

# STRATEGIC ALLIANCES IN THE CORPORATE ENVIRONMENT

by

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PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF  
THE REQUIREMENTS FOR THE DEGREE OF

Master of Business Administration

In the Faculty  
of  
Business Administration

Management of Technology Program

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SIMON FRASER UNIVERSITY

Summer 2006

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## **ABSTRACT**

This paper concentrates on research regarding various types of Strategic Alliances that are employed within the corporate environment. A Strategic Alliance defined is the sharing of resources between two or more companies in order to provide shared benefits that otherwise individually would be more difficult to realise. This paper applies the findings to Engineering Line of Business (ELoB) of BC Hydro. ELoB is entering a transition phase where deregulation is on the horizon of the electrical industry in BC. In order to position itself to sustain and then grow in the marketplace, ELoB must pay attention to its core business which consists of Transmission Engineering, Distribution Engineering, and Generation Engineering. One way of positioning ELoB to remain a leader in BC is to selectively enter partnerships that can benefit ELoB and allow it to grow and reach the goals it has set for itself.

## **DEDICATION**

For my wife Daljit Kaur and my children Chandan Singh and Tripata Kaur. Thank you for being patient and understanding why I couldn't spend time with you over the course of the last few years. Your sacrifice has allowed me to successfully complete this degree and your encouragement and love has been the light to brighten my darkest days.

Also for my parents, my brother and my sister who stood by me throughout my life. Without you I could not have reached my dreams and my goals.

## **ACKNOWLEDGMENTS**

I would like to acknowledge my classmates for their help and support throughout this program. I would also like to thank my friends and family for putting up with me over the course of this endeavour. It has been a tough road, but as they say the best things in life are the ones that you work the hardest for. Finally I would like to thank all the professors and staff at SFU, who have made the Management of Technology MBA program interesting and challenging.

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## 1 INTRODUCTION

Not too long ago Strategic Alliances were considered the domain of corporate giants such as GM. With the ever increasing globalisation of industries, and the rapid infusion of technology, as well as the rapid pace of change in the business world, strategic alliances are now a way of surviving in the competitive world of business<sup>1</sup>. Within the last decade rapid IT innovations have lowered transaction costs of establishing and maintaining Strategic Alliances. This has allowed more small and medium sized companies the opportunity to enter into Strategic Alliances.

Simply stated a Strategic Alliance is the sharing of resources between two or more companies in order to provide shared benefits that otherwise individually would be more difficult to realise<sup>2</sup>. These benefits could include risk sharing and access to resources, and capabilities such as capital investment and personnel, specific technical knowledge, as well as marketing and distribution channels. These alliances can be characterised as simple, such as the sharing of technological knowledge between only two companies, or increasingly complex, involving many companies, across many geographical regions, sharing multiple resources.

This paper concentrates on research regarding the various types of Strategic Alliances that are employed within the corporate environment. The findings of the literature review will then be applied to the Engineering Line of Business (ELoB) of BC Hydro, a Crown Corporation in British Columbia.

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<sup>1</sup> BUKSZAR, Ed, (2003) Bus 752 Strategy Class Notes. *Simon Fraser University*

<sup>2</sup> Ibid.

To better understand ELoB of BC Hydro, a detailed industry analysis is conducted examining the strengths and weaknesses, as well as identifying threats and opportunities. Additionally an internal analysis examines ELoB's value chain and its core capabilities. A Fulcrum Analysis, which is a situational assessment and prognosis, then takes the industry analysis and internal analysis and assesses the current strategy and performance of ELoB. Finally a solution analysis is conducted where several alternatives are generated that can be applied to ELoB and these are evaluated and recommendations made.

### **1.1 BC Hydro Today: A Snapshot**

BC Hydro has been a fixture in the minds of British Columbian's since the early 1900's. The forerunner of BC Hydro was the Victoria Gas Company, which was formed in 1880. Over the next 20 years, the Victoria Gas Company acquired firms and generation facilities across BC, eventually becoming BC Electric in 1897. BC Electric continued to grow and flourish within BC as a private company until 1961, when it became a Crown Corporation and was renamed the BC Hydro and Power Authority (BCHPA). Eventually the name was shortened to BC Hydro.

Up until 2002, BC Hydro controlled all aspects of its business, namely Transmission, Generation and Distribution. Within the BC Hydro family, there were two wholly owned subsidiaries, Powertech, the R&D arm, and Powerex, the energy-trading arm. This all changed with BC Hydro adhering to the Federal Energy Regulatory Commissions (FERC) order that the transmission arm of energy companies must be independent in order for that company to trade energy. This forced BC Hydro to split the company into different line of businesses such as Transmission, Generation, and Distribution. Additionally the transmission line of business was spun off into a new Crown Corporation called the British Columbia Transmission Company

(BCTC). In its form today, BC Hydro has approximately 1500 employees, and the ELoB is one of many service divisions within the company (see Figure 1).

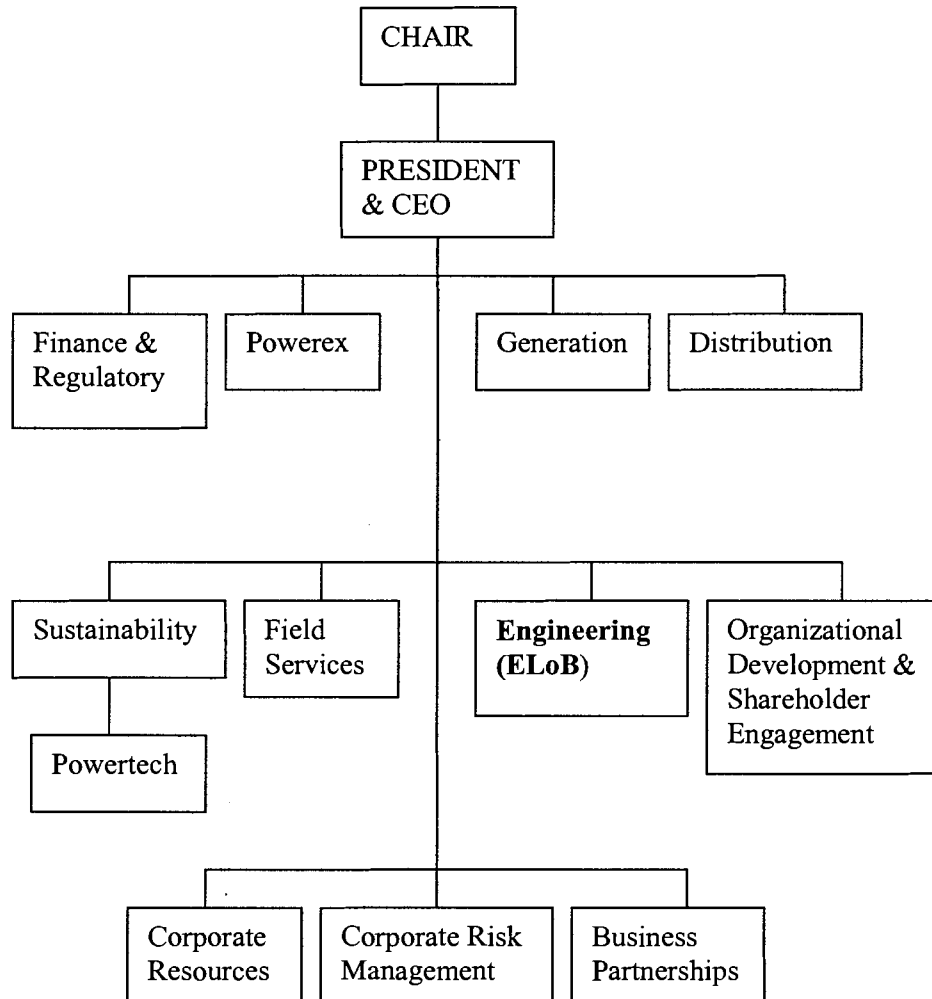


Figure 1. BC Hydro Organisational Chart

## 1.2 Engineering Line Of Business (ELOB)

ELOB in BC Hydro consists of approximately 600 employees of which the majority are engineers and technologists. The V.P. of Engineering leads the Line of Business, and has a senior management team that leads six divisions as illustrated in Figure 2.

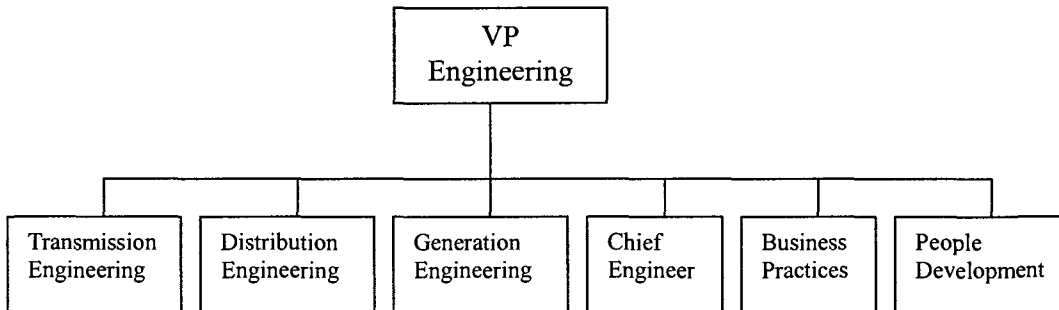


Figure 2. ELOB Organisational Chart

Each of these divisions are further partitioned into project delivery teams with project managers leading these teams. The project teams are multi-disciplined teams that may have Civil, Mechanical, Electrical, Telecommunication, and Protection & Control (P&C) personnel, in order to implement various engineering projects.

Currently 100% of the work carried out by ELOB is for internal clients, however this will change in the future. At present the bulk of the work will come from BCTC, but after a six-year period as per BC Hydro/BCTC service level agreement, ELOB may need to find external clients. At this point in time, a Strategic Alliance may be the answer to the question of where these external clients and external work will come from.

## 2 LITERATURE REVIEW

This literature review will focus on the current thinking regarding Strategic Alliances, specifically why companies enter into alliances, the frameworks used to select alliances, as well as different types of alliances.

### 2.1 Strategic Alliances

Vyas et al<sup>3</sup> describes a Strategic Alliance as an agreement to share resources between two or more companies in order to provide shared benefits that otherwise individually could not be realised. Another definition by Knaani<sup>4</sup> states that Strategic Alliances are business relationships between organisations where risks, strengths, or integrated business functions are shared for mutual benefits. Each of the partners in an alliance remains a distinct entity where individual assets are not combined.

Many companies today enter Strategic Alliances because they are looking to gain a competitive advantage by accessing resources from prospective partners. These resources can include markets, technologies, personnel and capital. With the sharing of these resources between partners, it allows for individual entities to grow more quickly. With an alliance, companies have the opportunity to stretch their resources, in the process allowing them to concentrate on their core competencies.

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<sup>3</sup> VYAS, Niren M., Shelburn, William L., Rogers, Dennis C., "An Analysis of Strategic Alliances: Forms, Functions, and Framework". Journal of Business and Industrial Marketing, Vol. 10 No. 3 1995, pp 47-60, MCB UNIVERSITY PRESS

<sup>4</sup> KNAANI, Alexander, "Framework for Developing Corporate Strategic Alliances", Online Presentation from website: [www.cvn.columbia.edu](http://www.cvn.columbia.edu), November 16, 2000, Columbia University



Many companies use Strategic Alliances to benefit from risk sharing, access to resources and capabilities such as technical knowledge, capital investment, and marketing and distribution channels. However, the question arises, what are the generic motives for companies to enter Strategic Alliances? Lorange and Roos<sup>5</sup> suggest that the motive of each prospective partner can be characterised by looking at two dimensions. The first dimension looks at the strategic importance of the business where the Strategic Alliance is being considered. Is the business part of the core activities for the prospective partner or is it considered a peripheral player?

The second dimension is interested in the relative position of the company with respect to the market it is in. The basic question is, is it a leader or a follower? If the company is a leader, it may control a large portion of the market, and will be a leader in the field of technology. However, if the company is a follower, it is trying to catch up to the leader and must approach Strategic Alliances differently. Figure 3 illustrates the two by two matrix for generic motives for Strategic Alliances.

		Firm's Market Position	
		Leader	Follower
Strategic Importance in Parents Portfolio	Core	Defend	Catch Up
	Peripheral	Remain	Restructure

Figure 3. Generic Motives for Strategic Alliances

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<sup>5</sup> LORANGE, Peter, Roos, Johan. Strategic Alliances: Formation, Implementation, and Evolution, Blackwell Publishers, Cambridge, Massachusetts 1992

In essence when an established firm has a leadership position in the market, the motive to enter into a Strategic Alliance is *defensive*. This would be similar to a large petroleum company partnering with a synthetic oil manufacturer to defend their position in the oil and gas market. When the motive in a Strategic Alliance is for the firm to *catch up*, then that firm's business falls in the core area, but it is considered a follower in the market. On the other hand when the firm plays a peripheral role in an overall portfolio, but it is a leader in its market, its motive to enter into a Strategic Alliance is to *remain*. A good example of this would be electronics giant Sony partnering with a CD manufacturer when CD's first entered the electronics market. Finally if the firm once again plays a peripheral role in the parents' portfolio and it is a follower in the market, then the motive for a Strategic Alliance is to *restructure* its business.

## **2.2 Framework for Strategic Alliances**

Now that we know what the motives are for firms entering Strategic Alliances, the next question that comes to mind is how to structure the Strategic Alliance. The architecture of a Strategic Alliance seems to vary depending on the firm's viewpoints as well as the type of industry the firms, contemplating on entering a Strategic Alliance, are involved in. A Strategic Alliance in an IT atmosphere may be very different than a Strategic Alliance in an energy environment.

### **2.2.1 Industry Based Frameworks**

Vyas et al<sup>6</sup> look at Strategic Alliance frameworks in terms of what types of industries are involved. Their framework splits the types of alliances into two basic types: market related and

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<sup>6</sup> VYAS, Niren M., Shelburn, William L., Rogers, Dennis C., "An Analysis of Strategic Alliances: Forms, Functions, and Framework". Journal of Business and Industrial Marketing, Vol. 10 No. 3 1995, pp 47-60, MCB UNIVERSITY PRESS

technology related. A firm in a mature industry would likely enter into a Strategic Alliance that is market related. On the other hand a firm in the growth or high technology sector would enter into a Strategic Alliance that is strongly technology related. Figure 4 illustrates Vyas et al framework and different options available to a firm looking to enter a Strategic Alliance.

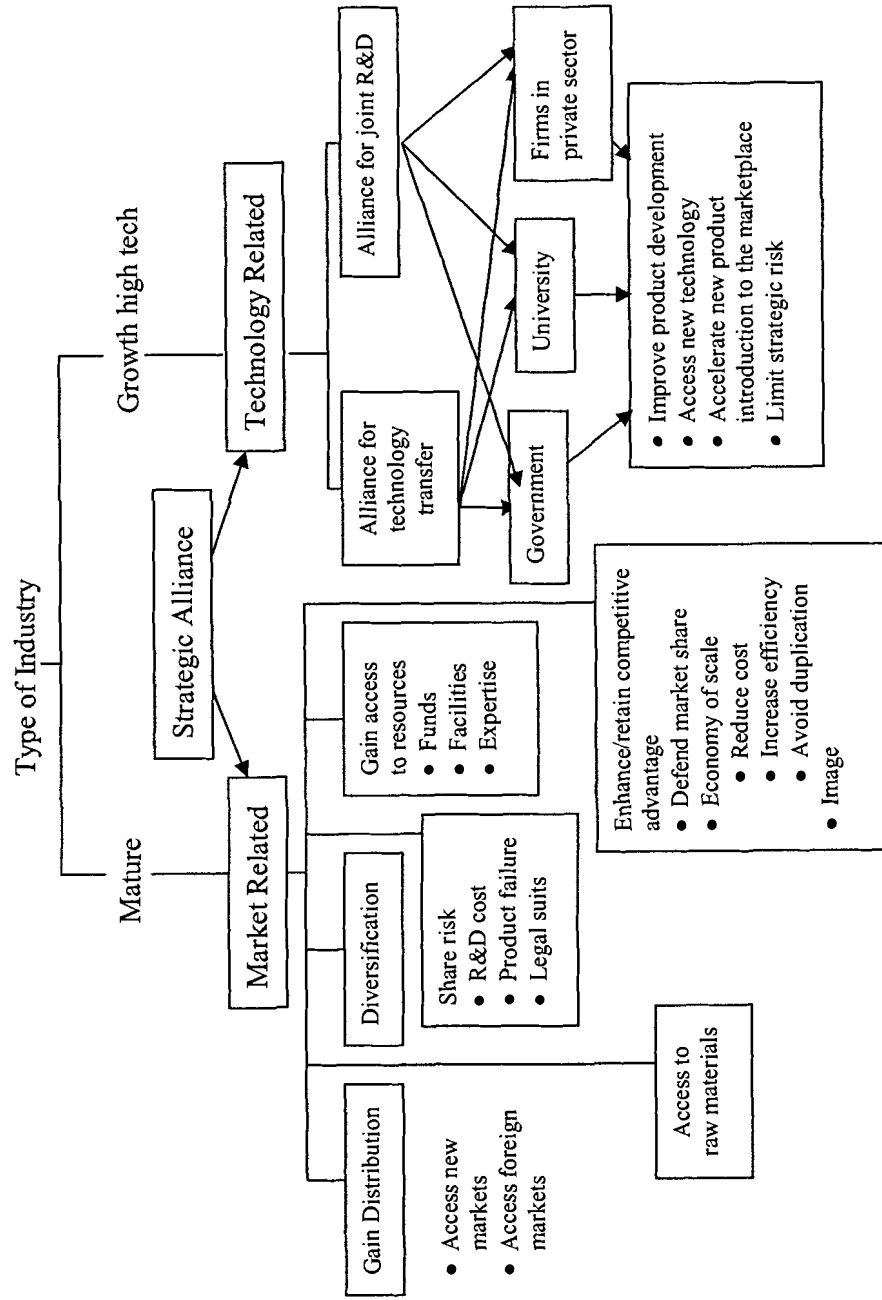


Figure 4. Framework for Selecting Strategic Alliances

### 2.2.2 *Resource/Risk Based Frameworks*

Knaani<sup>7</sup> uses a methodology to structure a partnership based on two key dimensions. These dimensions are Resource Management and Risk Management. Knaani believes that when a firm enters into a Strategic Alliance, it attempts to maximise its returns from the resources it uses while at the same time monitoring the risks associated with the formation of the Strategic Alliance.

In the first dimension there are four basic types of resources identified as: Financial, Technological, Physical and Management. Financial resources are the availability of capital while technological resources include technical know-how and excellent R&D capabilities. Physical resources can include raw materials, production capacities, and distribution channels. Management resources include human resources as well as the skills required in running a business effectively such as marketing and operations.

The second dimension is based upon risk management, which is usually an unexpected or unanticipated variable to the Strategic Alliance. The two types of risks are identified as relational risk and performance risk. Relational risk is the probability that partners may default on the terms of the Strategic Alliance. This sort of risk comes about from firm to firm interaction and is prevalent in Strategic Alliances at different levels. There are many ways to mitigate relational risk, however some of the obvious ones are, contractual clauses, control and measurement mechanisms, and shared equity ownership. Performance risk is the probability of strategic goals of an alliance not being achieved, even though the partners involved in the

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<sup>7</sup> KNAANI, Alexander, "*Framework for Developing Corporate Strategic Alliances*", Online Presentation from website: [www.cvn.columbia.edu](http://www.cvn.columbia.edu), November 16, 2000, Columbia University

Strategic Alliance are co-operating. This type of risk usually arises from firm to environment interaction and is prevalent in any type of strategic decisions.

It is important to note that the level of relational risk does not necessarily correlate with performance risk and vice versa. In some cases relational risk actually increases performance risk. For example if there is a risk of defaulting on terms of a Strategic Alliance then of course there is a related performance risk as goals and deadlines will not be achieved. On the other hand performance risk can increase or decrease relational risk.

### **2.3 Types of Alliances**

A large factor in what type of an alliance a parent company will enter into depends on what types of resources that parent company is willing to offer up in the alliance. Lorange and Roos<sup>8</sup> suggest that there are two distinct extremes for allocation of resources in a Strategic Alliance, one extreme being the input of organisational resources such as people, technologies, funds and staff support. However, this allocation of resources allows for the Strategic Alliance to go in one direction only and does not account for possibilities to counterbalance unexpected strategic changes. The other extreme allows a Strategic Alliance to adapt to a variety of potential changes in the strategic environment; however this means that many more resources must be allocated at unpredictable times during the alliance to allow it to become self-adaptive. This extreme allows Strategic Alliances to deal with potential opportunities or threats in a more independent manner.

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<sup>8</sup> LORANGE, Peter, Roos, Johan. Strategic Alliances: Formation, Implementation, and Evolution, Blackwell Publishers, Cambridge, Massachusetts 1992

Another determining factor in the type of Strategic Alliance to enter is how much 'retrieval of output'<sup>9</sup> is expected from the alliance. Again there exist two extremes for the parents' 'retrieval of output'. On one extreme the parents can take back a large portion of the output resources generated such as financial profits, call backs of executives and other people resources, and retaining technological knowledge generated from the alliance. The other extreme is that all of these aspects are retained within the alliance; in essence a separate organizational entity is born.

Taking these two factors, Lorange and Roos have constructed a two by two matrix for types of Strategic Alliances as illustrated in Figure 5. If the parents put in the minimum resources, and then take the maximum retrieval of output, then an *ad-hoc pool* type of Strategic Alliance makes the most sense. A *consortium* type of Strategic Alliance makes the most sense when the two partners involved are willing to put in a significant amount of resources, but the value created from the alliance is passed back to the partners. A third type of Strategic Alliance is a *project-based joint venture*. This type of alliance is most sensible when the partners do not want to allocate many resources but they do want the alliance to create strategic value through a common organisation. Finally there is the *full-blown joint venture* where both partners allocate plenty of resources so that the resources that are generated from the Strategic Alliance are retained in the alliance itself.

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<sup>9</sup> LORANGE, Peter, Roos, Johan. Strategic Alliances: Formation, Implementation, and Evolution, Blackwell Publishers, Cambridge, Massachusetts 1992

		Parents' input of resources	
		Sufficient for short-term operations	Sufficient for long-term adaptation
Parents' retrieval of output	To Parents	Ad hoc pool	Consortium
	Retain	Project based joint venture	Full blown joint venture

Figure 5. Types of Strategic Alliances

Based on the above literature review it seems that ELoB, which considers itself a leader and its business core in BC Hydro, would be in a position to defend its position. So in order to enter a Strategic Alliance, ELoB should use the industry based framework. It would seem if a Strategic Alliance is struck it would be based on technology related criteria. However, once the Industry Analysis and Internal Analysis are conducted, it will become clearer as to what path ELoB should take. The Industry Analysis and the Internal Analysis in conjunction with the Fulcrum Analysis will dictate the type of Strategic Alliance to enter.



### **3 INDUSTRY ANALYSIS**

The industry analysis section consists of a SWOT analysis as well as an analysis using Porter's Five Forces model. The analysis will focus on the ELoB of BC Hydro, and not at the electricity supply industry which is the focus of BC Hydro.

#### **3.1 SWOT Analysis**

The SWOT analysis focuses on the strengths, weaknesses, opportunities, and threats of a company or division. The strengths and weaknesses are related to how Engineering operates and how others perceive it. A close look at the strengths and weaknesses can allow ELoB to streamline and focus its business practices for success.

The opportunities and threats are usually outside factors that ELoB can take advantage of in order to market its services successfully. A complete understanding of all these factors will allow ELoB to successfully market its unique engineering services.

##### ***3.1.1 Strengths***

BC Hydro has been around BC since the early 1900's, and in that time the Engineering department has been an integral part of BC Hydro and the province of BC. In that time ELoB have developed expertises that are renowned around the world. BC Hydro has cultivated a knowledgeable and expert workforce through the construction boom of the 1970's and 80's. In the 1990's these same engineering experts have become experts in maintenance engineering of the equipment they previously constructed. The synergy between the BC Hydro system and its employees allows for BC Hydro to have a competitive advantage and is the main reason they are considered leaders in their industry. Listed below are some of the strengths of ELoB:

- World-wide recognised engineering expertise
- Intimate knowledge of hydroelectric system in BC
- Maintenance Engineering expertise
- Attractive working environment and employee benefits
- Strong project management skills

#### *3.1.1.1 World-wide Recognised Engineering Expertise*

ELoB has been an integral part of BC Hydro for many decades, and in that time has cultivated excellent engineering knowledge and skills. Many of the engineers that worked on the design and construction of many of the large dams built in BC are still employed with ELoB in senior roles. This allows for the retention of world recognised engineering expertise, and a knowledge base that is second to none. Additionally many senior engineers that retire, are coming back in consulting roles so that the valuable experience they have is passed on to the younger generation of engineers.

#### *3.1.1.2 Intimate Knowledge of Hydroelectric System*

A large portion of understanding what is required for a hydroelectric system depends on how much knowledge an engineer has of the system he is working on. Fortunately ELoB has an intimate knowledge of how the BC hydroelectric system works as a result of the retention of personnel that built the infrastructure. This allows ELoB to maintain the system efficiently. Furthermore since the system is so complicated, the engineers are always learning about the system and how to deal with problems as they arise. This helps in maintaining these assets which are now ageing.

### *3.1.1.3 Maintenance Engineering Expertise*

Since the early 1980's there has not been any new hydroelectric projects built in the province of BC. This means that the mindset of ELoB has been forced to evolve over the last 20 years from a design engineering mindset to a maintenance engineering mindset. ELoB at BC Hydro has successfully made this transition, and are getting excellent service from ageing plants as well as their modern plants. Additionally the staff have an intimate knowledge of the plants which aids in the maintenance engineering being of an exceedingly high standard and a benchmark for other utility companies in the industry.

### *3.1.1.4 Attractive Working Environment*

BC Hydro has been known to be one of the best employers in BC, and this extends to the ELoB as well. The working environment is healthy and state of the art. Cafeterias, gyms, healthy lifestyle programs, flexible working hours, stress relief seminars are among the variety of different programs and venues available to ELoB employees. Additionally employees are provided with the tools needed to do the job such as accreditation, offices, office supplies, and engineering specific tools and gear. The benefits package that BC Hydro offers makes accepting a job at BC Hydro an easy decision. Along with 3 weeks vacation to start, employees are offered full medical and dental as well as an attractive extended health plan. In addition to this employees are allotted 20 flex days which they may choose to use as they wish. Furthermore, the pension plan offered by BC Hydro is second to none. BC Hydro promotes itself to be a safe and healthy workplace, and it backs that up with an excellent safety record.

### *3.1.1.5 Strong Project Management Skills*

In addition to the knowledge that ELoB and BC Hydro gained from the construction era and now the maintenance era, they have also developed excellent project management skills.

Project managers in ELoB have extensive engineering experience, in addition to their management experience. This has occurred due to the varied types of projects ELoB takes on, from small reports to the large construction projects of the 70's and 80's to today's maintenance projects across BC. The current crop of project managers has the skills to take on any kind of project and see it through successfully.

### ***3.1.2 Weaknesses***

Today maintenance is the focus of ELoB as very little new infrastructure is being built. Engineers being engineers are mostly interested in designing new infrastructure as opposed to maintaining older infrastructure. This has made it difficult for ELoB to find new employees with the right skills and the right mindset to carry out maintenance work. Listed below are some of the weaknesses of ELoB:

- Weak Workforce Succession planning
- Low Retention of young employees
- Experience loss through retirements
- Culture in Engineering

#### ***3.1.2.1 Weak Workforce Succession Planning***

Although engineers within ELoB are highly respected and have a great degree of expertise, they are nonetheless quickly reaching retirement age. One of the greatest weaknesses of ELoB is the inadequate succession planning in the late 80's and 90's. Much of the valuable knowledge gained by the Engineering department is being lost because there is nobody to pass it on to. For a good succession plan to work, you need at least 5 years overlap, so young engineers can acquire the knowledge from their mentors. Unfortunately the overlap period is much smaller, or none at all. This weakness was recognised in the late 90's, and as a result there has been a

push to hire young employees to replace the retirees. As BC Hydro has moved into the new millennium, a gap has developed within ELoB in regards to middle of the age demographic. There are approximately 25% of employees that are eligible for retirement, another 25% will retire in the next five years<sup>10</sup>, this leaves a void in employee demographics with intermediate level skills.

### *3.1.2.2 Low Retention of Young Employees*

Since 1999 there has been a push to hire more young people because of the senior engineers reaching retirement age. Engineer-in-Training (EIT) programs has been re-initiated, and on average 12-15 young engineers are hired each year in disciplines such as Electrical, Mechanical, and Civil Engineering. Additionally there is also a Graduate Technologist Training (GTT) program which feeds new technologists into the Engineering system. However, the demand for young personnel is still strong, as many young engineers and technologists are gaining experience very quickly and are being pushed into intermediate level positions.

### *3.1.2.3 Experience Loss Through Retirements*

In the late 1990's it was documented that a full 50% of the BC Hydro workforce would be reaching retirement age within the next 5-10 years. This is also mirrored in the ELoB as evidenced by the Black & Veatch Report<sup>11</sup>. This brings up the same old problem of loss of experience through retirements. In order to counteract this phenomenon, many of the retired engineers are coming back as consultants. This allows for the retention of experience, that otherwise would be lost, and in addition it allows for the '5 year overlap period' required for an engineer to become proficient in their chosen field.

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<sup>10</sup> Black & Veatch Report on Engineering Practices Review commissioned by BC Hydro, 2003

<sup>11</sup> Ibid

#### *3.1.2.4 Culture in Engineering*

The existing culture in Engineering is perceived to be stodgy, old-fashioned, and intolerant of change. This is not a healthy environment for new employees and only makes for a workplace with low morale. Many of the senior employees have been around upwards of 20-35 years and are looking forward to retirement. This makes for an ageing workforce that rates innovation and change low on the totem pole. Additionally there is in a small minority a prevailing attitude that we have done our time, and it is now the company's responsibility to support us. So a minority of the senior employees in non-management positions are biding their time, which makes for a workplace that becomes somewhat negative.

#### *3.1.3 Opportunities*

For the last few years, one of BC Hydro's strategic directions points towards deregulation. With this in mind, BC Hydro has reorganised in order to take advantage once deregulation becomes reality. Fleet services has been sold off, as has the IT department. As well BCTC, a new Crown Corporation has been formed. This undoubtedly means that ELoB's business model will also change as time goes on, and with this change come unique opportunities for Engineering that can be taken advantage of such as:

- Taking on Projects for other Utilities/Clients
- Expansion into the United States
- Expansion Globally
- Strategic Partnerships

### *3.1.3.1 Take on Projects for other Utilities/Clients*

With Engineering looking to deregulation in the future, it should start building relationships with outside clients. These clients could be other utilities across BC as well as private clients. With the expertise that Engineering has, the services that it could provide would be second to none. Dam safety, hydroelectric systems design and maintenance, transmission design and maintenance, substation design and maintenance are some of the areas that ELoB should offer its services in. Now is the time to build these relationships so clients other than BC Hydro get to know the extent of ELoB's expertise. If these relationships are cultivated properly, the opportunities for the future are limitless.

### *3.1.3.2 Expansion into the United States*

Another opportunity that Engineering could take advantage of is the possibility of expanding into the United States, especially in California. With the recent difficulties experienced by California in meeting energy demands, there is a market for Engineering expertise in order to build new plants as well as transmission lines and even new substations. Engineering has the expertise to take on these projects and successfully complete them. The US market is huge, and the demand for energy has never been greater, engineering could become a huge player in the North American energy market by taking on these types of projects. However, there are many regulatory issues that need to be overcome, such as tax issues, and government policies, before expansion into the United States would be possible.

### *3.1.3.3 Expansion Globally*

Some of the largest population centres in the world have the greatest demand for energy and new energy projects. China, India, Brazil, and Russia are areas in the world where there is an ongoing struggle to provide enough energy for the population to survive. These high population

centres need new energy infrastructure, and ELoB can become a provider for the design of this infrastructure. However, one of the stumbling blocks of entering these markets is the need to learn each country's standards, and in certain cases (China for example) to overcome the political climate.

#### *3.1.3.4 Strategic Partnerships*

Though not as drastic as the previous opportunities, strategic partnerships are probably more of a reality, and may eventually lead to realising the above stated opportunities. It makes sense for ELoB to work with other engineering firms to execute projects together. This would allow ELoB to slowly enter the market, with less risk, while at the same time establishing a separate identity from BC Hydro. These strategic partnerships can be small at first, or they could be as elaborate as larger joint ventures. The nature of the project would predict the type of partnership.

#### *3.1.4 Threats*

As stated before, for the last few years, one of BC Hydro's strategic directions points towards deregulation. When this happens, ELoB will not have a monopoly on BC Hydro's engineering work anymore. Below is a list of threats to ELoB:

- Competition for BC Hydro's Work
- Loss of Expertise
- Buyout of ELoB
- Too 'big' to be Efficient



#### *3.1.4.1 Competition for BC Hydro's Work*

With ELoB looking to possible deregulation in the future, there is a large probability that other engineering firms will bid for BC Hydro's work. The monopoly that ELoB has enjoyed for many years will not apply anymore. This means that ELoB must stay vigilante and be wary of what type of expertise other engineering firms have. Additionally ELoB must protect its interests with respect to expertise, personnel, and intellectual property, such as standards, and specifications. In order to survive the onslaught from other firms, ELoB must provide expertise second to none, and perform better than anybody else.

#### *3.1.4.2 Loss of Expertise*

If ELoB finally becomes an independent entity due to deregulation, there is a possibility that many of the staff it possesses will be in great demand. With other firms entering the market, they will be looking for personnel with expertise in energy infrastructure design. Where better to look than within ELoB. ELoB must continue to retain its employees, and make working for BC Hydro and ELoB attractive.

#### *3.1.4.3 Buyout of Engineering*

Another threat to ELoB is the possibility of a take-over. With the expertise and experience that ELoB has in the energy sector, it could be a prime target for a take-over. Though the chances of this are minimal, the threat still exists, especially when the intentions of the firm that would buy ELoB are not fully known. They may buy it for ELoB's expertise, or they may buy it to put ELoB out of business, and hence get rid of a competitor.

#### *3.1.4.4 Too 'Big' to be Efficient*

One of the difficulties for ELoB, if BC Hydro deregulates, will be the size of the organisation. If ELoB were to be compared to private firms in Vancouver for size, it would be the largest by far. With approximately 600 people, it would be very difficult for ELoB to compete in the local engineering market because it would be highly inefficient. Engineering needs to streamline its processes as well its staff in order to be competitive with other private firms. This may happen with the retirements that are expected in the next few years within ELoB, which would allow for a streamlined workforce. However, in addition to a streamlined workforce, ELoB has to make sure that its processes are maximised for efficient operations. Many job processes are duplicated, and can be simplified in order to cut costs and become more efficient.

One obvious example of this is the Print Distribution Request (PDR) process that is used to route construction drawings. First an engineer puts together a PDR which includes inputting of drawing numbers and routing information and hands this information of to the support staff. Next the support staff re-checks this information and sends the PDR off to a central PDR processing department. This central department re-inputs this information into a central database and sends the construction drawings to the 'vault' which is the drawing repository in ELoB. At this point the 'vault' staff once again input the essentials of the PDR request into their system, get the construction drawing copied, orders microfiche copies, and finally route the drawings to the required recipients. This whole process can take up to two weeks, and if simplified with the PDR only being input once into a central database system could be shortened significantly. This is one example of a process that needs to be looked at; there are many examples of these types of inefficient processes in ELoB.

### 3.2 Porter's Five Forces

As Michael E. Porter says<sup>12</sup>, the state of competition depends on five basic forces, Rivalry Among Existing Competitors, Bargaining Power of Customers, Bargaining Power of Suppliers, Threat of New Entrants, and, Threat of Substitutes (see Figure 6).

Together these five forces describe the state of competition in an industry. The weaker these forces are the greater chance for success in that industry.

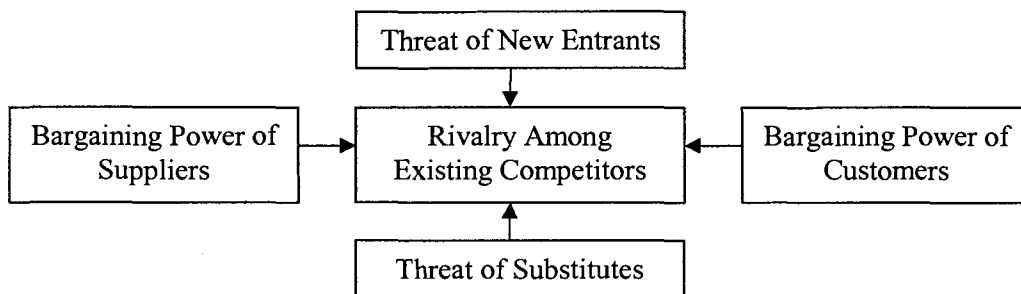


Figure 6. Porter's Five Forces

#### 3.2.1 Rivalry Among Existing Competitors

At this time there is not a lot of competition for ELoB because they are the sole suppliers of engineering expertise to the various lines of business at BC Hydro. However, this does not mean that there aren't competitors on the horizon, especially with deregulation a distinct possibility. If this possibility becomes reality, competition will definitely increase. There are firms in Vancouver that have the expertise to design and implement energy infrastructure projects, however, the range of their expertise are limited. In order for these firms to successfully compete with ELoB at this time, they would have to practically steal engineering talent from BC Hydro in order to be credible quickly. This possibility is a real threat, and to further exacerbate the issue, ELoB employs staff from competing firms as consultants. In this capacity, these

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<sup>12</sup> PORTER, Michael E. "How Competitive Forces Shape Strategy", Harvard Business Review, Boston, March-April 1979, Vol. 57, Issue 2, pp. 137-145

individuals are gaining, for their companies, knowledge on energy infrastructure design at the expense of ELoB.

With the possibility of a free market atmosphere in BC, there could be an influx of utility companies into BC. These companies would be the real competitors that ELoB should fear, as they would have the resources, expertise, and finances to bid for the current work that ELoB enjoys. There is also a possibility of companies engaging in Strategic Alliances with energy infrastructure leaders, in order to enter a market, and this would also be a threat of further competition. Finally there is also a chance that some suppliers, such as equipment manufactures, that may want to enter the engineering arena.

Since the electric utilities in BC are still regulated, competitors are restricted by government regulations, however, once deregulation occurs there will literally be a free for all for companies entering into the market. ELoB will have to market its expertise vigorously in order to keep a secure foothold on the market.

### ***3.2.2 Bargaining Power of Customers***

Generally in the engineering world, once a project is started, the bargaining power of customers is low. The biggest reason for this is the large switching costs associated with engineering projects, especially in the energy sector. Typically by the time the design of an engineering project has been completed, a large amount of money has been invested. This makes it very difficult for customers to wield any sort of power. At the present time this is almost a moot point because ELoB has a monopoly on projects that BC Hydro initiates. However, this does not mean that ELoB can provide a sub-par product. With deregulation and privatisation a

possibility, ELoB must keep its clients happy, therefore the bargaining power of its customers is mild.

If deregulation happens, there is definitely going to be many engineering companies for BC Hydro to choose from, and customer's power will become more important than it is now. BC Hydro will be able to wield that power by having a choice as to which engineering entity will carry out its projects. Additionally the sizes of the projects play another major factor. Generally energy infrastructure projects are very large, which means there is a lot at stake if there is bidding for these projects. Not getting a project could be the difference between life and death for companies such as ELoB in a free market atmosphere.

At present BC Hydro current strategy is to keep ELoB as a strategic part of its business. This means that bargaining power of customers is not a huge issue for ELoB today, a change in the market to deregulation could have drastic consequences. In the future customers may wield a lot more power. So essentially ELoB must keep its reputation trustworthy and its expertise sharpened in order to compete in the changing marketplace.

### ***3.2.3 Bargaining Power of Suppliers***

Bargaining power of labour suppliers currently is an interesting area because it is predominantly made up of ELoB's own employees. Basically the main suppliers are the engineers, technologists and other support staff that carry out day to day operations. The most important of this group are the technologists and engineers. There is a shortage of engineers in today's market, in particular for energy infrastructure projects. Furthermore many of the senior engineers are retiring in the next 5 to 10 years. This means that the engineering staff wields a high degree of power. It is easy for engineers to move from company to company, but for ELoB

to train new engineers is highly time consuming, and very expensive. On the other hand are the technologists and support staff who are a part of the COPE union, which inherently gives power to the employees.

Other suppliers include equipment and materials suppliers. These suppliers hold some power. For example many large projects can be brought to a standstill, if major equipment cannot be procured in time for the deadlines. It is common for equipment associated with energy infrastructure projects to have delivery duration in terms of years. So essentially these types of suppliers can wield some degree of power. Materials suppliers on the other hand are interchangeable, and therefore have low bargaining power.

Overall the bargaining power of suppliers is medium to high. Engineering must be cognisant of treating its employees properly in order to extract the expertise they possess, while at the same time keeping an eye on the bottom line. There is a delicate balance to be struck when dealing with suppliers, as is evidenced by equipment and materials suppliers.

#### ***3.2.4 Threat of New Entrants***

The best way to characterise threat of new entrants is to look at the barriers to entry. Within any engineering industry, the biggest barrier to entry is considered knowledge and expertise. Without this it is impossible for new entrants to succeed. Within the energy industry it is doubly important because of the specialised nature of the work. In some cases the jobs are so specialised that only employees with doctorate or masters degrees can fill these positions. It is very difficult for new entrants to find this sort of talent, and then integrate their specialised skills within their organisations in order to enter a new market.

Another significant barrier to entry is the up front capital required to initiate projects of the size undertaken in the energy infrastructure industry. Many firms will not have access to this type of capital, and even if they do, the financing intricacies and the complexity of putting together these massive contracts makes it difficult for new entrants.

Finally there are cost disadvantages to new entrants, no matter what their size, or how much money they have. Entrenched companies have the inside line to proprietary knowledge, access to materials and equipment, in place technologies, and often government approvals or favourable relationships with clients.

At this point a threat of new entrants is low, however, with the possibility of deregulation competitors will eventually catch up to ELoB and the threat from these entrants will become reality.

### ***3.2.5 Threat of Substitutes***

Essentially there is not a real threat of substitute to ELoB, because it is so specialised in so many ways with regards to energy infrastructure. There are many different disciplines of engineering that come together to complete energy infrastructure projects, and it is difficult for other organisations to amass expertise to compare to ELoB. Another stumbling block for other organisations is adhering to or learning new regulations in terms of engineering codes and specifications as well as certifications for employees. These factors make it difficult for other firms to be threat to ELoB at this time. However, all of these factors can be overcome with time, and in the future ELoB must be cognisant of emergent competitors.

### 3.2.6 Summary of Porter's Five Forces

Essentially there is not a real threat to ELoB at the moment. Figure 7 shows a summary of Porter's Five Forces as applied to ELoB. Clearly, except for bargaining power of suppliers, all other forces are fairly weak which suggests that ELoB can successfully be a leader in this industry. However, with deregulation a possibility, ELoB will have more difficulty in sustaining their leader position.

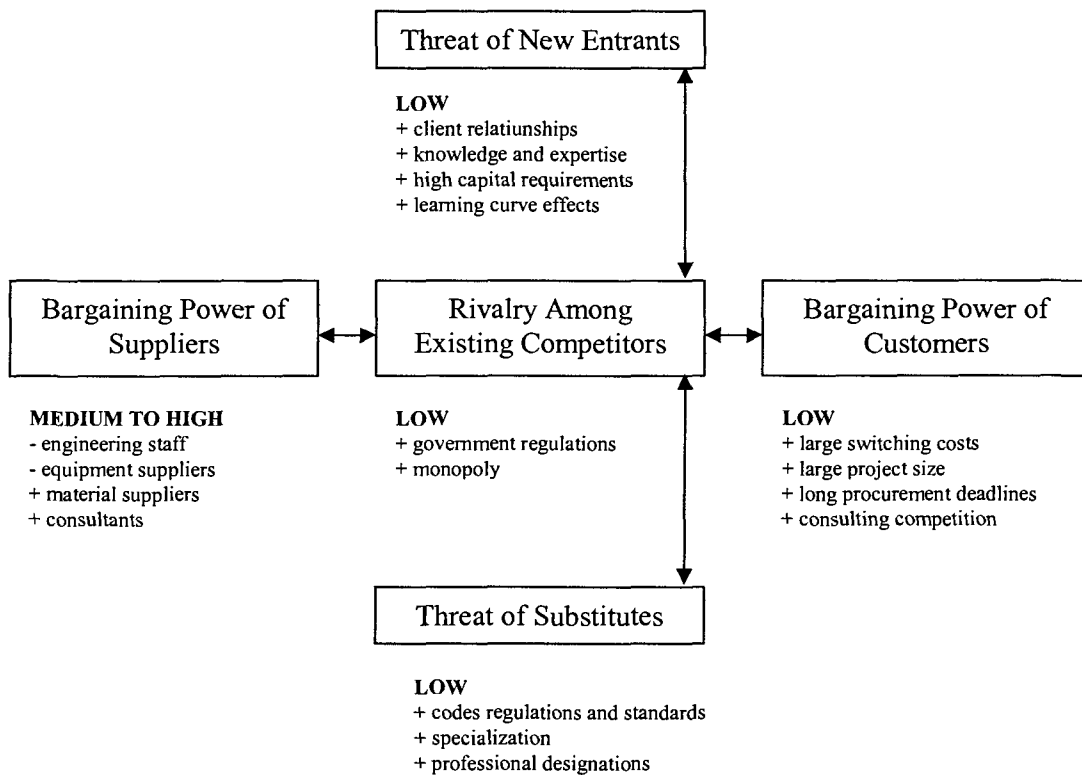


Figure 7. Summary of Porter's Five Forces



## 4 INTERNAL ANALYSIS

The internal analysis of the ELoB within BC Hydro will be carried out using Michael E. Porter's process view of an organisation called a value chain<sup>13</sup>. Porter's value chain includes various primary and secondary or support activities, when analysed together give a customer a level of value that is greater than the cost of the activities, and hence result in a profit margin. Figure 8 illustrates Porters value chain.

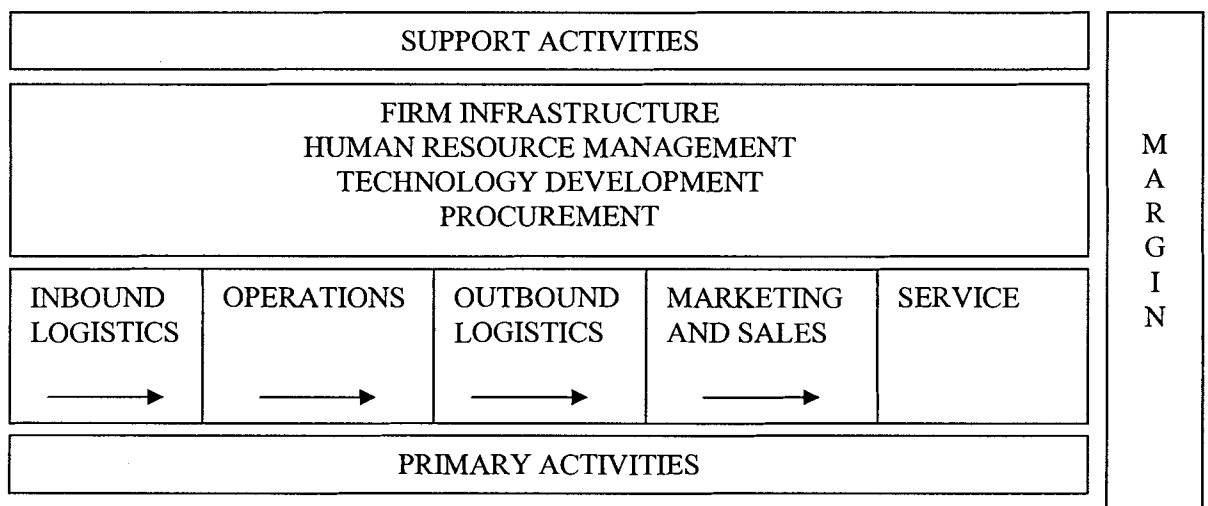


Figure 8. The Porter Value Chain

### 4.1 Primary Activities

As shown in Figure 8, the primary activities include:

- Inbound logistics
- Operations
- Outbound Logistics
- Marketing and Sales
- Service

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<sup>13</sup> PORTER, Michael E., Competitive Advantage: Creating and Sustaining Superior Performance, The Free Press, New York, 1985

Generally inbound and outbound logistics are a better fit for manufacturing operations, however, we will try to relate these primary activities to ELoB in the best way we can.

#### ***4.1.1 Inbound Logistics***

Strictly speaking in the process view of the value chain, inbound logistics is the receiving and warehousing of raw materials, and their distribution. This would include relationships with suppliers as well as transportation, materials handling and storing, and communications regarding these activities.

In regards to engineering practice, this would include a variety of up front activities, such as scope, estimating, and scheduling as well as record management of these activities. In many cases the raw materials for engineering projects is the knowledge that the employees possess, and of course this knowledge is stored in a variety of formats. The knowledge can be stored in design files, in computer files as drawings, or in the memories and minds of the individual engineers. Additionally there is a system needed to communicate this information, and to transfer this information so it is of use. Computer platforms are an excellent way to do this. Specifically designed programs for specific tasks can handle the requirements for an efficient knowledge storage and transfer platform.

Within ELoB all of these different ways of receiving and storing data and knowledge are employed. There is a drawing vault, where drawings for projects are received, stored, and available for checking out as well. There are programs such as PeopleSoft, InfoTrac, InfoPM, Indus Passport that receive and store information. There are detailed design files that are kept on various projects. And finally there are the engineers themselves that receive, process, and extract information from their own knowledge.

#### ***4.1.2 Operations***

In Porter's process view of the value chain, operations are all the activities that transform inputs into finished products or services. For engineering firms, clearly the finished product is the construction of the given project. However, the finished product could also include design drawings, different types of studies, even project management practices. Services provided by engineering firms may include planning services, project management services, and construction management services.

ELoB in particular provides first and foremost design services which includes engineering, design, and drafting. All the design is done in-house, and within the design cycle is included project management services as well as construction management services. However, ELoB does not provide actual construction services. The projects are contracted out to contractors, or given to BC Hydro's internal construction crews.

#### ***4.1.3 Outbound Logistics***

The process view of outbound logistics includes activities that are needed to collect, store, and distribute outputs, basically the warehousing and distribution of finished goods. Some of the activities that engineering firms carry out, in order to satisfy the above criteria include project and construction management, and record management. Additionally maintenance programs, ongoing programs, testing and commissioning of projects would also fall under this category.

ELoB carries out many of these activities, especially in terms of project and construction management. Of course these activities are also found in operations, but they are just as

important in outbound logistics. Project management looks at the whole life-cycle of a project, therefore it is integral in this activity. Construction management is important in the distribution of finished goods, and hence must be included in this activity.

Record management is a must for ELoB because of the liabilities associated with large construction projects. Additionally maintenance programs are a large part of servicing large plants and other energy infrastructure in order to assure proper operations over the life of the project. Ongoing programs are also important as they may look at deficiencies in older plants or endeavour to service older plants so that they may adhere to current rules and regulations.

#### ***4.1.4 Marketing and Sales***

The process view of the value chain looks at marketing and sales as the activities that let buyers educate themselves about products or services, and in turn allow for the generation of sales. For private engineering firms, this activity is the basis of generating interest in the firm, and hopefully revenue. This makes marketing and sales an important part of the firm's competencies. However, for government agencies such as BC Hydro it is not as important as there is not an urgency to procure customers.

With ELoB still being a part of a Crown Corporation, marketing and sales is an unimportant activity, and consequently there is not a marketing and sales department. In the future if deregulation becomes a reality, this activity will become important. Since ELoB does not have expertise in this activity, it is likely that marketing and sales could be outsourced.

#### **4.1.5 Service**

In Porters value chain, the final primary activity is service. Service includes all activities that are required for a product or service to work properly after these products or services are sold or delivered. Generally in private engineering firms, ongoing service activities may include maintenance as well as evaluation of the project. Other activities may include closing of the project as well as certificates of completion. There also may be a warranty period where the system is monitored and the knowledge from these procedures is recorded for future use.

Within ELoB as-built drawings (essentially drawings that record changes during the construction period) are issued to satisfy this activity. Additional activities may include maintenance as well as performance evaluations of finished projects, and even design warranty work. Future changes to rules and regulations may also be included, so further engineering to satisfy these rules may be carried out.

## **4.2 Secondary/Support Activities**

As shown in Figure 8, the support activities include:

- Firm Infrastructure
- Human Resource Management
- Technology Development
- Procurement

### **4.2.1 Firm Infrastructure**

In Porters process view of a firm, firm infrastructure includes such things as organisational structure, control systems, and company culture. In private engineering firms some

of the activities would include quality control, accounting practices, legal issues, governmental issues, public affairs, and the everyday management of the firm.

For ELoB the important activities include finance, regulatory issues, quality control, and general day-to-day management. Many of the legal and governmental issues would be dealt with by BC Hydro's other departments.

#### ***4.2.2 Human Resources Management***

Human resources management consists of all activities that involve recruiting, hiring, training, developing and compensating personnel. Of the above activities, the recruiting is a function of BC Hydro's HR department. Engineering performs all the other activities via their own HR department. Additionally ELoB also initiates performance reviews as well as other staff programs.

#### ***4.2.3 Technology Development***

Technology development in the process view of thinking is basically the technologies to support value based activities. The only real technology development that ELoB engages in is the databases that it keeps and engineering tools it has developed. Otherwise ELoB Engineering does not have a formalised technology development aspect to its organisation. Powertech, the R&D arm of BC Hydro carries out most of the research and development work for Engineering. Other technology work required by ELoB is essentially outsourced.

**4.2.4 Procurement**

Procurement is the acquisition of inputs or resources for a firm. These acquisitions include materials, supplies and equipment. ELoB has a project equipment department whose role it is to procure major pieces of equipment for ELoB projects. Other supplies and materials are procured on a project by project status. Figure 9. Shows a Summary of ELoB’s Value Chain

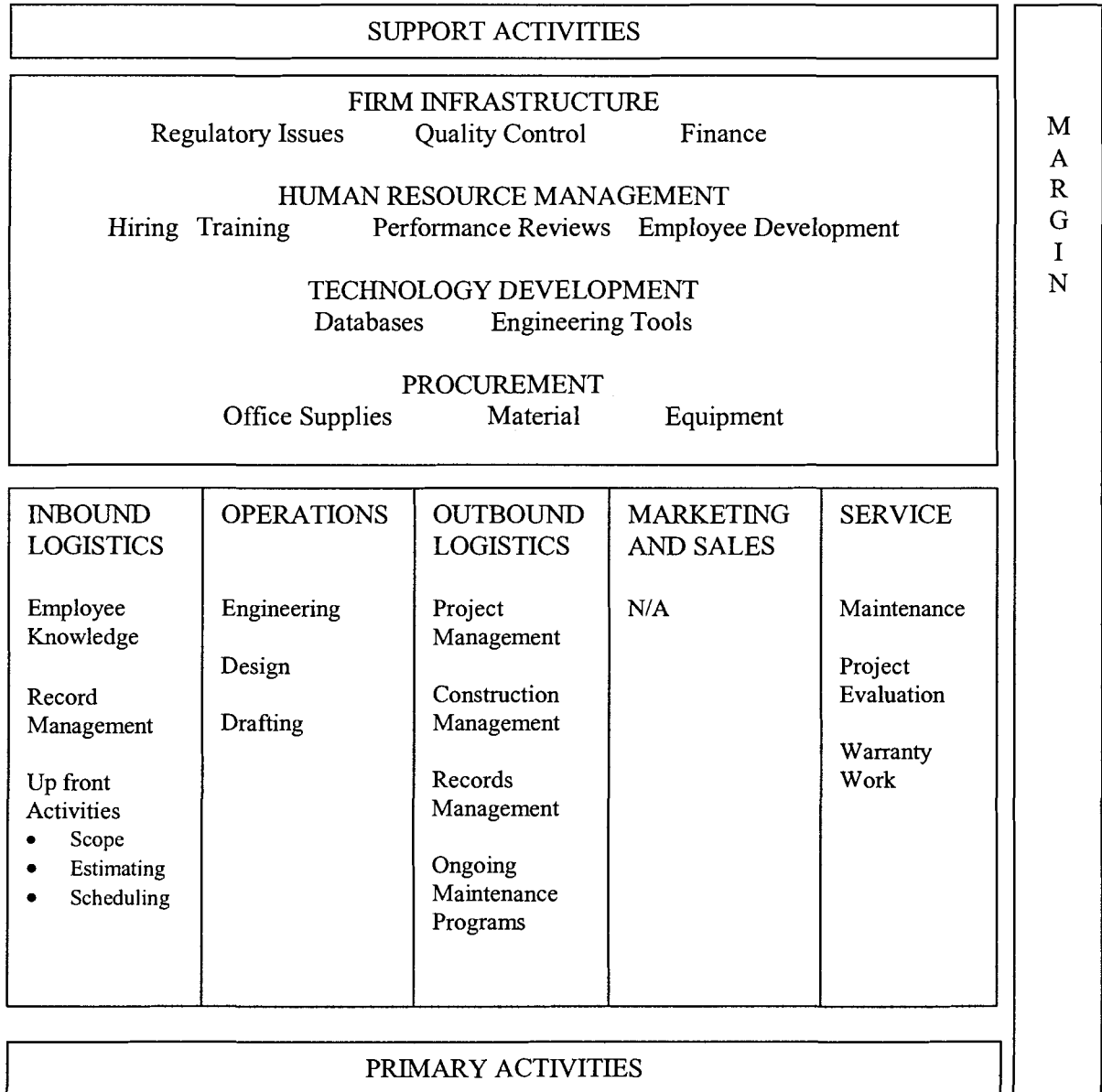


Figure 9. Summary of ELoB’s Value Chain

## 5 FULCRUM ANALYSIS

The fulcrum analysis, which is a situational assessment and prognosis, will take into account the Internal Analysis and the Industry Analysis and assess the current strategy and performance<sup>14</sup> of Engineering within BC Hydro. The fulcrum analysis will also look at the current strategy as related to Strategic Alliance's and come to decision on whether it is appropriate or not. The analysis will also provide a strategic direction to follow, which will allow for recommendations and conclusions in subsequent sections.

### 5.1 Summarising Using GE/McKinsey Matrix

In order to analyze and assess the current strategy and performance, we need to ask certain questions such as: Is this industry attractive? What is happening competitively in this industry to change the competitive landscape? Does ELoB have a competitive advantage?

Some of these questions have been answered in the Industry and Internal Analysis, however to get a better picture of where ELoB is going strategically, the GE/McKinsey Industry Attractiveness/Business Strength Matrix<sup>15</sup> will be utilized. The GE/McKinsey Matrix is a 3x3 matrix, which maps Business Unit Strength versus Industry Attractiveness.

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<sup>14</sup> Boardman, Anthony E., Shapiro, Daniel M., Vining, Aidan .R., "A Framework for Comprehensive Strategic Analysis". Journal of Strategic Management Education, 2004, Senate Hall Academic Publishing

<sup>15</sup> Ibid



		Business Unit Strength		
		Low	Medium	High
Industry Attractiveness	High	S	I	I
	Medium	H	S	I
	Low	H	H	S

Figure 10: GE/McKinsey Matrix

As Figure 10 shows, the resulting matrix has a total of nine cells. If a business unit falls in the three cells marked “I” then it is in a strong position and should be considered for further Investment and growth. If a business unit falls in the three diagonal cells marked “S” then it is of moderate attractiveness and ELoB should consider Selectively enhancing these business units to generate earnings. Finally if a business unit lands in the three cells marked “H”, then this business unit is of low overall attractiveness and it should be considered for Harvesting or divesting.

For each axis, the business units analysed will be the ones that were identified as the six divisions of ELoB as follows:

- Transmission Engineering
- Distribution Engineering
- Generation Engineering

- Chief Engineer's Office
- Business Practices
- People Development

Each of these divisions or business units will be scored based on certain variables as linked to Industry Attractiveness and Business Unit Strength in the present and in the future. In order to give a quantitative measure to the analysis, each variable will be given a score out of five based on the Industry and Internal analyses carried out earlier in this paper. These overall scores will then be mapped on the GE/McKinsey Matrix to give a picture of Strategic Implications for the present as well as the future.

## **5.2 Industry Attractiveness**

Industry attractiveness is based on variables as ascertained from the industry analysis. In order to give a quantitative measure to the analysis, each variable will be given a score out of five based on the industry and internal analysis carried out earlier in this paper. This analysis will be carried out for the present as well as the future. The variables to be utilised for the overall Industry Attractiveness score were determined to be as follows:

- Market Growth Rate
- Market Size
- Expertise and Knowledge
- Industry Profitability
- Industry Rivalry
- Industry Threats
- Industry Opportunities

### 5.2.1 Market Growth Rate

As shown in the industry analysis earlier, the market growth rate is projected to be positive for ELoB. The demands for electricity are increasing, and therefore there is a demand for infrastructure related to Transmission and Distribution Engineering and not so much for Generation Engineering. It also seems that the HR side of things is not the core of the business for ELoB, consequently this indicates that the growth rate for these divisions will decrease as less emphasis is placed on these activities, but is relatively strong at the moment. So the scores for the six divisions now and into the future are:

Table 1. Market Growth Rate

Market Growth Rate	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Present	4	4	1	2	4	2
Future	3	3	0	1	1	0

### 5.2.2 Market Size

The market size will grow proportionate to the growing demand for energy. This means that Transmission, Distribution, and Generation Engineering market size will increase. The other divisions of Engineering will all stay more or less static, with some attention being paid to the Chief Engineers Office. Table 2 shows market size numbers.

Table 2. Market Size

Market Size	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Present	3	3	3	0	0	0
Future	4	5	5	1	0	0

### 5.2.3 Expertise and Knowledge

The knowledge base for ELoB is being eroded as the recruiting and retaining of new engineers is a difficult endeavour within BC Hydro. Also with the loss of senior staff due to retirements, there is a huge loss of expertise and knowledge. This specifically hits Transmission, Distribution, and Generation Engineering hard. The effects of this will also be felt in the other three divisions.

Table 3. Expertise and Knowledge

Expertise and Knowledge	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Present	4	4	5	3	3	2
Future	2	2	4	4	0	1

### 5.2.4 Industry Profitability

At the present much of the profits generated by ELoB are retained from Generation and Distribution Energy. In the future, this will not change; however, profits from distribution will grow as the population of BC grows. The other three divisions will see profits diminish as the status quo is upheld.

Table 4. Industry Profitability

Industry Profitability	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Present	1	3	5	1	1	0
Future	0	5	5	0	0	0

### 5.2.5 Industry Rivalry

Naturally as the market size increases, proportionately industry rivalry will increase. In the event that deregulation occurs, there will be new entrants that will directly compete with ELoB in all facets of the business. There will be a demand for new and existing employees, which will help Business Practices and People Development to keep busy into the future.

Table 5. Industry Rivalry

Industry Rivalry	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Present	2	2	1	0	2	2
Future	4	4	5	3	2	3

### 5.2.6 Industry Threats

The increase in industry rivalry will go hand in hand with industry threats. As the pool of new entrants into the industry increases, the threats to ELoB will increase. There will also be a demand for knowledgeable employees with skills and expertise that are highly sought after. This could mean two things, the first being that ELoB will lose valuable employees to their competitors. Secondly the pool of hydroelectric savvy employees will expand which will give ELoB the opportunity to grow their business.

Table 6. Industry Threats

Industry Threats	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Present	1	2	1	2	1	2
Future	4	4	5	2	2	3

### 5.2.7 Global Opportunities

At the present global opportunities are minimal for ELoB, which is reflected by the scores. However, with deregulation a future possibility, the floodgates that were closed due to government regulations could be opened. This would allow ELoB to get involved in the global communities and showcase their extensive skills worldwide. It would also allow the Chief Engineer's office and HR to access a larger pool of potential employees.

Table 7. Global Opportunities

Global Opportunities	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Present	1	0	1	0	0	0
Future	3	3	5	1	0	1

Table 8 and 9 show a summary for Industry Attractiveness for the present and the future with a total out of 35.

Table 8. Summary of Present Industry Attractiveness

	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Market Growth Rate	4	4	1	2	4	2
Market Size	3	3	3	0	0	0
Expertise & Knowledge	4	4	5	3	3	2
Industry Profitability	1	3	5	1	1	0
Industry Rivalry	2	2	1	0	2	2
Industry Threats	1	2	1	2	1	2
Global Opportunities	1	0	1	0	0	0
<b>TOTALS</b>	<b>16</b>	<b>18</b>	<b>19</b>	<b>8</b>	<b>11</b>	<b>8</b>

Table 9. Summary of Future Industry Attractiveness

	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Market Growth Rate	3	3	0	1	1	0
Market Size	4	5	5	1	0	0
Expertise & Knowledge	2	2	4	4	0	1
Industry Profitability	0	5	5	0	0	0
Industry Rivalry	4	4	5	3	2	3
Industry Threats	4	4	5	2	2	3
Global Opportunities	3	3	5	1	0	1
<b>TOTALS</b>	<b>20</b>	<b>26</b>	<b>29</b>	<b>12</b>	<b>5</b>	<b>8</b>

### 5.3 Business Unit Strength

Business Unit Strength is also based on variables as ascertained from the industry analysis. In order to give a quantitative measure to the analysis, each variable will be given a score out of five based on the industry and internal analysis carried out earlier in this paper. This analysis will be carried out for the present as well as the future. The variables to be utilised for the overall Industry Attractiveness score were determined to be as follows:

- Market Share
- Growth in Market Share
- Brand Equity
- Distribution Channel Access
- Production Capacity
- Profit Margins (relative to competitors)

### 5.3.1 Market Share

As shown in the industry analysis earlier, the market share is projected to decrease for ELoB. With deregulation a possibility it is certain that the future landscape of utilities in BC will see multiple competitors. This most definitely means a shrinking market share for ELoB into the future, however at present it is stable at a near monopoly. It also seems that the HR side of things is not the core of the business for ELoB, consequently this indicates that market share for these divisions will decrease as less emphasis is placed on these activities, but is relatively strong at the moment.

Table 10. Market Share

Market Share	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Present	5	5	5	1	3	1
Future	3	3	3	2	2	2

### 5.3.2 Growth in Market Share

The growth in market share should stay steady for the core divisions of ELoB. This is most likely due to the fact that other competitors will grow as ELoB grows, so there will be no real advantage into the future.

Table 11. Growth in Market Share

Growth in Market Share	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Present	0	0	0	3	3	0
Future	0	0	0	2	2	2



### 5.3.3 Brand Equity

ELOB brand equity is at an all time high because of its association with BC Hydro. With new future entrants into the industry, this brand equity may not be as strong. Additionally if ELOB eventually separates from BC Hydro, its brand equity will be further eroded. In order for brand equity to be as strong in the future as it is now, ELOB needs to make a concerted effort to stay ahead of its competitors and also stay visible to the citizens of BC.

Table 12. Brand Equity

Brand Equity	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Present	5	5	5	0	2	1
Future	3	3	2	2	4	2

### 5.3.4 Distribution Channel Access

All the core divisions of ELOB must be able to get their product to their clients, mainly BC residents. This will require a larger portion of the marketing pie as well as business development opportunities. Business Practices as well as the Chief Engineers office will need to step up in the future to keep the distribution channels accessible to ELOB operations.

Table 13. Distribution Channel Access

Distribution Channel Access	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Present	4	3	5	0	2	1
Future	3	3	2	2	3	2

### 5.3.5 Production Capacity

It linearly follows that if the market share may decrease into the future, then production capacity will also decrease, especially if no new plants are constructed. The growing demand for electricity needs to be met, however if the status quo is held, then the production capacity will decrease as the existing infrastructure become less efficient with old age. This will require more of a maintenance expertise by ELoB, thus allowing the Chief Engineers office to grow.

Table 14. Production Capacity

Production Capacity	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Present	4	3	3	1	2	1
Future	2	2	1	4	3	2

### 5.3.6 Profit Margins

With the status quo upheld into the future, profit margins are sure to fall dramatically. This will mean that new and innovative ways of running ELoB will have to be found in order for the organisation to survive. Much of this burden will fall on the shoulders of Business Practices and the Chief Engineers office.

Table 15. Profit Margins

Market Share	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Present	5	5	5	1	3	1
Future	0	0	0	3	3	0

Table 16 and 17 shows a summary for Business Unit Strength for the present and the future with a total out of 30.

Table 16. Summary of Present Business Unit Strength

	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Market Share	5	5	5	1	3	1
Growth in Market Share	0	0	0	3	3	0
Brand Equity	5	5	5	0	2	1
Distribution Channel Access	4	3	5	0	2	1
Production Capacity	4	3	3	1	2	1
Profit Margins (relative to competitors)	5	5	5	0	2	0
<b>TOTALS</b>	<b>23</b>	<b>21</b>	<b>23</b>	<b>5</b>	<b>14</b>	<b>4</b>

Table 17. Summary of Future Business Unit Strength

	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Market Share	3	3	2	2	2	2
Growth in Market Share	0	0	0	2	2	2
Brand Equity	3	3	2	2	4	2
Distribution Channel Access	3	3	2	2	3	2
Production Capacity	2	2	1	4	3	2
Profit Margins (relative to competitors)	2	3	4	2	2	1
<b>TOTALS</b>	<b>13</b>	<b>14</b>	<b>11</b>	<b>14</b>	<b>16</b>	<b>11</b>

Below is a summary of overall Business Unit Strength Totals and Industry Attractiveness

Totals for the present and the future in Table format:

Table 18. Overall Tabulation for GE/McKinsey Matrix for the present

	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Business Unit Strength	23	21	23	5	14	4
Industry Attractiveness	16	18	19	8	11	8

Table 19. Overall Tabulation for GE/McKinsey Matrix for the future

	Trans. Eng.	Dist. Eng.	Gen. Eng.	Chief Eng. Office	Business Practices	People Development
Business Unit Strength	13	14	11	14	16	11
Industry Attractiveness	20	26	29	12	5	8

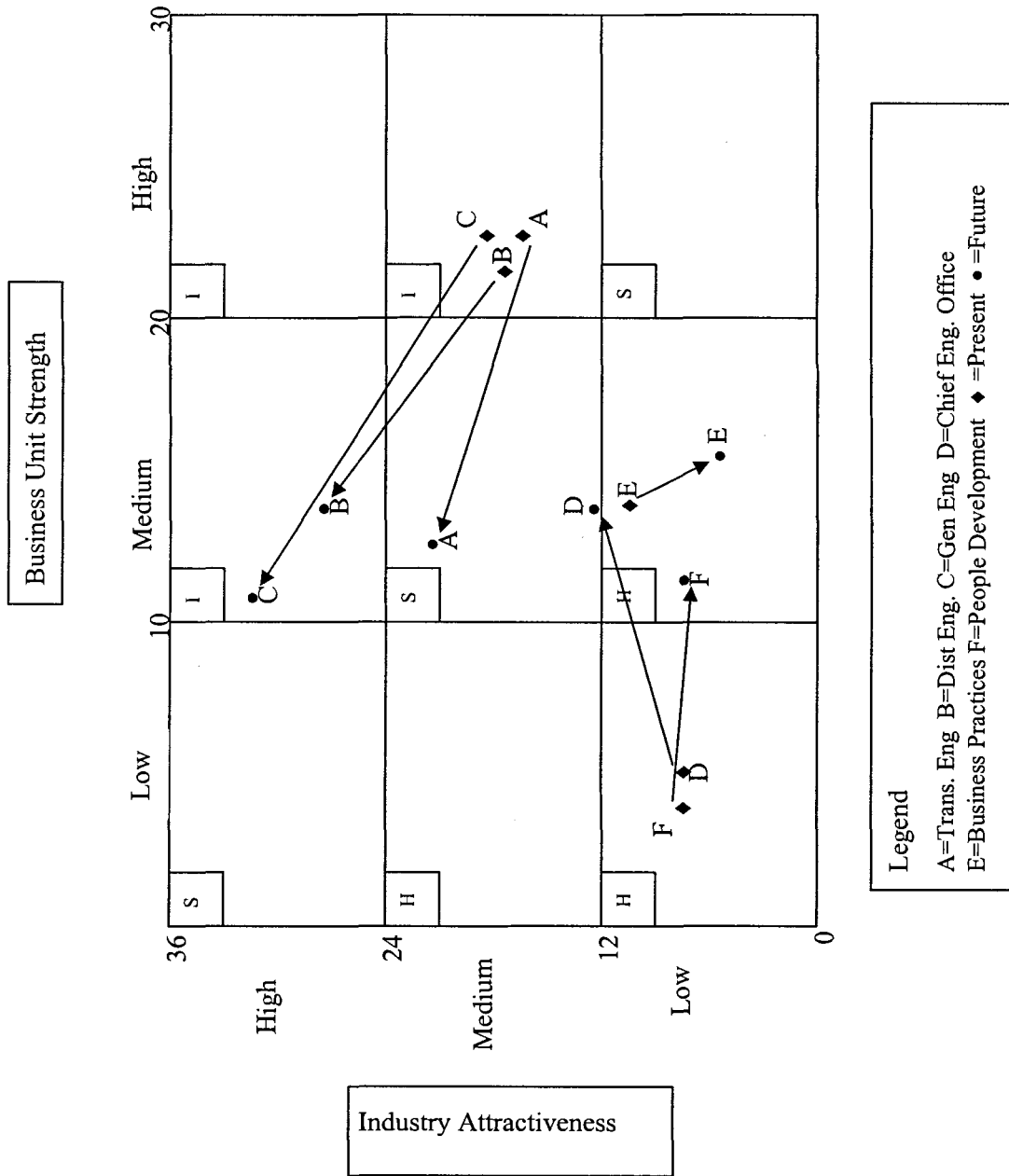


Figure 11. GE/McKinsey Matrix for ELoB

Figure 11 shows the completed GE/McKinsey matrix for ELoB at BC Hydro. Clearly it shows that the three important divisions in ELoB are Transmission Engineering, Distribution Engineering and Generation Engineering. Each of these divisions is positioned presently in the Investment and Growth portion of the matrix. However with more competition on the horizon, it is assured that without any strategic change, ELoB will certainly become less attractive as they have moved to the Selective enhancement portion of the matrix. Business Practices and People Development, which are considered largely overhead, are areas of ELoB that fall within the Harvest/Divest portion of the matrix. The Chief Engineers Office is an interesting division as it is the smallest group, yet the most experienced group in ELoB. The current analysis shows that the group could be divested, however in the future they will become more prominent and a candidate for selective enhancement and maybe more.

#### **5.4 Future Performance Under Status Quo**

It is clear in order for ELoB to prosper, the core business has to be grown. The most promising divisions of ELoB, Transmission, Generation and Distribution have to be nurtured in order for ELoB to be successful. If the status quo is upheld in the face of changing times, most notably deregulation, ELoB is in danger of losing its leading position in the marketplace. Figure 11 clearly shows a declining market in terms of growth rate and market size. With this come the consequences of increasing rivalry in the industry as well as increasing threats from other utilities that wish to move into the market. Additionally it will be increasingly difficult for ELoB to sustain non-core business units such as People Development and Business Practices. There is a need for these divisions to be managed by outside firms in order to streamline ELoB. However, there is a danger in this because the strategic thinking in people development has to change in order to break the cycle of weak succession planning. Clearly this is an opportunity for ELoB to

strike new Strategic Alliances with firms that specialise in Human Resources and Business Practices, with a strict focus on the terms of the alliances based on ELoB strategic direction and needs.

The most disturbing consequence of towing the status quo for ELoB is the declining knowledge and expertise of ELoB employees. As shown in the SWOT analysis the backbone of ELoB is their people and the knowledge and expertise they have gained from managing the system to date. At the same time this is a double-edged sword as the succession planning in ELoB is weak. Employee retention is also becoming increasingly difficult as many older employees are retiring, and younger employees are leaving for more dynamic and better paying jobs. In the long run, this obviously will be the single most important factor in the downfall of ELoB. The effects of this are far ranging, as ELoB will become less competitive in the market place, especially if rival firms continue to improve their expertise at the expense of BC Hydro and ELoB.

A direct casualty of standing pat will be the Chief Engineers office. The Chief Engineers Office was originally founded for the express purpose of providing technical leadership to the ELoB. With the ever-dwindling human resources and expertise and knowledge there is a fear that the technical leadership provided by the Chief Engineers Office will be insufficient to lead ELoB into the future. However the GE/McKinsey Matrix seems to infer that the Chief Engineer's office will grow and must be selectively enhanced in order for ELoB to thrive. In order for this to happen, ELoB needs to make the Chief Engineers office a priority while at the same time adding value to the operation.

## 5.5 Strategic Direction

All of the preceding analysis points to ELoB becoming more efficient by concentrating on their core business which is clearly Transmission Engineering, Distribution Engineering, and Generation Engineering. ELoB needs to invest in these core divisions, at the same time they need to continue to be leaders in their markets. This echoes what was earlier anticipated in the Literature analysis section in that ELoB sees itself as a leader in its industry and ELoB needs to defend its position when entering a Strategic Alliance. However in certain areas such as Business Practices and People Development, ELoB needs to come to grips that it needs help in order to *catch up* and become competitive and more efficient. In some cases ELoB may even need to restructure in order to maintain its leader role.

Once the decision is made to utilize Strategic Alliances to defend ELoB's position, the next question is where in ELoB will Strategic Alliances be profitable and necessary based on the fulcrum analysis. Clearly future performance under the status quo is lagging as shown by the GE/McKinsey matrix analysis. This means in order for:

- Transmission, Distribution, and Generation Engineering to *remain* or *defend* its position as a leader
- Chief Engineers Office to *catch up*, and
- Business Practices and People Development to *catch up* or *restructure*;

a strategy has to be put in place in order to analyse the situation and make decisions on what areas of the business can benefit from Strategic Alliances. Of course the type of alliance chosen will be based on what criteria need to be satisfied for ELoB to stay a leader. This will be determined in the next section, the solution analysis.



## **6 SOLUTION ANALYSIS**

The solution analysis will look at the Internal Analysis and the Industry Analysis in conjunction with the fulcrum analysis and generate strategic alternatives for ELoB in regards to Strategic Alliances. The solution analysis will also establish goals and evaluation criteria. Each of the strategic alternatives will then be evaluated in reference to the goals.

### **6.1 Strategic Alternatives**

Based on the Internal Analysis and the opportunities portion of the SWOT analysis, there are alternatives available to ELoB in regards to Strategic Alliances in order to move forward into the future successfully. The possible alternatives at this time are as follows:

- Status Quo
- Partner With Klohn Crippen Berger
- Partner with Local Utilities
- Partner with International Utilities
- Ex-Employees as Strategic Alliance Partners
- HR and Business Practices Strategic Alliances

#### ***6.1.1 Status Quo***

If Status Quo is the strategy that the ELoB decides to take, it is a dangerous decision based on this analysis so far. The Fulcrum Analysis clearly shows that the status quo will erode the market position and market share that ELoB currently enjoys in BC. With deregulation a real possibility in the utility industry in BC, a stagnant approach by ELoB will essentially ensure failure into the future. Utility companies will enter the marketplace in BC that will be able to take advantage of deregulation by taking a large chunk of the business that ELOB currently enjoys.

The status quo alternative could have a disastrous effect on ELoB ability to attract and retain employees. As it is the lack of proper succession planning and the retirement of many of the senior employees has put ELoB in a vulnerable position. With so much knowledge being lost, ELoB's position as a leader will be in jeopardy. Additionally many employees on the technical side are being pushed into positions they may not be ready for, which means the quality of engineering will decrease, possibly to the point that ELoB may not be an attractive option for quality utility engineering. Again with the status quo option, the culture at BC Hydro will stagnate and the working environment will not be conducive for a positive workplace. However, the benefits and attractive working environment, in terms of lifestyle programs and flexible working hours, should initially keep BC Hydro an attractive option for many employees.

The status quo will also mean that ELoB will continue to do a lot of work that is of the maintenance variety. There are no new projects on the horizon that would keep ELoB excited and at the cutting edge of technology. Granted they are the leaders in maintaining the current system, there will come a time where many of the old employees will be gone, and the ELoB will be looked at as a maintenance specialist outfit. If this continues, and BC Hydro does not expand its current infrastructure, there is clearly a possibility that the expanding population of BC may suffer an energy crisis. If this happens, then ELoB would be ill-positioned to provide the required engineering services, and a great opportunity for growth would be thrown away.

The status quo option points to a shrinking market place, difficult working environment, and a loss of reputation for ELoB. This option may ultimately lead to the decline of ELoB as the primary supplier of engineering services for BC Hydro.

### ***6.1.2 Partner with Klohn Crippen Berger***

Klohn Crippen Berger is a local consulting company that was established in 1951 as a predominantly Geotechnical Engineering company. Since then they have grown and expanded into other engineering sectors such as Environmental, Transportation, Mining, Oil and Gas, Water Resources, and Hydropower. The latter two are the most important sectors in regards to ELoB. In fact Klohn Crippen Berger already has a handful of employees that work in the Generation Engineering division of ELoB on a temporary basis. This makes Klohn Crippen Berger a primary consulting candidate to partner ELoB in terms of a Strategic Alliance.

The primary question that arises is what type of Strategic Alliance should be struck. To answer this question, ELoB has to make a decision on two important variables. The first being what kind of resources ELoB is willing to use, and secondly what kind of retrieval of output ELoB expect from this type of alliance. The preceding analysis shows that ELoB ideally wants to maintain its status as a leader in the utility business within BC. One way of doing this is to have a project based joint venture. This works best when partners do not want to allocate a maximum amount of resources but they do want the alliance to create strategic value through a common organization. A project based joint venture with Klohn Crippen Berger would allow ELoB to stay at the technical forefront in terms of Generation Engineering while at the same time gaining expertise they otherwise would not have enjoyed. Additionally it would allow both companies to become more knowledgeable and reap the rewards with minimal risk in terms of resources allocated.

The secondary question is what effect a project based joint venture with Klohn Crippen Berger will have on ELoB with regards to market place, working environment, and employee morale. ELoB being the parent company would have control of the project, and therefore the

market share and market position for ELoB would increase. The possibility of deregulation in the future would in fact make this a positive arrangement, as ELoB would remain at the forefront of technology by entering project based joint ventures. The relationship aspect cannot be neglected, as the more project based joint ventures these two companies enter, the more comfortable they get with each other and directly more opportunities may come their way.

The one complicated and important variable for a project based joint venture to succeed would involve how to structure the joint venture in terms of personnel and chain of authority. It is inevitable that ELoB being the parent company in this Strategic Alliance, the authority and project management duties would fall into their domain. One of the challenges of this type of Strategic Alliance is in managing the working environment in terms of personnel. It has to be clear to the team members of a project based joint venture that they are working for a common goal, otherwise it is inevitable that problems may arise to the clash of different company cultures. If this factor is neglected, there will be problems with employees of both companies, which in turn may contribute to poor quality for delivery of projects.

### ***6.1.3 Partner with Local Utilities***

Another option is partnering with local, specifically provincial, utilities such as Terasen, West Kootenay Power, or other local Independent Power Producers(IPP's). These types of utilities have a very good knowledge of the BC marketplace. This allows them to do engineering work without a steep learning curve, which in turn would save money on projects, and also give a quicker turnaround on projects. The limitation with these types of companies is that they are clearly more focused on their own operations, and they would consider BC Hydro to be a threat to their business and therefore would be reluctant in partnering with them.

A likely type of alliance for these companies with ELoB would be a ad-hoc pool type alliance where the retrieval of output on ELoB part would be maximized while the amount of resources they allocate would be minimal. An example of this may be the use of standards and drawings loaned to a local utility in order to complete engineering work, where the benefits of this engineering work is reaped by ELoB. The local utility could almost be considered a consultant working for the ELoB. This arrangement would allow ELoB to sustain its market position while protecting itself from local utilities encroaching on potential projects.

Employees of ELoB would likely act as project managers as much of the engineering work would be done by the local utilities, with the final say on decisions still in ELoB's control. The one disadvantage of this type of arrangement is that the knowledge reaped from working on the project stays with the local utility. This could, in the long run, cause ELoB being dependent on these local utilities and slowly losing knowledge and expertise. However, it is important to note that many of these types of strategic partnerships are for smaller projects that do not add overall value to the knowledge base of ELoB.

As stated above an ad-hoc pool could allow ELoB to use local utilities as partners on projects that are not integral to ELoB core business. These types of alliances would allow ELoB to stay on top of the marketplace, reap the benefits of the project, while at the same time minimizing ELoB resources allocated to the partnership.

#### ***6.1.4 Partner with International Utilities***

This option is contingent on deregulation becoming a reality for BC Hydro, as there are far too many government regulatory issues to overcome if this option is pursued as a BC Crown Corporation. Additionally this option would work best if other free market utilities are the

candidates for partnership. The amount of work potentially available for a potential free market company like ELoB is very large. There is a need for new energy infrastructure in growing markets such as India and China. The demand for reliable energy in those marketplaces is mind boggling. The combination of ELoB knowledge and expertise coupled with the need for technical capability in these market places could be a marriage made in heaven. Closer to home companies such as TransAlta in Alberta, Ontario Hydro, and Bonneville Power Administration in Washington State, and Southern California Edison among others in the USA could be prime candidates for Strategic Alliances.

A deregulated ELoB would benefit from full blown joint ventures where both partners allocate maximum resources, and the retrieval of output is retained in the alliance itself. These types of Strategic Alliances would be akin to a new company or wholly owned subsidiaries. A joint venture would allow ELoB to enter into markets they otherwise couldn't enter alone with a positive spin-off of increasing their market share. It would also allow for ELoB brand to be recognized in markets that haven't been able to penetrate, thus opening up other opportunities for advancement.

Another distinct advantage would be the knowledge sharing that would occur for each company's employees. The close working quarters for long periods of time would only increase the knowledge and expertise of ELoB employees. However, for this to occur, the employees have to realize that this will only take place if they agree to work together. If the cultures of the two companies clash, there is every chance of a joint venture failing even before it is struck. As long as the resources from each partner are treated fairly, and knowledge sharing is a two way road, then a joint venture can be a very rewarding enterprise for both partners.

### ***6.1.5 Ex-Employees as Strategic Alliance Partners***

As many of ELoB employees are reaching retirement age, the expertise and knowledge of ELoB are being diminished. However, it is apparent that many of these employees are not ready to stop working as they are returning to work for BC Hydro as contractors and consultants. Additionally employees that leave to pursue other interests are another option. Some groups of ex-employees have even started their own companies and have been successful in penetrating the marketplace. This is a resource that ELoB needs to tap in order to stay competitive into the future, especially with succession planning at ELoB being weak. The familiarity of the employees with ELoB and vice versa, ELoB with the employees allows for a seamless working relationship. It would also allow for ELoB to get through the difficult period it is facing in replacing lost resources, while at the same time growing its product without diminishing its quality.

An alliance with ex-employees could be struck in a couple of ways. One is to use ex-employees as an ad-hoc pool for resources where ELoB reaps all of the benefits. Another option is to partner with groups of ex-employees that have established separate companies and are looking to penetrate the market place. This type of alliance would most likely be a consortium type of alliance where both partners offer resources and both partners reap the benefits of a partnership. The ex-employees would offer manpower, and ELoB would offer intellectual property such as standards, existing drawings, reports, trademarks and copyrights. This would allow the ex-employees to continue to work, ELoB could bridge the time needed for succession planning as well as continue to grow the market via this arrangement.

This type of partnership offers ELoB a degree of freedom in terms of resource issues. They can streamline their operations; however, eventually ex-employees will enter into full

retirement which could cause a loss of knowledge and expertise. ELoB needs to be cognizant of this consequence into the future, and make sure that the knowledge and technical lessons learned from these types of alliances are documented so future generations of engineers have access to them.

#### ***6.1.6 HR and Business Practices Strategic Alliances***

The last alternative involves looking at the part of ELoB which is not considered core to the business. HR and Business Practices are two areas of ELoB that are somewhat neglected as they are considered ‘overhead’, however attention to HR and Business Practices in ELoB is critical. These two divisions can and should be considered important to ELoB, as any company is only as good as the people it hires. However, HR and Business Practices could prosper from being an arms length away from ELoB, as it would make ELoB a more efficient organisation, provided that the HR priorities in terms of hiring employees are fully defined and understood by the partner firm. The structure of the alliance would be a joint venture type of partnership, where the HR and Business Practices employees would still work under the physical domain of ELoB. Only their compensation and allegiance financially will be with the speciality HR and Financial firms.

The largest disadvantage for this option is that some valued ELoB employees would be transferred to these new companies as employees. So the link to ELoB would be severed for these employees consequently causing a shift of loyalty. This could cause problems in terms of priority for work, and effect ELoB in a negative way. To alleviate this possibility, the contract should explicitly state that the employees’ first priority will be ELoB and that the directives of ELoB in terms of the philosophy for hiring should be adhered to religiously. The positive of this arrangement is that ELoB will be able to fully concentrate on their core business, while HR work



is managed by the Accenture's, and KPMG's of the world. A smaller and more efficient ELoB would be more competitive in a deregulated marketplace and more attractive to prospective clients as ELoB would be more affordable.

This arrangement would also allow ELoB to grow in the direction they want to, and that is to sustain and grow the market share it has in BC, while at the same time try to obtain additional energy infrastructure work in other parts of Canada, and even possibly internationally. A Strategic Alliance with large HR specialty firms such as Accenture and in the case of Business Practices an accounting firm such as KPMG could benefit all parties involved.

## **6.2 Goals**

The goals for ELoB are important for the business to move forward in an organized and systematic matter. The goals also communicate the vision of ELoB and combined with the strategy of the business, they give a framework on which ELoB should position itself in the market. The goals of ELoB as identified are:

- Sustain and Grow Market Share
- Attract Best People Available
- Grow the Core Business
- Protect Brand
- Maintain Control
- Remain Leader

### ***6.2.1 Sustain and Grow Market Share***

At present ELoB has a practical monopoly for energy infrastructure engineering in BC. This is largely due to BC Hydro being a Crown Corporation, and thus the government owns the

majority of energy infrastructure. This will change in the future as more IPP's enter the market and also de-regulation becomes a reality. Clearly a goal that ELoB has to set is to sustain and grow market share. With the growing demand for electricity in BC, there will be some type of construction boom in the future in terms of energy infrastructure. New substations, generating stations, and transmission lines will be needed. It is imperative that ELoB is positioned to provide as much of these services as they can. In order to do this ELoB has to take a proactive stance in preparing themselves to be the engineering provider of choice

### ***6.2.2 Attract Best People Available***

To become the engineering provider of choice, ELoB must have top-notch resources, especially people wise. This means actively training and then retaining their best employees. It also means always being aware of resources that are potentially available in the market place. An obvious factor required to keep high end talent is to properly compensate high-end talent. In some cases this may mean paying some employees a little more than market value. ELoB also has to sustain and continue to grow the lifestyles programs and improve the benefits package. Additionally they need to make working for ELoB an enjoyable experience, so team building and events that increase camaraderie are essential for this goal. If ELoB is recognised in having the best possible staff, then they are well positioned to reap benefits for themselves as well as their potential clients.

### ***6.2.3 Grow the Core Business***

As stated in the earlier analysis the core business for ELoB consists of Transmission Engineering, Distribution Engineering, and Generation Engineering. These three divisions account for the bulk of the work that ELoB does, hence ELoB should concentrate its efforts on growing these divisions in order for it to be successful. The demand for energy is only

increasing, and ELoB has to position itself as the expert in hydroelectric infrastructure engineering. One option for growth would be to pursue hydroelectric projects outside of BC, in order to increase the visibility of ELoB. Another is to strike Strategic Alliances with companies locally in order to grow the core business. Another possibility is to outsource the non-core divisions of ELoB in order to streamline operations. These divisions, in particular Business Practice and People Development are considered “overhead” and are not core to the business of ELoB. This proactive approach will allow for ELoB to be positioned competitively when deregulation does become a possibility.

#### ***6.2.4 Protect Brand***

BC Hydro is a brand that is recognised all across Canada as well as in the western United States. ELoB needs to leverage this recognition and make itself known in the industry as a supplier of first class energy infrastructure engineering services. This is not difficult as long as BC Hydro remains a Crown Corporation because ELoB is integral to BC Hydro and the services BC Hydro offers. All work done at substations, generating stations and transmission lines goes through ELoB right now. ELoB needs to remain at the forefront and continue to complete these projects to a high quality level, while at the same time marketing whatever brand they choose to spread. The difficulty will arise if deregulation takes effect and ELoB is spun off as a separate engineering services firm. What identity and brand will ELoB then project? It is imperative that ELoB brands itself with something similar to BC Hydro yet distinct enough that they will be recognised no matter what situation the electricity industry finds itself in. A natural choice right now and into the future is to brand itself as the engineering firm of choice for BC Hydro, and then build on that into the future.

### **6.2.5 *Maintain Control***

Another goal that ELoB should set for itself is to maintain control. ELoB needs to maintain control in all areas of the core business. Staff from ELoB must decide on the decisions that directly effect ELoB. ELoB must be in charge of its destiny for it to survive in the long run. Many of the decisions handed down by BC Hydro management may not always be to the benefit of ELoB, the senior staff has to ensure that they have a strong voice in whatever issues ELoB is involved in. Only then can ELoB come out of the transition period from Crown Corporation to deregulation in a strong manner. Additionally, any Strategic Alliances ELoB enters, it must be the parent company and in control of the alliance. This will allow ELoB to dictate what path the partnerships take and to clearly steer where ELoB wants to go in the marketplace.

### **6.2.6 *Remain Leader***

Another goal that is important to ELoB is to remain the leader in its industry. This is obviously easier said than done, especially as deregulation approaches. There are a number of things that ELoB can do in order for it to stay the leader. The most important is to concentrate on the core business. Transmission Engineering, Distribution Engineering, and Generation Engineering must continue to perform as the leader in each of its respective areas. Technically ELoB needs to be better than anybody and everybody else out there in the energy industry. This will allow other companies to naturally take the follower role.

## **6.3 Evaluation of Alternatives and Goals**

To evaluate the alternatives and the goals as set out above, a valuation matrix will be used. Each strategic alternative is scored out of 5 based on each of the six goals. The results of the evaluation which can be found in Table 20 should give an indication of which alternative is best suited for ELoB.

Table 20. Evaluation Matrix

	Status Quo	Klohn Crippen Berger	Local Utilities	International Utilities	Ex-Employees	Business Practices & HR
Sustain & Grow Market Share	1	3	3	3	2	2
Attract Best Staff	1	2	2	2	2	2
Grow Core Business	2	3	3	3	3	1
Protect Brand	2	2	3	2	3	1
Maintain Control	3	3	3	3	4	1
Remain Leader	2	3	3	3	3	2
<b>TOTALS</b>	<b>11</b>	<b>16</b>	<b>17</b>	<b>16</b>	<b>17</b>	<b>9</b>

The evaluation matrix clearly shows that the status quo is not the best way of proceeding for ELoB. It also clearly indicates that Business Practice and HR alternative is also a weak one. The other four alternatives all seem to score fairly close to each other with differences mostly concerning the branding goal.

## 7 CONCLUSIONS & RECOMMENDATIONS

The knowledge and expertise gained from years of Hydroelectric Engineering experience and in maintaining the existing infrastructure has allowed BC Hydro and in particular ELoB to flourish in BC. However the future brings uncertainty and uneasiness for ELoB, as deregulation becomes a distinct possibility. Utilising Strategic Alliances is but one option for ELoB to explore.

In an organisation as complicated as ELoB, it is difficult to recognise where best a strategic partnership will work to its greatest effect. A careful analysis of ELoB coupled with an Industry Analysis shows the apparent strengths and weaknesses of ELoB and the hydroelectric industry. Consequently a Fulcrum Analysis, which is a situational assessment and prognosis, assesses the current strategy and performance of ELoB. From the preceding analyses it became clear that going into the future ELoB would need to make changes in order to stay in the forefront of its industry.

If the status quo is held, ELoB will lose market share and its tag as a leader. ELoB needs to concentrate on its employees and find ways to continue to retain key employees. At the same time it needs to recruit top end employees to maintain its leader status. ELoB also needs to pay more attention to succession planning and compensation packages need to reflect the current market conditions, if not exceeding them. In the long run the people will be the strength that ELoB builds its foundation on.

The market in BC is growing as demand for energy in BC increases. This coupled with a possibility of deregulation allows an unprecedented opportunity for ELoB to establish itself as

the leader in Engineering services for the hydroelectric industry. ELoB must concentrate on the core of its business which has proven to be Transmission Engineering, Distribution Engineering, and Generation Engineering. These divisions need to be grown in order for ELoB to grow and gain additional market share.

The solution analysis looked at six alternatives combined with ELoB's goals on moving forward in the future. Each of these alternatives have merit, however there is not any single alternative that is definitively better than the others. This paper will not select one alternative, the author suggests the best solution is a solution that uses several of the alternatives in conjunction. This will allow improvement to be felt in the divisions of ELoB that need it the most. The one alternative that can be discarded right away is the first one: Status Quo. Standing pat would eventually lead ELoB down a destructive path, as evidenced by the analysis.

The author advises that the best way of moving forward for ELoB with respect to Strategic Alliances is to look closely at a combination of the following recommendations:

- ELoB needs to partner with Klohn Crippen Berger on project based joint ventures for selected hydroelectric projects
- ELoB, for the next five years, should partner with ex-employees in an ad-hoc pool atmosphere in order to bridge the succession-planning problem. This will develop a pool of ex-employees that can be called upon, when resource shortages are encountered. In addition a program should be established that looks at this type of alliance on an ongoing basis into the future.

- ELoB should establish Strategic Alliances with local utilities, in particular, Independent Power Producer's Consortium type or ad-hoc pool partnerships will work best in these situations.
- ELoB would benefit from Strategic Alliances for the Business Practices and People Development divisions. A joint venture with Accenture will work well for HR, while a firm similar to KPMG or Price Waterhouse can partner the Business Practices division.



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