within six months from the moment of commencing the infrastructure change and formal training process.

## **4.2 Summary of gaps and recommended solutions**

To implement this strategic alternative, ATP and Marte have to bridge the gaps identified in the areas of management preferences and organization capabilities. The gaps arising from management preferences are mainly related to the ATP's limited experience in the Brazilian market and addressing them will require a strong and collaborative participation from Marte's side. Similarly, ATP's management should support the Brazilian counterpart to familiarize itself with the Canadian market. Another gap identified under management preferences is Marte's current lack of engagement in the integration effort. The presence and genuine participation of Marte's management is paramount for the success of this strategic alternative.

The gaps in organizational capabilities are largely generated by cultural differences. ATP's lack of previous exposure to the Brazilian culture will require a rapid catch up, including enrolment in formal courses about Brazilian history, culture, and customs. Conversely, the same approach is required with Marte, as their employees have had limited interaction with the Canadian culture. A thorough understanding and regard of each other's culture will alleviate the risk of misunderstandings and enable a sincere and productive exchange of ideas.

Summary of identified gaps and proposed solutions is presented in Table 4.2 below:

**Table 4.2 Summary of gaps and suggested recommendations**

	<b>Required Preferences and Capabilities</b>	<b>Observed Preferences and Capabilities</b>	<b>Major Gaps</b>	<b>Gap-Closing Solution</b>
1	The Senior Vice President should lead a multi-discipline and multi-cultural integration team ; Strong knowledge of local market	Match with required experience; Limited experience with Brazilian market	No major gaps, but his limited experience in South American markets will require strong local insight	Assign Marte's VP of Operations to work together with ATP's Senior VP
2	The Vice President - AltaLink projects should be able to work together with others and provide high value contribution to integration effort	Match with required preferences; Current time limitation is an issue	Availability to meet with the team is seriously hindered by time limitation due to workload and lack of adequate subordinate structure	Assign new regional directors reporting to VP AltaLink Projects: Mega North, Mega South and Smaller size Projects
3	The Director of HR should have strong knowledge on integration of office infrastructure and integration of people; Strong understanding of local market	Match with required experience; Limited experience with Brazilian market	No major gaps, but his limited experience in South American markets will require local input and guidance	Employ an experienced local HR consultant familiar with North American business culture
4	IT infrastructure capable to sustain an increase flow of information and data exchange at ATP and Marte's offices	Only ATP has all required IT infrastructure in place	Insufficient and outdated infrastructure at Marte's offices	Acquire new work stations and servers for Marte. Install corporate PM+ software and data repository on Marte's workstations
5	Training programs to ensure good understanding and utilization to full potential of SNC Lavalin corporate processes, standards, tools, hardware and software	Formal training is available only at ATP	No training currently available at Marte	Set up a formal bilingual, English and Portuguese, training program for Marte's employees
6	Knowledge area groups, led by senior managers from both companies	Currently only ATP executives are managing the area groups	No engagement of Marte's executives in specialty groups	Establish a joint management structure ATP - Marte to ensure cohesion in action and early buy-in; Ensure participation of experts from both organizations
7	High degree of regard and collaboration for the benefit of the business as a whole	Some collaboration at senior management level; Tendency to impose ATP's business practices and work procedures and work procedures	Insufficient collaboration with Marte executives and formal inclusion of their input in current integration strategy	Establish a set of terms of references to assist senior management team in working collaboratively
8	ATP's executives should have a good understanding of Brazilian culture and customs	Some sporadic understanding acquired during short business trips to Brazil	Limited understanding of Brazilian culture and customs	Enroll ATP and Marte representatives in classes about Brazilian and Canadian culture and customs
9	Marte's executives should have a good understanding of Canadian culture and customs	Very seldom Brazilian executives travel to Canada and hence they rely on second hand information about Canadian culture and customs	Almost no previous direct interaction with Canadian culture	Enroll Marte's representatives in classes about Canadian culture; Alternate quarterly team meetings in Brazil and Canada to hasten executive's understanding of local cultures
10	Highly skilled engineers required for ATP's projects in Alberta	Insufficient resources, current Canadian resources are overloaded	Highly skilled engineers are required in Alberta	In the first six months, bring up to speed and engage in AltaLink projects 25 top talented engineers from Marte

### 4.3 Proposed Implementation Plan and timelines

Table 4.3 below presents the recommended activities and their corresponding timelines.

Table 4.3 - Implementation Plan and timelines

	<b>Action</b>	<b>Responsibility</b>	<b>Begin</b>	<b>End</b>
	<b>IMPROVE READINESS FOR CHANGE</b>			
1	Assign Marte's VP of Operations to work together with ATP's Senior VP	ATP's Senior VP and Marte's VP Operations	01-May-12	01-May-15
2	Employ an experienced local HR consultant familiar with North American business culture	Marte's VP Operations	01-Jun-12	01-Jun-15
3	Establish a set of terms of references to assist senior management team in working collaboratively	ATP's Senior VP	01-May-12	01-Jun-12
4	Establish a joint management structure ATP - Marte to ensure cohesion in action and early buy-in	Marte's VP Operations	01-May-12	01-Jul-12
	<b>CHANGE ORGANIZATIONAL STRUCTURE</b>			
5	Assign new regional directors reporting to VP AltaLink Projects: Mega North, Mega South and Smaller size Projects	ATP Senior VP and VP AltaLink Projects	01-May-12	Permanent
	<b>CHANGE INFRASTRUCTURE, HARDWARE AND SOFTWARE</b>			
6	Acquire new work stations and servers for Marte	Marte's VP Operations	01-Jul-12	31-Aug-12
7	Install corporate PM+ software and data repository on Marte's workstations	Director of Procurement and VP Engineering	15-Jul-12	15-Sep-12
	<b>FORMAL TRAINING</b>			
8	Formal bilingual, English and Portuguese training program for Marte's employees to ensure utilization to full potential of processes, standards, hardware and software	Director of HR, local HR Consultant, VP of Engineering, Director of Procurement	01-Jul-12	31-Oct-12
	<b>ADDRESS CULTURAL DIFFERENCES</b>			
9	Enroll ATP representatives in classes about Brazilian culture and customs	Director of HR	01-Aug-12	01-Aug-13
10	Enroll Marte's representatives in classes about Canadian culture	Director of HR and local HR Consultant	15-Aug-12	15-Aug-13
11	Alternate quarterly team meetings in Brazil and Canada to hasten executive's understanding of local cultures	ATP Senior VP and Marte's VP Operations	15-Aug-11	Permanent
	<b>DELIVER FIRST RESULTS</b>			
12	In the first six months, bring up to speed and engage in AltaLink projects 25 top talented engineers from Marte	Marte's VP Operations and VP of Engineering	01-Jul-12	01-Dec-12

#### **4.3.1 Short Term – Within Three Months**

There are several actions required during the first three months, mainly with the purpose to improve the readiness for change:

- Formal engagement of Marte’s Vice President for Operations is immediately needed
- Employment of a Brazilian HR consultant, familiar with North American culture, to work closely with the Director of HR and complement her limited experience with Brazilian market
- Establishment of a set of terms of references to assist the integration team in their collaborative effort
- Full engagement of Marte’s management into the integration team
- In Alberta, appoint three regional directors subordinated to the Vice President AltaLink Projects to allow him substantial participation to the integration effort

#### **4.3.2 Medium Term – Three to Six Months**

Once the preliminary actions are completed or well on the way, it is time to consider physical changes to the existing infrastructure, commence formal training, and address cultural differences:

- Upgrade outdated IT infrastructure and acquire new workstations and related hardware for Marte’s offices

- Install SNC Lavalin’s corporate software PM+ and other proprietary software, including data repository for lessons learned and innovation
- Institute a formal bilingual training program for Marte’s employees, and ATP’s when required, to ensure thorough understanding and implementation of processes and procedures, and full utilization of available hardware and software
- Start addressing cultural differences and commence the enrolment of Marte’s and ATP’s representatives in classes about Canadian, and respectively Brazilian, culture and customs

#### **4.3.3 Long Term – Six Months to Three Years**

At the beginning of this timeframe, first results are expected to occur. In the long term, the integration of people and addressing cultural differences will continue:

- Within six months from the commencement of formal training, and approximately eight months from the start of Strategic Alternative #2, a group of 25 engineers from Marte are expected to be productively engaged in AltaLink projects
- Continue employee enrolment in classes about Canadian and Brazilian cultures
- Hold quarterly meetings in person, alternatively in Canada and Brazil

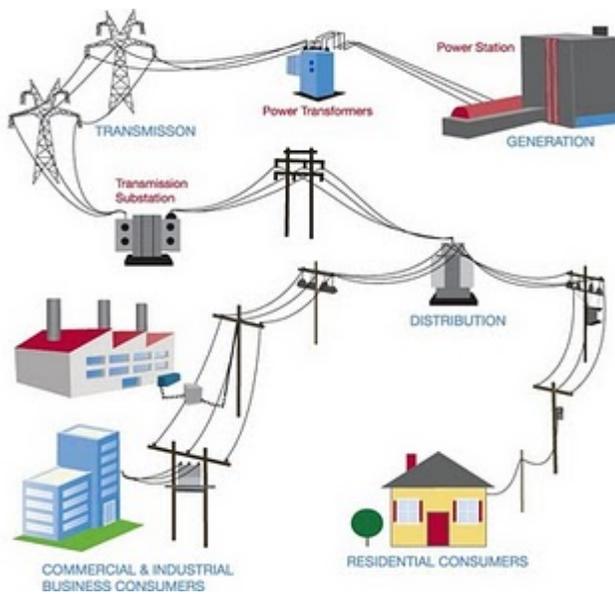
## **APPENDICES**

## Appendix A - Power generation, transmission and distribution

Generating stations usually produce electricity in remote areas using a variety of fuels or energy sources. It is commonly generated at a voltage of 22,000 Volts and, in order to reduce the losses along the transport to the final consumer, the voltage is immediately stepped-up in a power transformer to the transmission voltage level, up to as much as 240,000 to 500,000 Volts.

The transmission system carries electricity from the power transformers over hundreds of kilometres to transmission substations where the voltage is stepped-down to 138,000 Volts. When approaching the proximity of major industrial or commercial consumers, transmitters again decrease the voltage to 39,000 to 69,000 Volts in distribution substations.

Then, the distribution networks transfers the electricity from the transmission system and delivers it to consumers. The figure below schematically represents the entire process.



Electric grid value chain\*)

\*) Retrieved on July 31, 2010 from <http://sdm-blog.mit.edu/2010/03/sdm-best-thesis-prize-awarded-for-grid.html>

## **Appendix B – SNC Lavalin Group Vision, Values and Mission**

### **Vision**

SNC-Lavalin's vision, built on experience and innovation, is to maintain and strengthen its core engineering business, to develop new skills and activities, and to respond to the changing needs of clients and markets. SNC-Lavalin's strategy for sustained growth is anchored in the development of world-class products, its far-reaching international network and its financing capabilities.

#### **We are committed to:**

Enhancing our worldwide reputation in selected industry sectors, and actively pursuing initiatives in sectors and geographic areas where we can deliver superior value through its competitive advantages.

Maintaining a comprehensive international marketing network.

Maintaining leadership in project management capability, supported by state-of-the-art project management systems.

Being a multicultural company proud of our ability to operate in many languages and adapt to the culture of the countries and communities in which we work.

Take part in the development of projects requiring equity participation, and in the privatization of government-owned facilities.

Adopting a flexible and open approach towards the needs of our clients by listening to and respecting their views, and being ahead of emerging trends and potential technological breakthroughs.

Developing a stable client base with significant repeat business.

Generating a sustainable long-term profit, and achieving optimum growth for our shareholders to deliver returns on shareholders' equity that consistently rank us in the top ten best publicly listed global engineering, procurement and construction (EPC) companies and match returns of long-term bonds in Canada plus 600 basis points.

## **Values**

Our vision is supported by the following values which we are committed to carrying out:

Ensure that high standards of health and safety are a primary objective in all our activities worldwide.

Respect for our code of ethics, the environment, quality, and a philosophy of on-going improvement.

Encourage a culture founded on a sense of pride and belonging, and empower our employees to take initiatives and assume responsibilities.

Provide stimulating and varied career opportunities for our employees in a challenging and rewarding equal-opportunity work environment.

Assure the development of the technical and managerial know-how of our employees to remain at the top of our selected industry sectors.

Encourage share-ownership by employees.

## **Mission**

SNC-Lavalin is one of the world's leading engineering, procurement, construction and related technical services organizations, serving selected industry sectors and geographic markets.

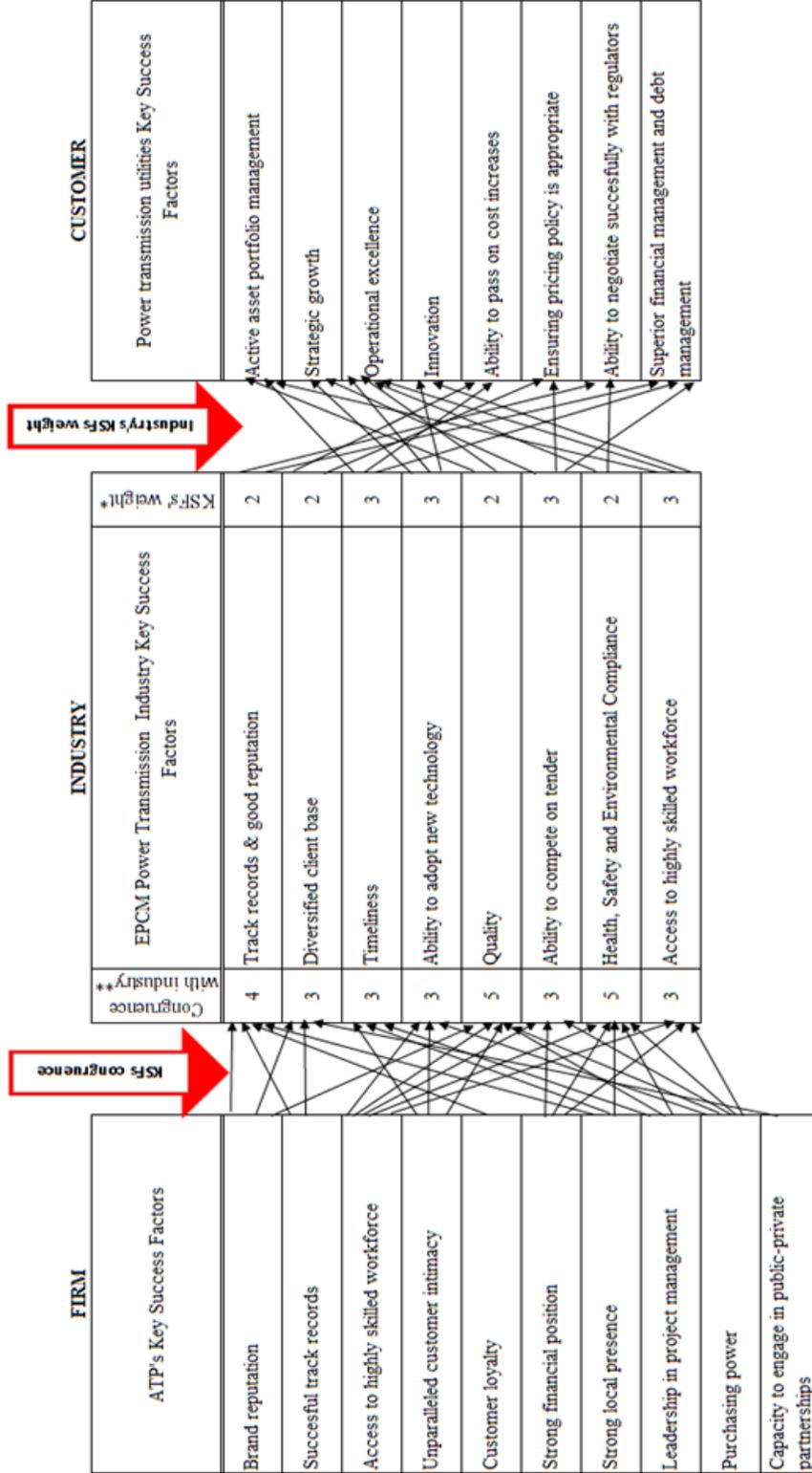
SNC-Lavalin achieves this through the know-how of its people by contributing to the success of its clients through value-added services and by continuous investment in the improvement of its technical and managerial competence.

SNC-Lavalin is committed to achieving a superior financial return for its shareholders.

\*) Source: SNC Lavalin official web site - <http://www.snclavalin.com/about.php?lang=en>, accessed on May 20, 2011

# Appendix C – Key Success Factors Strategic Congruence

Key Success Factors' strategic congruence



\*) Weight based on number of links between Industry's KSF to Customer's KSF (number of arrow tails per Industry KSF)  
 \*\*) Congruence based on the number of links between Firm's KSF and Industry's KSF (number of arrow heads per Industry KSF)

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