STRATEGIC ANALYSIS OF JASTRAM ENGINEERING LTD.

by

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International Business

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ABSTRACT

Since only a small number (reportedly less than 5%) of all start up firms experience sustained growth and become major players in their industry, what are the factors that determine a small company’s survival and success? What are the main challenges that small companies encounter during their development? Using case study approach, this applied project studied a small local exporter company, examined company’s main areas of concern and made a set of recommendations meant to address key issues of company’s operations.
DEDICATION

To my daughter Dianita, for her friendship and her contagious laughter.

To my son Orlando, for his tech support and for graciously lending me his laptop.

To my husband Orlando Hugo, for sticking with me through thick and thin.
ACKNOWLEDGEMENTS

Many thanks to my applied project instructor Mila Lazarova, for her always helpful advice and guidance throughout this project.

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1 INTRODUCTION

For a variety of reasons, the vast majority of business literature on business models, tools and philosophies, were developed based on large firms – they are more visible and easier to analyze, they have an established track record and longer histories, with established structure and processes which makes them easier to study. Small and medium enterprises (SMEs) have a higher mortality record and are generally not as well studied or represent as much interest to the academic community because of their unproven track record, weak or non-existing organisational structure, lack of established processes and practices, ad-hoc approach to business activity etc. However, SMEs are important in that they are significant contributors to the employment and economic growth around the world, and as such require closer attention from the academic and business community (Akgun et al, 2004).

In these times of downsizing corporations, SMEs are an important job creator, and are actively participating in international trade. Their ability to adapt to changing needs of global markets and their flexibility to overcome problems of local markets, make them important players in the world economy (Hartigan and Lever, 2005).

In Canada, small enterprises account for 98% of all businesses and generate more than 40% of the country's GDP (Holloway, 2006). Canada has traditionally been a resource-based economy, but this is changing now and Canadian companies enter to compete globally on technology. They can no longer rely on the weakness of Canadian dollar to compete on price. Like their international peers, they have to find cost savings on their products but they also have to have a distinct
product offering which has such quality and price that it can compete with comparable products from such quality-driven competitors as European companies, and on price with Asian-based producers.

In spite of their importance, small and medium enterprises are very vulnerable to a number of internal and external factors, which often determine their survival or demise. Given the fact that only a small number (reportedly less than 5%) of all start up companies experience sustained growth and become major players in their industry, in this study we want to examine the determinants of small companies survival and success, and the challenges SMEs encounter during their development. Also, since more and more small and medium enterprises participate in the globalisation phenomena to secure their growth, we investigate whether exporting can be an effective growth strategy in itself. To accomplish these objectives, the present study focuses on a small local exporter company, examines the challenges and strategic opportunities it faces, and makes a set of recommendations meant to address key issues of company’s operations.

1.1 Definition Of Small And Medium-Sized Enterprise

The definition of Small and Medium-sized Enterprise may vary depending on the area of the world. European Union standard definition is that a small enterprise has fewer than 50 employees, less than 7 million Euro in revenue and less than 5 million Euro in assets. For a medium enterprise, it has fewer than 250 employees, less than 40 million in revenues, and less than 27 million in assets (De Chiara and Minguzzi, 2002). The US definition states that a business must have less than 500 employees to be considered small or medium, with average annual sales less than $6 million (Hartigan and Lever, 2005). According to an Australian definition of SME, micro-business has zero employees, small business 1 to 10 employees, and medium enterprise 10 plus employees (Hayes, 2003).
The Canadian definition of SME is similar to that of the United States. Statistics Canada's Small Business Division defines a SME as any business establishment with 0 to 499 employees and less than $50 million in gross revenues (Canadian Heritage and Industry Canada, n. d.). While using these definitions, we should keep in mind that a number of SMEs captured in government statistics, are one person contractors, i.e. simply individuals who have a contractual relationships with employing organizations (Hayes, 2003).

Table 1. Distribution of Canadian SMEs by Size of Business (Number of Employees) (2001 data)

<table>
<thead>
<tr>
<th>Employment Size</th>
<th>Number of SMEs</th>
<th>Proportion of SMEs (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,514,356</td>
<td>100</td>
</tr>
<tr>
<td><strong>0 employees (besides the owner)</strong></td>
<td>663,756</td>
<td>44</td>
</tr>
<tr>
<td><strong>1–4 employees</strong></td>
<td>565,904</td>
<td>37</td>
</tr>
<tr>
<td><strong>5–19 employees</strong></td>
<td>210,982</td>
<td>14</td>
</tr>
<tr>
<td><strong>20–99 employees</strong></td>
<td>67,567</td>
<td>4</td>
</tr>
<tr>
<td><strong>100–499 employees</strong></td>
<td>6,147</td>
<td>0.004%</td>
</tr>
<tr>
<td><strong>Sector</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>189,938</td>
<td>13</td>
</tr>
<tr>
<td>Primary</td>
<td>32,235</td>
<td>2</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>77,336</td>
<td>5</td>
</tr>
<tr>
<td>Wholesale/Retail</td>
<td>235,003</td>
<td>16</td>
</tr>
<tr>
<td>Professional services</td>
<td>189,111</td>
<td>12</td>
</tr>
<tr>
<td>Knowledge-Based Industries (KBI)</td>
<td>73,222</td>
<td>5</td>
</tr>
<tr>
<td>Other sectors not elsewhere classified (NEC)</td>
<td>717,512</td>
<td>47</td>
</tr>
<tr>
<td><strong>Region</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atlantic provinces</td>
<td>93,075</td>
<td>6</td>
</tr>
<tr>
<td>Quebec</td>
<td>353,170</td>
<td>23</td>
</tr>
<tr>
<td>Ontario</td>
<td>533,495</td>
<td>35</td>
</tr>
<tr>
<td>Manitoba/Saskatchewan/Nunavut</td>
<td>135,391</td>
<td>9</td>
</tr>
<tr>
<td>Alberta/NWT</td>
<td>194,799</td>
<td>13</td>
</tr>
<tr>
<td>British Columbia/Yukon</td>
<td>204,426</td>
<td>13</td>
</tr>
</tbody>
</table>

1.2 Exporting as a Foreign Market Entry Strategy

Our subject company, Jastram Engineering, used exporting as a first foreign market entry mode, and is now making first steps towards establishing a direct presence outside of Canada by opening representative offices in Shanghai, China. To gain insight into small and medium enterprise drive towards entering foreign markets, below we first briefly outline the possible foreign market entry strategies, after which we review export process at the most common form of entry for small and medium-based enterprise.

When a firm outgrows its local market, or the local market is not favourable, it will attempt to expand its operations abroad. Companies that expand overseas may be seeking rapid sales expansion, after an initial growth and success in the local market (Winch and Bianchi, 2006).

Business literature reflects three main foreign market entry modes:

- Exporting
- Licensing (or other contractual arrangements with partner companies)
- Foreign Direct Investment (FDI).

With licensing and FDI, the ownership decision is important. Foreign direct investment is an equity foreign market entry, where the investing company can own all or part of the shares. Examples of FDI can be fully owned subsidiary or joint venture. The advantage of FDI are bigger returns as compared with export and licensing, however the disadvantage is that the returns are not immediate but usually delayed for several years; the company can also be subject to political risk in a foreign market. Licensing is a non-equity, or contractual foreign market entry. Licensing represents a lower risk entry option as compared to FDI, because royalties are usually a percentage of sales no matter if the license is making profit or not, with no political risk involved in licensing. Licensing can effectively test the market for the new product; however, the licensee may become proficient and knowledgeable in technology and start competing with licensor.
If production and transportation costs, non-tariff barriers and taxes justify producing in the foreign market, then foreign direct investment (FDI) or licensing are logical options. If the costs of domestic production do not hinder a company's competitive offering, then exporting is the logical entry mode. Advantages of exporting include immediate profits, but the disadvantage is that the profits are taxable in the exporter country, often at higher tax rate.

Each of the above options (exporting, licensing, FDI) involves different levels of investment, expected return, control, risk, duration, competitive threat, tax, and strategy implications, with no single optimal choice. The decision depends on the product and market in question, on the company's financial and managerial resources, its risk averseness and overall global strategy (Contractor, in Tung, 2001).

Mature firms view the three foreign market entry strategies as non-mutually exclusive, and often carry them out simultaneously. However, venturing into foreign markets is not exclusively for large firms. Small and medium enterprises participate in the globalization phenomena, they look abroad to expand their markets and / or participate in supply chains for large multinational companies, and so secure their own growth. Unlike their larger counterparts, for small firms just beginning their international expansion, export is usually the most prevalent foreign market entry choice due to low risk involved and less demand on company's resources.

In the literature, export performance or success has been evaluated mainly by export growth (Beamish, Craig, and McLellan 1993), or export intensity (export sales as a percentage of total sales). Export as a percentage of total sales approach is a proven metric - past research suggests that this variable has a major influence on all aspects of export behaviour (Czinkota and Ursic,
Moini (1995) (within the framework proposed by Jaffe et al., 1988) defines successful exporter as a company with a current export sales ratio of more than 10%.

While export moves are expected to boost the already growing business, growth that is too rapid or unmanaged, can have undesirable consequences: it may be too demanding on the sales/customer service function, because company has to deal with language differences, regulatory conditions, longer supply chains, and managing agent networks (Winch and Bianchi, 2006). Small companies, which already are lacking capital resources, are faced with a new difficulty: collecting payments either via agent intermediaries, or through difficult and time-consuming payment instruments such as letters of credit. So how can success be attained by a small company involved in exporting?

In business literature, concepts of enterprise success and growth are used interchangeably, e.g. Von Krogh and Cusumano (2001), Garnsey et al. (2006) state that the key to success and a long, healthy corporate life is steady growth. If sustained growth equals success, then

- which factors determine success of SME?
- which factors may challenge SME growth?

In order to answer these questions, we review the literature on SMEs' strengths and weaknesses, challenges and critical success factors, as well as SME growth theories. We examine relevant factors laid out in the literature, identify the company's specific challenges and make specific recommendations about changes that are necessary for the company to sustain its growth.
2 LITERATURE REVIEW

In this section, we will review SMEs main strengths and weaknesses, factors that challenge SMEs' growth, and subsequently will review growth strategy and the critical success factors for SMEs.

2.1 SMEs Strengths and Weaknesses

Small and medium enterprises have a number of strengths that help them to survive and grow rapidly, at least initially. Main strengths of SMEs include (Antony et al, 2006):

- Flexible and hence changes can be introduced fairly quickly
- Few layers of management
- Top management provide leadership by example
- Absence of bureaucracy
- High employee loyalty
- Managers directly involved with the customers
- Rapid execution of decisions
- Training focused
- Culture of learning
- People-oriented
- Responsive to market needs
- Deploy improvements quickly and gain rapid benefits
- Loose and informal working relationships and absence of standardization.
While SMEs have many strengths that help them survive, they hold just as many weaknesses. Main weaknesses of SMEs include (Antony et al, 2006):

- Low degree of standardization
- Focus is on operational matters rather than planning
- Harder to retain high calibre staff
- Limited investment in information technology
- No incentive or reward programs
- Lack of strategic planning
- Decisions are made for short-term profitability
- Lack of skills, time, and resources; no specified training budget
- Often operate in a fire-fighting mode
- Not systems-oriented
- Training is limited and informal
- Adamant and dictatorial nature of owner can damage new initiatives
- Formulation of strategy is intuitive rather than analytical.

2.2 Challenges to SMEs Survival and Growth

The inherent SMEs weaknesses result in a number of challenges that companies have to face in their day-to-day operations. “The organizational weaknesses and imperfections that entrepreneurs confront every day would cause the managers of a mature company to panic. Many young enterprises simultaneously lack coherent strategies, competitive strengths, talented employees, adequate controls, and clear reporting relationships” (Bhide, 1996, p. 121). Not unlike large companies, they can also be affected by bureaucracy, arrogance, tired executive blood, poor planning, and short-term investment horizons (Bower and Christensen, 1995). Often, poor planning generates resource scarcities because: “the same people have to be both planning for the
future and remedying current crises” (Garnsey, 1998, p. 543), but within firms under pressure, crises tend to detract from planning.

Exporting companies also face a number of challenges related to foreign regulatory conditions, language differences, agent networks, longer payment periods and more complicated payment instruments (Winch and Bianchi, 2006). Another challenge in SMEs global expansion is the need to maintain balance between existing products and distribution channels, and newer opportunities which international market place has to offer (Winch and Bianchi, 2006). Even though there is a temptation to draw resources from current operation needs (e.g. expanding manufacturing capacity, preserving current market demand, etc.), companies must guard against over-extension. Sometimes a seemingly successful export market maybe so, but only because of the over-commitment of resources. Other common problems for SMEs going global, include stretching capabilities for supporting customers in unfamiliar markets, the need for word of mouth marketing, internal competition for funds while pursuing multiple international markets, and R&D pressures (Winch and Bianchi, 2006)

Challenges to SMEs growth abound - even success itself can lead to failure. Sometimes, SMEs develop their target market so well that the big players are compelled to enter the field (Hull, 1990 as quoted in Feldman and Kofsten, 2000). Some case studies demonstrate theories about decline in even fast growing enterprises. After a period of success and growth, a failure may occur due to an array of problems – from failing to standardize to absence of training and delegation of authority. Specific theories of growth explore potential barriers that are based on insufficient governance, training, research, finance, and planning systems as suggested in the work of Feldman and Kofsten (2000) and Garnsey (1998). Garnsey (1998) identifies specific challenges characteristic of each particular stage of a small company development, and draws a detailed picture of SME growth through these challenges.
2.3 Critical Success Factors for SMEs

While all SME strengths, weaknesses and challenges outlined above are important for understanding SME structure and motivations, organizational difficulties, and rationale behind decision-making processes, not all of them influence small and medium enterprise success and survival at an equal rate. However, a number of critical factors can be identified which are vital to SMEs existence. Critical success factors can be defined as those limited areas of activity that should receive constant & careful attention from management, and satisfactory results in which will ensure successful performance. Small enterprises may attain success by aligning their competencies and capabilities to the critical success factors (CSF) associated with the specific organizational and industrial context in which they operate (Raymond, 2005). A company’s critical success factors are determined by:

- company strategy as the force that mediates between the firm and its external environment;
- organizational context of the company;
- industry context in which the company operates (Raymond, 2005).

Since the subject of this study is an engineering company involved in manufacturing, we reviewed the literature on critical success factors appropriate for this type of enterprise. While Wong (2005), Akgun et al (2004), Bhuiyan et al (2006), Moini (1995), Mascarenhas et al (2002) mention general success factors such as management and leadership, organizational culture, communication and training, sales and marketing as critical success factors, Raymond (2005) identifies a series of more specific factors such as production, supply and inventory management, characteristic of SMEs involved in manufacturing. Mascarenhas et al (2002) also mention company’s technical superiority and unique product offering, as critical success factors. Identifying and maximizing niche opportunities has also been recognized as a critical success
factor for technology-based SMEs. Winch and Bianchi (2006) call this a "deep niche strategy", the essence of which is that the firm focuses its efforts on a very narrow niche of product areas, and this allows it to concentrate and maximize its effectiveness - on a limited budget. Companies may become specialists in their area of expertise, which then further helps their growth and survival, and sometimes they become suppliers to larger companies in the same field, due to their specialization trait.

2.4 Determinants of SMEs Growth

Small enterprises are different from large companies in terms of environmental uncertainty, centralization, systems, resources, flexibility, and strategy (Antony et al, 2005). Formulating a strategy is not an easy task due to the uncertainty that surrounds it. Large firms can afford to spend time and resources on shaping up and periodically reviewing their strategy. In contrast, SMEs, due to lack of time and resources, avoid thinking about the big issues such as goals, strategies, and capabilities, and often get “locked” into one strategic posture due to neglect. To avoid this from happening, the entrepreneurs have to consciously include a strategy inquiry into their companies and their lives (Bhide, 1996).

Small enterprise growth is determined to a large degree, by entrepreneurs’ personal goals (Bhide, 1996). There are a few prevalent assumptions in studying company growth: that growth implies expanding current business in the same form, that it requires more investment, and that growth is only possible in high-growth industries (Mascarenhas et al, 2002). Companies seeking sustainable success and growth have been advised to focus on their core capabilities without letting them grow into core rigidities and impede growth (Leonard, 1995).
After defining their core business and verifying its basic soundness, small enterprise entrepreneurs should determine whether their plans for growth are appropriate. The optimal enterprise growth rate is a function of a number of interdependent factors (Bhide, 1996):

1) **Economies of scale, scope, or customer network.** If growth results in increased volume and lower costs, growth pays off. It also helps to establish favourable economic conditions in industries in which economies of scale or scope limit the number of competitors.

2) **The ability to lock in customers or scarce resources.** Rapid growth also makes sense if consumers are loyal to their supplier, either because of an aversion to change or due to the expense of switching.

3) **Competitor’s growth.** If rivals are expanding quickly, a company may be forced to do the same.

4) **Resource constraints.** A new venture will not be able to grow rapidly if there is a shortage of funds or skilled employees. A venture that is growing quickly will have an image of the winner and will be able to attract capital, employees and customers.

5) **Internal financing capability.** Businesses that have high profit margins and low assets-to-sales ratios can fund high growth rates. A self-funded business cannot expand its revenues at a rate faster than its return on equity.

6) **Tolerant customers.** At an initial stage, products of a young and rapidly growing company are expected to have some flaws. In some segments of the high-tech industry, customers are accustomed to imperfect offerings, at least initially.

7) **Personal goals.** The entrepreneur’s (founder’s) tolerance for stress and discomfort limits company growth to a degree.

In a typical industry and overall, growth rates of firms decrease with their initial sizes among small firms. Entrants select different initial sizes reflecting both the structure of the entered
market and their own perceived capabilities (Caves, 1998). However, in spite of the impetus for growth, in spite of all the good advice and government assistance available, the majority of firms remain very small (see Table 1, page 3).

In pursuing growth, Von Krogh and Cusumano (2001) advise SMEs to combine strategies for growth with explicit strategies for learning, and base growth strategies on capabilities and market opportunities to acquire or create specific knowledge about new technologies, customers and industries. Firm growth may be achieved by pursuing one of five strategies: increasing value to select customers, product proliferation, mass-market development, distribution innovation, and acquisition / consolidation (Mascarenhas et al, 2002).

2.5 Garnsey Early Growth Framework

The economist Penrose’s book "Theory of the Growth of the Firm" (1959), addressed for the first time the issue of firm growth in some detail, and is still considered a classic on the subject. As the title suggests, the subject of the book is organizational growth, and in it Penrose asks a question: does organizational development follow the same pattern as living organisms do: fast early growth, maturity, then decline. Penrose concluded that even though similarity is certainly there, organizational evolution is different from biological development in that companies can consciously alter their destinies and thus avoid demise, and she pointed to the managerial capability as the deciding factor of the company’s success or otherwise.

However, Penrose’s work did not address the incentives and constraints on growth of the firm. This was accomplished by Elizabeth Garnsey who expanded on Penrose’s work in her book "A Theory of the Early Growth of the Firm" (1998). In it Garnsey focused on the small to medium-sized firms during their initial (fast) growth stages. Garnsey (1998) defined and described the...
following phases of growth: early prospecting phase, resource mobilization phase, resource
generation phase, growth reinforcement stage (steady state or growth reversal also possible),
followed by the resource accumulation and maturity stages, by which time the company is no
longer small.

Garnsey’s growth model (1998) takes the form of composite account of typical growth phases,
and is a result of a case study of the UK and US firms, which were mainly innovative,
technology-based firms. In the model early phases are conceived as manifestation of critical
problems that unfold as firms grow, reflecting the need to build the competence to address these
key problems if the firm is to survive and succeed.

Case study evidence collected by Garnsey (1998) shows several common stages as illustrated in
Figure 1: at first, all companies go through the initial stages of resource access and mobilization,
after which some companies may fail. Those companies that do survive, go on to resource
generation, and possibly a steady state, or plateau. From there, the common options are either
growth reinforcement, or growth reversal. If steady growth is attained, then company enters the
stage of resource accumulation, and then goes on to maturity.

Garnsey’s theory of the early growth of the firm is controversial in that it goes against the
prevailing “industry-based” and “market-determined” school of thought on enterprise
development. A good example of such industry-specific, market-driven approach can be found in
Birley and Westhead (1990), who argue that organizational growth patterns are not sequential in
their nature and depend upon internal (ownership, management and product) structure, and
external variables (product / market positioning), and suggest to seek analysis within clusters of
firms, rather than all firms.
The value of Garnsey study and framework (1998) consists in that she brings to the attention of growing companies’ decision-makers one simple but very important point – growth and success are not an entitlement, growth may stop at any moment and fortune reversal may occur at any time. All it takes is for the company to experience a number of problems which, when combined, may quickly bring the company down. She places the onus on the management to watch for early signs of problems and try to avert them as much as possible. In this study, we are critically examining Garnsey (1998) growth path framework by applying it to a case of a single small organization.
3 METHODOLOGY

Single-case study research is a valuable tool of critical thinking. It is effective while studying specific or unique cases (Tellis, 1997), and its revelatory nature provides a foundation for use of single-case studies to illustrate theories (Yin, 2002; Feldman and Klofsten, 2000). The factual evidence it provides, may be used to confirm or refute the current beliefs in the specific area of knowledge.

3.1 Study Design

At the initial stage, multiple, secondary sources of information were used to capture the company's past and present. Secondary data sources included corporate profile, sales catalogues, monthly sales reports, website information, and business press releases. We also consulted secondary sources of information on competition and compiled information about competitors in the same industry. Based on these data, we explore the following company dimensions: origin of the firm, industry conditions, nature of products, type of customers, technology, differentiation, and motives towards acquisition of a competing firm.

At the second stage of research, personal interviews with two of the company founders were carried out. The interviews involved 20 questions (Appendix 1) related to starting up of company, changes over time, past and present strengths and weaknesses, company philosophy as related to engineering design, production, marketing etc. The interviews helped us trace the history of the company through its inception and development up to the point of acquisition of a competitor. [Due to the recent date of the acquisition, the period after acquisition is mentioned but not taken
into account for sales turnover (growth pattern) analysis. Also, some of the obtained information (e.g. actual sales figures) is not disclosed as it is considered confidential at the time of the study].

At the next stage, four of the company's middle managers were approached for an interview. These persons were selected because they perform critical functions within the company – in, respectively, production, inventory management, project management and engineering. To protect their privacy, these persons’ names and positions have been concealed and throughout the report they are referred to simply as Manager 1, 2, 3 and 4. Average interview duration was half an hour; the interview questions were based on issues brought forth in interviews with the company founders, and included issues related to company’s strengths and weaknesses, main capabilities and present day operational difficulties. To help us interpret the findings, we also engaged in additional open-ended discussions with willing employees. These discussions were used to clarify specific issues and provide supplemental information about the company and its processes.

We use the data obtained from the secondary data search and our interviews and discussions to analyze JEL growth by anchoring it to Garnsey’s framework (1998) of early firm growth. Since firm’s growth, and ultimately success, can be measured either in terms of inputs (investment funds, employees), or in terms of outputs (sales revenues, profits), we use the sales revenues data to study the company’s pattern of growth. We supplement the numerical data with historical data collected by interviewing company’s founders. Then, based on our literature review findings, we define the applicable to JEL critical success factors (CSF). Next, we establish company’s main operational difficulties by performing personal interviews with company’s employees, and make a set of recommendations linked to both – present day challenges and the applicable critical success factors.
4 THE COMPANY

Jastram Engineering was formed in 1989 to provide design, manufacturing, engineering and service of marine steering systems and since then carved for itself a specialized niche in a marine equipment industry. The company is a heavy exporter – 88% of the company’s output is exported to 28 countries of the world. As measured in employee numbers, Jastram is a small company - at its Vancouver facility, it currently employs 30 people who speak a total of 15 languages.

4.1 History and Ownership

Jastram Holdings Ltd. is as a holding company for its two main subsidiaries JEL (Jastram Engineering) and JTL (Jastram Technologies). 72% of Jastram Holdings Ltd (JHL) is owned by Mr. Peter Doetsch and 28% by Mr. Peter Jastram. 95% of Jastram Engineering Ltd. (JEL) is owned by JHL and 5% by Mr. Fred Wong. Mr. Doetsch and Mr. Wong are President and Vice-President of Jastram Engineering, respectively.

Mr. Peter Doetsch is a German-Canadian and a President of each of the companies. Mr. Doetsch obtained his professional engineering degree in Germany from Aachen University in 1971. Prior to joining the group in 1983, he was involved in design and application engineering of major marine projects, including the Canadian Navy’s Patrol Frigate Program. He has been a member of the Association of Professional Engineers since 1980, the Society of Naval Architects and Marine Engineers since 1983 and Canadian Institute of Marine Engineers since 1985.

Mr. Fred Wong, is a Chinese-Canadian and a Vice President of JEL. He obtained his Bachelor of Applied Science in Math from SFU in 1974 and a Bachelor of Applied Science from UBC in
1977. He is a member of the Association of Professional Engineers since 1980 and the Society of Naval Architects and Marine Engineers since 1995.

Mr. Peter Jastram is the President of Jastram GmbH which is a German company owned by the Jastram family since 1889. Mr. Jastram saw the potential for specialized marine engineering and specialty products in North America and formed JHL in 1989 to capture a share of this market. Mr. Jastram has an engineering degree and is a member of the Society of Naval Architects and Marine Engineers. Mr. Jastram is not an active JEL owner in that he does not participate in the day-to-day company management.

4.2 Mission

The distinctive excellence of the Jastram Engineering is their ability to respond quickly and provide their customers with innovative solutions world-wide, as reflected in their Mission Statement: “Provide total solutions to unique situations with systems and products which we support and back up by our own professional engineering practices and standards”.

4.3 Product Profile

JEL designs and manufactures a line of steering gears and steering controls, including ram type gears (Model B and Model S) and Rapson slide gears (Model K). Jastram also produces a complete range of steering controls including analog and digital control systems, and is able to offer complete system responsibility for any steering application. Because steering gear is considered life-supporting equipment, Jastram products undergo rigorous quality testing. Due to the high safety standard required from the product, marine safety (classification) societies pay

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1 Despite the name similarity, the German Jastram GmbH has no relation to Jastram Engineering, these are two completely separate and independent companies that share no common organizational structures.
much attention to the steering design and production process. Jastram builds their product in strict accordance to all major classification society rules. Jastram systems have been approved by the American Bureau of Shipping (ABS), French Bureau Veritas (BV), Chinese Register (CR), Norwegian Det Norske Veritas (DNV), English Lloyds Register of Shipping (LRS), German Germanisher Lloyds (GL), Russian Maritime Register of Shipping (RMRS) and the US Coast Guard. The company is committed to the philosophy of quality assurance – its products are type approved in design and manufacturing by ABS, DNV, and RMRS. The company has established an in-house ISO 9000-2000 quality assurance standard to ensure consistent quality in the design and manufacturing of marine steering systems.

4.4 Customer Profile

JEL’s main customers are ship-owners, shipyards and naval architects worldwide, as well as the Canadian Navy. A long-term ballast repair contract with the Canadian Navy provides a steady workload for the electronic workshop. JEL is also the exclusive licensee for a special battery for the Canadian Navy, a product that fits in well with the other work performed in the electronic workshop.

Since JEL specializes in marine custom-designed applications, close co-operation with the naval architects is paramount in order to ensure that an optimal steering system is developed for each application. Jastram has developed a menu-driven computer program, which allows almost instant torque calculation and gear selection for naval architects and shipyards. Among other products, JEL provides steering systems with independent, non-mechanically linked twin rudder arrangements. Icebreaker vessels (e.g. the US Coast Guard icebreaker Mackinaw operating on Great Lakes) use such Jastram systems due to the inherently safe redundancy of two steering gears. High-speed catamaran vessels (e.g. oil-spill catamaran operating on the lake Maracaibo in
Venezuela) use independent systems because such an arrangement saves weight and thus allows the vessel to achieve higher speeds.

JEL customer base is truly international – the company exports its products to 28 countries of the world, top 5 destinations being the US, China, India, Taiwan and Singapore. JEL is a strong global exporter (exports constitute 88% of JEL output, 2004 data). Even though events like a slump in shipbuilding in one country does have an effect on JEL sales, the impact is buffered by JEL's emphasis on the global market and is compensated by sales from other regions of the world. Due to a wide array of customers around the globe, in its 16 years of existence JEL has accumulated a considerable international experience in international marketing, various international payment methods, commercial terms, shipping logistics, and ways to conduct business as applicable to each particular country.

4.5 Industry Description and Market Position
According to a recent marketing study conducted by Jastram, the worldwide market for commercial ship steering systems is $100 million annually. For larger systems, there are several main suppliers (Table 2) of which JEL is one of the smallest but fastest growing with 2-3% of the world market. In North America, Jastram is estimated to have a 10% of the US market, and a 50% of the Canadian market. There is a large recreational market for very small hydraulic steering systems for pleasure boats, which Jastram does not pursue (Source: JEL Corporate Profile).

4.6 Major Competitors

JEL's major competitors (year 2005 data) are listed below in Table 2 (Source: corporate websites).
Table 2. Marine steering gear industry - main competitors (listed in ascending order by number of employees)

<table>
<thead>
<tr>
<th>Company / country</th>
<th>Year established</th>
<th>Number of employees</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jastram (Canada)</td>
<td>1989</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Wagner (Canada)</td>
<td>1936</td>
<td>data n/a</td>
<td>acquired in 1989 by Summer Eqt, sold to Jastram in 2005</td>
</tr>
<tr>
<td>Ulstein Frydenbo (Norway)</td>
<td>1929</td>
<td>40</td>
<td>acquired by Rolls Royce</td>
</tr>
<tr>
<td>Kobelt (Canada)</td>
<td>1962</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>Barkemeyer (Germany)</td>
<td>1984</td>
<td>data n/a</td>
<td></td>
</tr>
<tr>
<td>Van Der Velden (Holland)</td>
<td>1962</td>
<td>data n/a</td>
<td></td>
</tr>
<tr>
<td>Kitagawa Kogyo (Japan)</td>
<td>1965</td>
<td>107</td>
<td></td>
</tr>
<tr>
<td>KGW (Germany)</td>
<td>1945</td>
<td>160</td>
<td>acquired by Hatlapa</td>
</tr>
<tr>
<td>Hatlapa (Germany)</td>
<td>1919</td>
<td>230</td>
<td></td>
</tr>
<tr>
<td>Tokimec / Tokyo Keiki (Japan)</td>
<td>1896</td>
<td>1067</td>
<td></td>
</tr>
<tr>
<td>Ulstein Tenfjord (Norway)</td>
<td>1917</td>
<td>3045</td>
<td>acquired by Rolls Royce</td>
</tr>
<tr>
<td>Rolls Royce (UK)</td>
<td>1884</td>
<td>7,000 at marine division only</td>
<td></td>
</tr>
</tbody>
</table>

Source: Corporate Websites

From the above table we see that some industry concentration is taking place, with smaller successful companies being acquired by larger enterprises. Out of Canada, until recently JEL had three main competitors – Kobelt, Wagner and Autonav. Autonav went bankrupt in 2003 and Wagner Engineering was acquired by Jastram. Thus, only one local competitor, Kobelt Manufacturing, is still remaining. Kobelt is operating in the same niche market as Jastram (piston type steering gear for commercial applications, up to 100 tm torque), and is actively pursuing the same emerging markets as Jastram (e.g. India, Russia). Larger European manufacturers such as Hatlapa are starting to notice JEL, and more and more lucrative, multiple ship-sets projects are being taken away from them by Jastram. JEL is competing on both – product differentiation and
price, by offering technologically advanced equipment at competitive prices, coupled with an established reputation for quality.

Jastram quickly learns and assimilates international business logistics of new markets and successfully incorporates this knowledge into its day-to-day activities. Jastram's vast experience with international business logistics is a definite strength that helps the company compete successfully in the international markets, and is making it a strong contender when it comes to securing contracts. JEL can be defined as a successful exporter since its export rate far exceeds 10% rate given as a benchmark by Moini (1995) - 88% of the company's total sales in 2004. Most of the company's growth and success comes from exports as we will see in the "Growth Analysis" section.

Having reviewed JEL's position in the industry, in the following section we take a closer look at the company's internal strengths and weaknesses.

4.7 Strengths and Weaknesses

A list of the company's most prominent strengths and most detrimental weaknesses was established in the process of founders' and key employees' interviews. The company founders tended to see very few weaknesses in the organizational setup. Only factors such as lack of focus on marketing efforts and too much emphasis on engineering were mentioned as main weaknesses. Managers, on the other hand, while they attempted to reflect on both strengths and weaknesses, tended to see more weaknesses in the organizational setup than they saw strengths. Thus the weaknesses list came almost entirely from the interviewed department managers. All interviewed (100%) concurred that internally the company counts with outstanding professional talent and externally it enjoys good reputation worldwide.
Strengths

As mentioned above, company founders were more vocal about JEL strengths - which is logical since they nurtured these strengths themselves since the early days. Managers on the other hand, if prompted, agreed with the founders’ formulation of company’s strengths but they did not see them in the exact same light the founders saw them. Below we present a list of findings on this subject.

- Flat organizational structure and informal relationships between management and employees were appreciated by founders and managers alike. While the managers valued more the easy access to top management for quick decision-making, the founders liked the ability to action their decisions almost immediately.

- Company founders were proud of the company’s customer service oriented philosophy, the capability to provide customer support in many languages of the world and the ability to custom-design almost any system.

- All interviewed commented on the multicultural environment in the company. While founders valued it for the wide array of perspectives and potential solutions that it can offer, two of the managers and some employees valued it for making the working environment more interesting.

- Company founders pride themselves on the fact that many of the senior employees have been with the company since its inception. The managers are also cognizant of the low turnover among professional employees and see it as an advantage.

- Company founders value the flexibility and low bureaucracy of the present organizational setup which allows them to make changes as needed and to adjust to the circumstances quickly. As top decision-makers, they are always open to improvement suggestions, request them on a regular basis and take them into consideration.
• All interviewed commented on the good caliber of engineering talent employed by company, and considered it a definite strength.

• Company founders are proud of the fact that JEL is financially sound and secure and never had to lay off employees due to lack of funds.

• Manager 1 and Manager 2 concur with the founders’ assertion that the company continuously invests in modern, quality shop equipment and tools, a must for any manufacturing company.

• All interviewed agree that JEL enjoys good reputation worldwide and produces a good quality (albeit expensive) product.

• Company founders estimate that JEL offers fair employee compensation and benefits in agreement with current job market standards.

Weaknesses

Managers tended to see far more weaknesses in the JEL organizational setup than founders did, and had concrete and specific suggestions on how these weaknesses can be addressed. This indicates that the company has the required professional talent to carry out the required changes and to deal with any problems the company may have. It is up to the owners to take advantage of and enlist this capacity wisely. The interviews revealed that:

• For the founders, one of the main company weaknesses is the fact that the company philosophy is too engineering-minded. In their opinion JEL needs to focus more on the customer service and marketing aspects of business.

• Three out of four managers commented on the fact that the company’s culturally diverse employee group often causes communication difficulty. Employees of different cultural backgrounds are automatically assumed to be able to work well together, regardless of their nationality, and no cultural sensitivity training is
provided to deal with the problems and misunderstandings created by cross-cultural communication.

- Manager 3 remarked that one way to mitigate multicultural communication difficulties would be strengthening JEL's organizational culture, which could transcend the individual national cultures of the employees. At this point there is no effort to cultivate organizational culture on part of the top managers or employees themselves. Since non-work-related communication during work hours is strongly discouraged, some employees see arranging for any gatherings outside work hours as an almost "clandestine" activity.

- For Managers 3 and 4, low teamwork skills and low team spirit in the company are definitive weaknesses. Manager 3 remarked on the fact that in good work teams, knowledge should be shared for the benefit of the team.

- Insufficient opportunities for training due to lack of time and focus were also expressed by Managers 3 and 4.

- Manager 4 has a vested interest in putting systems and processes in place within the company, since he is in charge of the information flow during project management stage. Managers 1 and 2, who are the information recipients, agree that things often vary depending on who is executing the task; which creates much confusion.

- Manager 3 considers lack of standardization a serious weakness, especially in the engineering department where it is needed most. In absence of standardization, a lot of time is wasted on simpler systems, which are "designed" over and over instead of turning them into standard designs.

- Lack of focus in marketing efforts was noted as a weakness by one of the company founders.
• Three out of four managers commented on the lack of incentives and motivation aids. Managers 3 and 4 especially remarked on the fact that HR function currently resides with the accounting department, which creates a conflict of interest when it comes to incentives and benefits.

• Managers 2 and 3 brought up the unnecessarily stringent controls over minor details of operations and pointed out that excess supervision had a detrimental effect on creativity and initiative.

Interestingly, while some of the factors were deemed strengths by certain persons, the same factors were perceived as weaknesses by others. From this we conclude that a number of factors can be either a strength or a weakness depending on the circumstance.

• While lack of established systems and procedures was seen as a flexibility trait by the founders, Managers 1 and 2 tended to see it a lack of consistency which leaves room for confusion.

• Founders appreciated the multicultural and diverse composition of their company’s workforce, because it allows for a greater pool of perspectives and potential solutions. In contrast, Canadian-born managers saw it as a disadvantage and even a threat to their own culture. They repeatedly pointed out that excess diversity makes intra-company communication very difficult.

• While all interviewed agreed that strong engineering capability allows JEL to compete more effectively on customized products and creates the ability to quickly find engineering solutions to any problem, company founders were cognizant of the fact that “engineering-mindedness” lowers company’s focus on customer relationship aspect of business and greatly increases the company’s engineering overhead costs.
Because of their dual nature, the last three factors should be watched constantly and given careful strategic consideration by the company’s management. The company should look for ways to use the strength aspect of these factors to its advantage and neutralize the weakness aspect as much as possible by developing new procedures, introducing some standardization to the engineering work performed, providing multicultural training to employees and developing organisational culture. We will address these issues in more detail in the “Discussion” section.

4.8 Company Growth Analysis

Firms that adopt "increasing value to select customers", or niche market strategy, are motivated by constraints, which limit simple expansion of company's current market scope. For Jastram, the main constraint is the size of the competition that it is facing (See Table 2, page 24); this is the main limiting factor of JEL geographic expansion and sales growth. Jastram implemented niche market strategy by identifying and concentrating its efforts on a smaller set of important clients, who are the naval architects and smaller to mid-size commercial vessel applications up to 100 tm torque. According to Mascarenhas et al (2002), one of the disadvantages of the "value to select customers" strategy, is excess complexity due to excessive customization which increases company's overhead and makes the firm vulnerable to market downturns. Mascarenhas et al (2002) also warn that because this strategy is deeply dependant on the relationship with customers, it is important that top management free up time from day to day operations to be able to plan and develop long term relationships with key customers.

At the time of writing of this document, JEL went in pursuit of a second strategy - acquisition / consolidation strategy, which is characteristic of fragmented industries with a high degree of innovation. In July 2005, JEL acquired a competing brand of steering equipment which was well
known and trusted around the world, but which was mismanaged due to this particular product line being poorly matched to the rest of the company’s offerings. JEL acquisition of Wagner Engineering division of Sumner Equipment was carried out in search of economies of scale and an additional share of the market, and also to prevent competition from possibly making the same strategic move. While it is still too early to reflect on the effects of this acquisition, an acquisition strategy generally requires a significant effort in clarifying the functions in the new organization, and the new structure needs to be refocused to fit the existing parent company structure and objectives. Acquisitions require an injection of the skilled managerial talent and long-term outlook to sort things out; otherwise the usefulness of acquisition will be limited.

Although acquisitions benefit acquiring companies by promoting growth and expanding market share, they also place a considerable burden on the company’s resources. In Jastram’s case, after the acquisition, besides its own internal pressures and incentives for growth, the company is also facing an additional and difficult task of integrating the acquired company’s assets, distribution systems, inventory, and intellectual property, with those of Jastram Engineering. In agreement with Penrose’s (1959) and Garnsey’s (1998) affirmations, this stage reflects a moment in the life of the company where the volume of business activity becomes such that the existing structure cannot cope with the increasing complexity of transactions, and the organization has no choice but to address this disparity sooner rather than later. Thus, at this stage of the company development, it is more important than ever to critically review company’s processes, to make sure that any of the existing operational difficulties do not become barriers to future growth, and find ways to develop new efficiencies, more in agreement with the new stage of company evolution. Such analysis will be performed in the “Discussion / Recommendations” section of this report.
JEL growth trajectory

"Value to select customers" and "acquisition" strategies have scale, scope and time-based advantages. Scale advantages are given by the lower costs based on larger volumes, and increased market power allows charging higher prices for products. Scope advantages consist in expanded customer base, market reach, geographical expansion and greater technological variety of product. The time-based advantage has to do with timing and first mover effect, i.e. seizing an opportunity to conquer a select industry niche, or acquiring a competitor before others in the industry have a chance to do the same (Mascarenhas et al, 2002). As reflected in Figure 2, JEL growth trajectory holds a strong resemblance with the steady state (plateau) phase (Fig. 1 and Garnsey, 1998). Financial data is consistent with the qualitative data collected during the founders interviews, where company owners expressed that for 16 years they chose to keep the company small, perhaps against the internal tendency for growth that was building up. Thus the performance curve does not look quite like a plateau, but instead is exhibiting an unharnessed upward tendency. “Small is beautiful” was the owners’ growth strategy until 2005. This strategy changed when, early in 2005, an opportunity came up to acquire a competitor, and the entrepreneurial spirit took precedence over the former desire to stay small.
Figure 2. Jastram growth Trajectory - 1991 to 2005

JEL financial data shows that up until year 2003, Jastram export rate remained relatively stable around 80%. JEL export rate spiked to 88% in the year 2004 due to the fact that total sales volume in that year grew 18% while Canadian sales decreased 20% as compared to the previous year. While JEL is continuing to operate in the same niche market, Jastram’s growth comes from slowly expanding its global market share by adding new territories to its exports destinations list, most recently China, India, Russia and Eastern European countries. Since very large and growing portion of JEL sales comes from exports, this indicates that Jastram pursues growth through exports.

Growth Stages and Respective Challenges

To gain more in-depth understanding of our subject company’s development stages, apart from the financial data we also collected qualitative data about the company’s history. To this effect, interviews with company’s founders were performed, and the comparison revealed a close resemblance with early firm development stages described in Garnsey (1998). In this section, we use manifestations of firm development stages outlined in Garnsey (1998) and look for evidence
of these stages in JEL historical data. Following is the comparative analysis of each stage of JEL development.

Table 3. JEL growth stages

<table>
<thead>
<tr>
<th>Garnsey early growth framework</th>
<th>JEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>At this stage of company development:</td>
<td>At the end of the 80’s, Peter Doetsch and Peter Jastram discussed the potential for specialized marine engineering and specialty products in North America and decided to form JEL in 1989 to capture the share of this market. Around the same time, Wagner Engineering, a prominent local marine engineering company, was on the brink of bankruptcy. Mr. Fred Wong, an employee of Wagner Engineering, former colleague and a friend of Peter Doetsch, requested to join the two other founders and did so some time later, in an engineering and managerial capacity. The founders decided that the company would do what they knew themselves to do best – marine engineering - and proceeded to pool resources, look for opportunities and develop contacts with potential clients.</td>
</tr>
<tr>
<td>Relationships between the founders themselves and their former associates, make the company start up possible</td>
<td></td>
</tr>
<tr>
<td>Owners provide company with its essential assets</td>
<td></td>
</tr>
<tr>
<td>Owners / founders determine the scope of company’s activity</td>
<td></td>
</tr>
</tbody>
</table>

Resource Allocation stage

| At this stage the company: | The first Jastram Engineering products were subcontracted; and the first sales of Jastram hydraulic steering systems, were realized in 1990. The first company operations were located in Peter Doetsch’ home. The first clients were former clients of the now bankrupt Wagner Engineering, who remained in contact with Fred Wong and communicated to him that they were in the market for another steering gear supplier. One year later, when the company started seeing a significant number of orders, the owners considered developing production capacity in-house, and hired a few former co-workers laid off by then bankrupt Wagner Engineering. To help with engineering work, a recent UBC engineering graduate was hired in 1993 and administration capacity was increased to keep track of the billing and expenses. A year or so later, more engineering and sales capacity was added in order to satisfy the increasing demand for Jastram steering equipment. The “liability of newness” mentioned by Garnsey, was especially difficult to overcome in a conservative industry like marine equipment industry, where people for centuries stuck with "tried and true" for various reasons, ranging from safety concerns to superstition. Being ex-employees and engineers of Wagner Engineering, helped establish trust with the potential customers. |
| Lears through trial and error to accomplish the required tasks | |
| Division of labour occurs within the company | |
| People collectively do whatever is need to get ahead | |
| The most difficult aspect is the newness of the company and the effort needed to establish its good reputation in terms of quality and workmanship | |
Table 3 (cont’d) - JEL growth stages

<table>
<thead>
<tr>
<th>Garnsey early growth framework</th>
<th>JEL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resource Generation stage</strong></td>
<td></td>
</tr>
<tr>
<td>At this stage the company:</td>
<td></td>
</tr>
<tr>
<td>◦ Tries to master the supply-demand equation</td>
<td>Around 1995, Jastram Engineering started developing effective relationships with distributors and customers, and continued expanding a global distributor network. Important early relationships were with customers such as Mament Pte. Ltd. from Singapore, Pilot Marine Technology from Taiwan and Hamilton Jet (Hough Marine) from the United States. Also, a representative office was set up in the Gulf Coast area of the United States (McHugh and Associates).</td>
</tr>
<tr>
<td>◦ Tries to match production capacity to the external demand</td>
<td>At this stage, the company hired a production manager and started developing a production capacity more in agreement with the increasing demand. Overproduction was rare, but production shortages were observed too often, which caused customer irritation and demands for faster delivery times.</td>
</tr>
<tr>
<td>◦ Tries to keep the inventory level to a minimum, to keep costs low</td>
<td>In agreement with Garnsey affirmation about the importance of personnel retention, the company effectively learned to maintain its key personnel by treating their employees fairly and paying fair wages. Retention rate among professional employees was and still is, exceptionally high. It is believed that the competitive advantage given by this human resource factor, created the company's core competence in innovative marine design solutions and so contributed to the company success.</td>
</tr>
<tr>
<td>◦ Learns to develop effective relationships with distributors and customers</td>
<td></td>
</tr>
<tr>
<td>◦ Sets up distributor networks</td>
<td></td>
</tr>
<tr>
<td>◦ Learns about the importance of personnel retention.</td>
<td></td>
</tr>
</tbody>
</table>

**Steady State (plateau)**

| At this stage: | Even though this stage is often called "steady state", it offered little stability to Jastram in that revenues fluctuated significantly (Figure 2, page 31) which made planning difficult. To avoid this uncertainty, company founders had two main options - sell the company or attempt further growth. Jastram founders chose growth - even though until 2005 the company remained very small, in mid-2005, an opportunity came up to purchase a competing brand of steering equipment, and Jastram Engineering seized the opportunity. |
| owners often avoid further growth so as to not jeopardize what has been achieved so far |     |
| this apparent "comfort zone" had its hazards and uncertainties |     |
| revenue fluctuations characteristic of the plateau stage, make future planning difficult |     |
| companies cannot remain at the plateau stage forever - eventually they may decide to sell the company, or attempt further growth |     |
| Staying on the plateau stage for a long time is equivalent to staying in the "ranks of living dead" |     |

The next stage, according to Garnsey (1998), could be either growth reinforcement, or growth reversal. The fact that growth reversal is the most problematic and dangerous stage in the life of a company, is sometimes complicated by the fact that the company's principals may not realize or
want to admit, that the company is going through this stage, either due to inattentiveness, or through being excessively busy, or through denial. Garnsey (1998) identifies a number of symptoms that are characteristic of this stage, and in the next section we will examine if our subject company exhibits any of them, by comparing Garnsey's growth reversal symptoms (1998) to the data collected during the managers and employees interviews at JEL.

Table 4. Symptoms Of Growth Reversal (per Garnsey, 1998)

<table>
<thead>
<tr>
<th>Garnsey early growth framework</th>
<th>JEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased need to delegate remains unmet</td>
<td>✓</td>
</tr>
<tr>
<td>Increased complexity of operating logistics is not addressed</td>
<td>✓</td>
</tr>
<tr>
<td>Growing complexity of company's transactions</td>
<td>✓</td>
</tr>
<tr>
<td>Complexity and scope of decision making greatly increases</td>
<td>✓</td>
</tr>
<tr>
<td>Sales and production synchronization problems can lead to unexpected resource shortages</td>
<td>No</td>
</tr>
<tr>
<td>Struggle for growth can suddenly be replaced by a concern of what to do with excess stocks in the face of declining demand</td>
<td>No</td>
</tr>
<tr>
<td>For companies operating in niche markets, as a niche market becomes saturated, the order book shrinks and no new sources of orders can be found</td>
<td>No</td>
</tr>
<tr>
<td>Informal entrepreneurial leadership is no longer appropriate</td>
<td>✓</td>
</tr>
<tr>
<td>Difficulties arise in making transition to new leadership patterns</td>
<td>✓</td>
</tr>
<tr>
<td>Lack of efficient procedures to relieve pressure on resources</td>
<td>✓</td>
</tr>
<tr>
<td>Introduction of external managers from “big business” is problematic – they lack the managerial flexibility and competence appropriate for managing young, growing firms</td>
<td>✓</td>
</tr>
<tr>
<td>Individuals feel like they have no influence over outcomes, and disillusionment sets in</td>
<td>✓</td>
</tr>
<tr>
<td>Maintaining motivation becomes a problem; employee loyalty is tested</td>
<td>✓</td>
</tr>
<tr>
<td>Layoffs may be unavoidable, which stimulate further voluntary departures; morale problems</td>
<td>No</td>
</tr>
<tr>
<td>Limited capacity of the internal decision makers to do all at once - assimilate knowledge, plan, coordinate, and supervise</td>
<td>✓</td>
</tr>
<tr>
<td>The same people have to be both planning for the future andremedying current crises</td>
<td>✓</td>
</tr>
<tr>
<td>External pressures intensify as competition increases in parallel with internal expansion</td>
<td>✓</td>
</tr>
<tr>
<td>Imitator firms may copy a successful product</td>
<td>✓</td>
</tr>
<tr>
<td>Intellectual property may be hard to protect</td>
<td>✓</td>
</tr>
<tr>
<td>Competitors can erode profit margins, as concentration in the industry develops</td>
<td>✓</td>
</tr>
<tr>
<td>Firms that grew rapidly within a niche, may encounter market saturation</td>
<td>No</td>
</tr>
<tr>
<td>Failing to link products and services to those of complementary providers in the industry</td>
<td>✓</td>
</tr>
<tr>
<td>Company operates on a minimum of reserves because the opportunity cost of holding reserves is too high</td>
<td>✓</td>
</tr>
</tbody>
</table>
In other words, our discussions with JEL managers and employees suggest that the company does present some signs of growth reversal phenomenon which, if not dealt with, could affect adversely company's development and growth. Even though Jastram is a successful company that presently exhibits healthy growth, it is widely known that many firms fail after a period of promise, even though they may possess the characteristics of successful firms. Therefore, the fact that a company is doing well at the present moment, does not guarantee this trend will continue.

According to Garnsey (1998), identifying and paying attention to a company’s incipient growth reversal processes caused by growth-related problems is even more important than identifying what it is doing right. Like all growing companies, Jastram has to guard against growth reversal, and foster self-preservation by way of constant seeking of new efficiencies. If the company manages to prevent growth reversal, it will go on to resource accumulation stage, and then on to maturity; accumulation often takes place through the purchase of other enterprises, which may provide a whole new product range and market position.

In the next section, we will outline JEL’s present day operational inefficiencies that may become future barriers for growth, and will offer insight on how they can be remedied.
5 DISCUSSION AND RECOMMENDATIONS

In converging information from the literature review on critical success factors - Wong (2005), Akgun et al (2004), Bhuiyan et al (2006), Moini (1995), Mascarenhas et al (2002), Raymond (2005), Garnsey (1998) description of the critical issues associated with the plateau period, and personal interviews performed at JEL, the following success factors (critical areas requiring attention) emerged as relevant to JEL:

1. Production planning and control
2. Supply management (purchasing)
3. Inventory management
4. Sales
5. Marketing
6. Engineering & design
7. Organizational culture
8. Communication
9. Management and leadership

The literature review revealed that while the first five factors are typical success factors for a manufacturing company (Raymond, 2005), and engineering / design aspect is critical for an engineering company, the rest of the factors (organizational culture, communication, leadership, partnerships) are generic success factors applicable to any company in any industry.
The following section will present a set of company-specific findings obtained as a result of the interviews of company founders, managers and employees. While founders’ interviews were structured and based on a set of predetermined questions, managers were asked to comment on issues brought forth in interviews with the company founders, and included issues related to company’s strengths and weaknesses, main capabilities and present day operational difficulties. The issues that emerged in the interviews were further probed during open-ended discussions with willing “rank-and-file” employees, which provided supplemental information about the way company currently operates. Interviews confirmed the validity of success factors found in the literature, and established their importance to JEL. The following sections will address each of the factors in detail, and in each case we will present findings first, and then will follow up with a set of company-specific recommendations on each topic.

5.1 Production Planning And Control

Findings

All interviewed concur that while production is one of the most important areas of the company’s operations, a wealth-creating one, it is plagued by a variety of problems from coordination and synchronization to motivation and personal conflict. Since the onset, the production manager position combined many complex roles, including material purchasing, scheduling of time on machines, inventory management, shop personnel supervision, etc. Such combination of responsibilities makes sense for a very small business, where the transaction volume is small, but given the present volume of transactions, the production department can no longer operate under the definition given to it years ago. Due to inability of one person to deal with multiple aspects involved in manufacturing, this area of company’s operations is presenting frequent micro-crises, and it is evident that the status quo is no longer acceptable. This causes much frustration to the personnel involved: according to Manager 1, people are complaining of inability to make a difference, of not being able to satisfy the demand on their capacity caused by the sales growth.
Recommendations
If not remedied, a large crisis is bound to occur which will send shock waves through the company – this has to be avoided at all costs. Changes in the production department are needed before any other changes, and they are needed sooner rather than later. To map out the changes, a task force of persons intimately familiar with the production process is recommended. Production manager, shop foreman, quality assurance manager, engineering manager and senior hydraulic engineer, all should be part of the task force – they have been with the company for at least ten years and have a detailed knowledge of JEL products and capabilities. During interviewing process, these and other persons expressed concrete and specific suggestions on how production problems can be addressed - this indicates that within the company, the knowledge and willingness to carry out the required changes already exist; however it is expected that the company owners should be the ones to initiate the changes and stay committed throughout the process.

5.2 Supply Management (Purchasing)
Findings
At present, the purchasing function is part of the production function. Due to the lack of time and other pressing priorities taking precedence, it is largely limited to issuing purchase orders - often "on the run". Purchasing is an important function in that it affects cost of goods produced, as well as the timeliness of production. As any company, Jastram is trying to keep its inventory to a minimum; however, as Manager 2 points out, “‘just in time’ inventory does not mean ‘last minute’ purchasing - these are two different things. In fact, the cost of goods ordered too late is often higher and the delivery times can hold unpleasant surprises”. The purchaser must have adequate time to do supplier research, analyze options, negotiate and fight price increases by the existing suppliers.
**Recommendations**

Suppliers can exert bargaining power on a company by raising prices or reducing quality of offered products and services. They can squeeze out profitability, if the company is not able to recover cost increases with raising their own prices (Porter, 1979). Since all costs saved by the purchasing function go directly to profits, it is in Jastram's best interests to develop parts and materials procurement process into a separate function and a dedicated person assigned to this function. Large custom-built systems currently do not undergo a thorough cost review, although the intent was initially there – years ago project files were set up to have a "cost review" section, but that section was never used and remains empty in all files. Project cost review effort needs to be renewed, all project costs analyzed and cost overruns (if any) discussed with the project coordinators.

Among purchasing manager's responsibilities should be that of developing relationships with suppliers, as these are important factors of the company success and should be approached as any other strategic partnerships. At the moment, suppliers are not chosen strategically - a number of suppliers are simply asked for quotes and the lower bidder usually gets the order. This lack of loyalty often results in irritation from the rest of suppliers and unwillingness to cooperate on future projects, which could be a problem if the lowest bidder does not comply with the promised lead times or the quality is not as expected.

**5.3 Inventory Management**

**Findings**

According to Manager 2, warehouse and shipping area of the company's activities is largely regarded as a "black hole" which swallows people - there one day, gone the next. Signs of burnout and frustration are evident. Willingness - but inability - to make a difference are reported from the personnel. This is the area with highest turnover in the company. Most of the warehouse
and shipping problems stem from the fact that the shipping department activities are being constantly squeezed between the sales department that is pressing for getting the finished goods out as soon as possible, and the production department that is not able to meet the delivery expectations set by the sales. The problem is further complicated by the fact that for ocean shipments to overseas destinations, a mid-week cut off time always needs to be met, which creates tremendous last minute rush. An additional stress is caused by the fact that lately the orders have been coming in multiples, so where orders are in multiples of 2, for example, this makes the crating of systems twice as time consuming. This fact needs to be factored in, time budgeted adequately and sales expectations tamed.

**Recommendations**

Currently JEL relies on one person to maintain inventory and cost records (as well as production scheduling, inventory tracking, replenishing of stocks, etc). As the company grows, alternative personnel needs to be trained on these tasks, because relying on one person to do all this, is counterproductive and even dangerous.

At the moment, the company’s integrated accounting / inventory management system is largely underused except for a few very basic operations such as order entry, purchase order issuing and invoicing. Useful inventory management features such as “demand forecasting” and “stock depletion levels” are never used, and the “bill of material” costs are not updated. In spite of the many capabilities of the existing information management system, inventory management at JEL is still done in a much the same way it was done 10 years ago when the company was very small. This is no longer appropriate - while small companies often entrust inventory control to one person’s memory, or use paper and pencil for scheduling tasks, a rapidly growing company can no longer operate that way. A growing company's management has to be able to access information quickly and efficiently in order to make strategic decisions, so the need to start using the existing information management system for its intended purpose is obvious. Combined with
the appropriately structured purchasing function, this information management system should help with cost control, “just in time” inventory levels and shortest time to market for JEL products.

5.4 Sales

Findings

At present, marketing and sales management function resides with the same person, which creates difficulties for the sales manager to stay adequately informed of current affairs while he has to travel frequently on marketing assignments. All managers agree that with the acquisition of Wagner Engineering division, the company will have to increase its sales volumes to realize the benefits of the acquisition. To achieve this sales growth, an increased marketing effort will be required globally - more trade shows may be necessary, more meetings with the vessel owners, more visits to the naval architects. Due to the volume of future marketing activity required, sales and marketing management functions need to be separated, although sales personnel can assist with the marketing function on “as needed” basis. Company’s principals may take on more of a strategic marketing role as the company grows and the day-to-day company operation is relegated to other people.

Recommendations

When competition intensifies, individualized customer information becomes the strategic weapon. Learning how to offer technical support for an increasing customer group is critical for companies (Von Krogh and Cusumano, 2001). In the case of Jastram, it is proposed that the key sales persons should become area managers to reflect the global orientation of the Jastram sales. Training on the “as needed” basis, can and should be provided to all current and new personnel. Personnel to provide training and mentorship on the technical and business aspects should be identified and designated for this purpose.
Sales people can assist with the marketing function as needed. Sales persons can work in a close contact with the respective distributors for their area, and with training and experience, they can acquire more autonomy and decision-making privileges. More clarity is needed while formulating expectations in this part of the company’s operations. Because sales generate company’s revenues, the company should establish up front what kind of decisions sales managers are allowed to make themselves, and on what kind of decisions they must consult with the senior management. Further, the sales department needs to work in a close collaboration with the engineering department and together, as a team, they have to look for common efficiencies in the project management process. Poor cooperation, redundant work and mistakes can all be avoided through collective brainstorming (Von Krogh and Cusumano, 2001)

5.5 Marketing

Findings

According to one of the founders, having adequate human resource element dedicated to the marketing task is very important. At present, as pointed above, marketing and sales management function resides with the same person. Due to the volume of marketing activity required, sales and marketing management functions need to be separated. Better marketing materials need to be developed - in the past, there was never any time to rethink the concept of the brochure packs and catalogs and to modernize them. Marketing tools, such as project references, need to be updated regularly and presented in a modern, innovative way. Proper picture collections, video or DVD materials need to be developed. The company is currently in the process of developing a simulation program that will illustrate the operation of Jastram equipment, and will allow for an easier visualization of the technology by the customer.
Currently, the company’s webpage only allows customers to request a steering quote - it is not meant to give suggestions, complain or ask for improvement, or report malfunctioning parts. Customer feedback form as part of the Customer Relation Management should be established on the company's website, where the customer can compliment or complain about the service or products. Finally, the company practices a consistent print media exposure and website advertising, and this should continue.

Recommendations

Marketing research in a few areas of the world is still needed to establish trends and forecasts and to pinpoint emerging markets. However, we should keep in mind that even the best possible market research might identify only a broad range of potential customer penetration rates, and there would be no obvious scenarios within that range (Courtney et al, 1997). In fact, while increased promotion and advertising seems to be a logical factor for sales growth and ultimately company's success, this effort, if used by itself, would be misguided. It may cause a quite opposite effect - a too aggressive advertising campaign or extensive promotion may result in a surge of orders, which the company cannot satisfy, because it is not matched by investment in manufacturing capacity to fulfill the orders. Long delivery times, unexpected production delays / bottlenecks may cause negative word of mouth advertising which may affect adversely company's image.

The firm's focus should be on technologies that add value to customers and give them compelling reasons for doing business with the firm, such as giving the customer some useful content through the corporate website, and coming up with simple solutions that augment the firm's marketing plan and make the work environment more efficient. This can be done by developing on-line forms, market segment e-mail addresses, shared access databases, and using accounting software that allows for a high degree of electronic interaction with the customer. Chinese, Russian and
Spanish pages on the company's website can be created for customers' convenience and easier and speedier reference. Some companies list their equipment inventories on the corporate websites and link them to agents' sites in different countries of the world (Einrich, 2004).

Marine regulations changes in different parts of the world should be followed closely because they strongly influence company's external environment and markets. High profile projects should be identified early at the design stage, and worked on via the visits to the naval architects, and other targeted activity.

Word of mouth marketing should also be paid closer attention to as a low cost, highly effective but often overlooked route to sales growth – it may be a potentially effective part of marketing strategy for a small firm. This aspect of marketing is closely tied to quality assurance factor: the existing customers pass their views on products and services to their peers in the market place, and so influence the buying decisions of other potential purchasers. When the product / service is good, this can contribute to company's success and growth, especially in a new market, because as the customer base grows, the positive feedback is becoming more numerous and with it a number of positive recommendations grows also and sales accelerate (Winch and Bianchi, 2006). While word of mouth marketing strongly influences the good reputation of the product, the opposite is also true: the average unhappy customer can talk to dozens of people about their bad experience, and the bad "press" may snowball, which impacts relationships with clients, suppliers, bankers and causes them to lose faith in the firm. Therefore, word of mouth marketing is a double-edged sword, which can cause either strong benefit or strong damage. As it can be an important part of a global marketing strategy, it needs careful attention because the same forces that act as a growth driver can equally drive a company into a decline (Winch and Bianchi, 2006).
5.6 Engineering and Design

Findings

The company is currently experiencing "us vs. them" animosity between the engineering and sales departments, according to Manager 4. The engineers need to take into account the business part of their design activity, and to look for ways to standardize design processes in order to cut costs. The sales persons should stop treating the engineering team as slaves to their imagination - "they design what we sell". By working closer with the engineering personnel, sales persons should develop "an understanding that not everything the customer wants, can, or should be designed - otherwise the company can design itself into a hole".

Lack of systems and deficient procedures are reported from all four managers, "one day we do things this way, the next day it's all different. It is very confusing". Manager 3 mentions insufficient training opportunities, presumably due to the lack of time, and qualifies the absence of standardization in the company's technical documentation as a big time wasting factor. Standardization may seem contradictory to the fact that Jastram Engineering specializes in custom system design, but some standardization in this area is possible and necessary - otherwise the company will have to grow its engineering capacity further and thus increase further that portion of the company's expenses, which constitute the engineering salaries. Some upfront investment in time and resources may be needed to rethink the system design process; industry best practices could be a good starting point in this regard. Parallel with the review of the engineering design process, the system manuals concept also needs to be rethought and simplified. With standardization of the system design, the manuals should become simpler and more straightforward, which will represent a long-term saving in time and resources involved in their creation.
Preliminary design work in the form of engineering drawings is often requested by the Naval Architects around the world. Right now, however, Jastram does not budget for preliminary design work in terms of engineering time, although the realization exists that this is important and it represents an investment in the future projects (a year or two down the road). Indeed, with the appropriate follow up from the Jastram sales personnel and local Jastram representatives in the area, this preliminary design work comes to fruition almost 100% of the time. In this regard, it deserves to be given a status of the legitimate design work and time needs to be allocated to carry it out and keep track of it. Many engineering drawings — project-specific and preliminary — already exist, which, if catalogued properly, can be located fast and avoid sales and engineering persons "reinventing the wheel" every time a new request comes in. Right now, sales people and engineering people rely mostly on their memory and a pile of hard copies of drawings to look for similar projects.

**Recommendations**

Even though SMEs are reportedly responsible for about 55 percent of technological innovations around the world (Hartigan and Lever, 2005), they do not have the “luxury” to dedicate considerable resources to solving technological problems or coming up with a novel design when the market requires it. Due to their limited financial and human resources, SMEs must focus on their core business, and not divert attention to new areas of activity, which requires wide spreading of resources, especially into unfamiliar areas where R&D costs maybe very high.

When a small company in a technology industry goes global, logically it has to compete with much larger and much stronger competition than itself. Winch and Bianchi (2006) advise small companies to limit their spheres of operation to very narrow fields, i.e. "deep niche strategy", and if product research and development is necessary, it is prudent to limit it to those narrow fields.
(Donath, 2005). Jastram did this very well and, since 1989, it is operating in a specialized niche in a marine equipment industry. It custom-designs and manufactures steering gear for marine applications in a range of torques from 0.5 to 100 tm.

However, while offering customized solutions to customers helps companies to grow initially, this may soon become a barrier to growth. In absence of standardization, customer service routines become too costly to maintain because each customer requires costly servicing (Feldman and Kløfsten, 2000). “It is important to establish routines and procedures... without which a company can become increasingly chaotic and unprofessional – and ultimately hurt product quality and service” (Von Krogh and Cusumano, 2001, p. 55).

The company should look into ways of using more of concurrent engineering processes. In the traditional sequential engineering process, there is little or no cross-communication among various functions, and information generated from one activity is handed to off to the next only after its completion. Increased effort, development time and cost are the disadvantages of this method. Concurrent engineering integrates interrelated functions at the outset of the development process in order to minimize risk and reduce effort later in the process. In this way the company may meet better customer needs and shorten completion time of projects (Bhuiyan et al, 2006).

Importance of training and knowledge sharing is widely addressed in business literature (e.g. Von Krogh and Cusumano, 2001; Novick, 2005). There should be a better knowledge and information transfer between JEL’s engineering and sales departments, whereby engineering persons can train sales personnel to carry out more effectively their interface work between the customer and the company's design team. The company should regard training and self-development as both a requirement and an incentive, and strive to assemble a high quality technical sales team from the existing and new personnel. As the company becomes more successful, more bright and better-
qualified people will approach it, seeking employment there. Training is important for SMEs in many ways, including employee succession. Any one employee may leave the company at any moment, it is an unfortunate fact of life. The company has to be ready with the answers to these critical questions: how will the business cope; who else can do the job; who has the knowledge; who has the time; how long will it take to find a replacement? One option is to divide the role covered by a key employee and train several colleagues to each cover part of the role. This provides cover for the key individual and brings spin-off benefits in terms of holiday cover and general staff motivation (Novick, 2005).

Wong (2005) proposes that knowledge management is an important success factor for a technology-oriented company. This is tied to retention rates in a SME: knowledge loss occurs when employees leave for better careers and job prospects, in larger organizations and with higher salaries. When they leave, they take with them all the accumulated knowledge on a process, so retaining people is dependent on effective people strategies. Human resource management lies at the core of knowledge management, and therefore is also a success factor for a technology-oriented company.

5.7 Organizational Culture

Findings
All managers agree that at the moment the company is hiring employees mainly for their technical skills and credentials, and the organizational culture is simply a sum of the many national cultures residing within the company. In selecting employees, the company's management should keep in mind that strong prevalence of any one cultural group may lead to forming of "cliques" which may hurt the organizational culture, threaten trust and create resentment. Where some members of such cultural group end up in the positions of power, this
can lead to almost feudal relationships within the company, which perpetuate inefficiencies and create frustration in the rest of the employees.

**Recommendations**

Organizational culture is important in that it fills in the gaps that an organization’s written rules do not anticipate. Culture determines the degree to which individual employees and organizational units compete and cooperate, and how they treat customers. More than any other factor, culture determines whether an organization can cope with the crises and discontinuities of growth (Bhide, 1996). Unlike organizational structures and systems, which entrepreneurs often copy from other companies, culture must be custom built (Bhide, 1996). In a technology-oriented company, its success strongly depends on an open and inclusive corporate culture that embraces innovation (Donath, 2005).

Once a culture is established, it is difficult to change. The company should take a closer look at the cultural diversity within the company and recognize that too much of unmanaged diversity can be just as harmful as no diversity at all (Glover and Carrington, 2005). The company needs to develop a stronger organizational culture that can transcend the individual cultures within the company. A cultural sensitivity training would be desirable so that every person in the company can see their own culture’s place in the company’s kaleidoscope of cultures. Such training would hopefully also give the Canadian-born employees some sense of security that their own culture is not being threatened amidst so much immigrant diversity.

**5.8 Communication**

**Findings**

Both founders and managers mentioned the fact that JEL already has in place a company-wide
initiative whereby the employees’ feedback is requested, encouraged and taken into consideration. Some of the managers suggested that the company should build on this initiative and open further communication channels among employees, where knowledge is not hoarded but flows freely, ideas are collected and nurtured, experience is shared, and young and new employees' opinions are valued equally. As Manager 3 put it, “the obvious benefit of such initiative is further advancement of the company’s organizational culture. In addition, there are also cost benefits - open communication will allows company to find efficiencies they did not known existed, streamline processes, better solve problems and thus reduce costs”.

**Recommendations**

The importance of an effective interpersonal and intra-company communication cannot be emphasized enough in these times of the fast paced business environment and rapid information technology advancement. Information sharing and communication is what sets apart successful teams from the unsuccessful ones (Akgun et al, 2004). Formal communication includes internal e-mails and formal meetings. Even though e-mail and memo methods are impersonal in nature, they are less time consuming and create less work interruptions than face-to-face meetings, while still providing an outlet for discussions, for expressing ideas and frustrations, asking for help etc. Informal communication should not be frowned upon: a research study by Akgun et al (2004), showed that informal communication about the project (e.g. coffee chats, lunches, water-cooler discussions etc.) contribute to team cohesiveness and success of the projects. Successful teams perform both formal and informal communications better than unsuccessful ones, with one interesting exception: too much formal communication has a negative impact, so balance is important.

Growing companies need to combine informal communication mechanisms with more formal knowledge sharing, such as strategic planning process that encourages regular discussions among managers and employees (Von Krogh and Cusumano, 2001). For intra-company communication,
use of instant messaging can be implemented in Jastram, especially in view of the company's impending move to a three-storey building where it may become even more time-consuming and difficult to locate any given person. While the phone line can be busy, e-mail may malfunction or take time to get to the recipient, instant messaging is fast and efficient for a quick check on something. Many companies today use instant messaging as a viable and convenient form of intra-company communication and this is certainly worth a try. Instant messaging does not cost anything extra - if an employee has a computer and an e-mail address, they can have access to instant messaging at no extra cost to the company.

5.9 Management and Leadership

Findings

The company's president, Mr. Peter Doetsch is both owner and founder of Jastram Engineering. Mr. Doetsch has been successful not only as the company owner, but as a manager as well. No manager likes to distribute "harms" - laying off people, cutting expenses, disciplining employees, giving bad news and performing other unpleasant tasks. Over the years, Mr. Doetsch has been able to distribute both "benefits" and "harms", as needed, and still remains well-liked and respected by the company's employees. The turnover among company's professional employees is quite low in part due to their personal loyalty to the company and its founders. A few years ago, Mr. Doetsch largely removed himself from the day-to-day company's operations, but retained and even increased his leadership role in the company. His vision, energy and people skills have shaped the company's culture and contributed to the success and growth of the company.

Mr. Fred Wong, the company's vice president and co-owner, is currently in charge of the day-to-day management of Jastram Engineering. Mr. Wong possesses a wide array of engineering, project management, sales, marketing and problem-solving skills which have helped the company to secure and successfully carry out many lucrative projects - even when the Asian crisis hit at the
end of the 90’s. Mr. Wong’s mentorship role has been felt in all company’s activities but has been especially important with the sales people, whom he trains thoroughly on both technical and commercial aspects of the business. His managerial style is worth emulating – Mr. Wong is very good at delegating responsibility and overseeing tasks, he is always available to guide or to answer a question, and to offer insight. Also, his problem solving skills have earned a healthy respect in the company, especially his “art of the simple solution”. While not every problem can be solved in a simple fashion, it is the simple solutions that are often overlooked in a company ripe with professional talent. With complicated problems, people tend to look for complicated solutions, which are often time-consuming and costly. Time and again, Mr. Wong has been able to offer simple and cost-effective business solutions where nobody else saw them – it is a valuable skill that hopefully can be transmitted to the company’s long term employees.

At this stage of the company’s history, the company’s President and Vice President need to increase their mentorship role, and train other people to carry out day-to-day management activities. For 15 years, Mr. Doetsch and Mr. Wong took care of the company's management day-in and day-out, set the strategy and did most of the decision making. However, a two-person management team is no longer enough to deal with a rapidly changing company's landscape. A lot of additional managerial energy is required rather soon to deal with the rapid growth, especially in view of the recent acquisition of Wagner Engineering division. There is a pressing need to assemble a management team that will provide an additional intellectual power to help dealing with the organizational change. Out of the engineering team such managers have already emerged – bright, young, talented and energetic, with over 10 years of Jastram experience and hands-on knowledge of the company’s processes. It would be highly beneficial to get these persons involved as soon as possible in the company’s change management task force.


**Recommendations**

Mr. Fred Wong is the key figure in the impending organizational change. For any change to take place, Mr. Wong would have to let go of his project management role. This would allow, on one hand, his replacement to learn hands-on project management, and on the other hand, to eliminate a conflict of interest which his position of authority imposes on the projects not led by him. It is undoubtedly a difficult decision to make, especially for Mr. Wong, for whom hard work and long hours are very much part of his personal and national culture. However, his separation from the project management would benefit the company in the long run.

Also, succession plans for the company’s President need to be put into place. In spite of nearing his retirement age, Mr. Peter Doetsch still does not have a succession candidate, although he is actively looking for one. According to the literature (e.g. Demers, 2002), it may take anywhere from 2 to 10 years to set up a succession plan and to transfer control completely. Tied to the succession management is also the issue of training the current management team on independent decision making - right now, department managers are expected to check with the top managers (owners) on most aspects of business operations.

**5.10 Partnerships**

**Findings**

Modern day technology is developing rapidly and it is neither possible nor efficient to try to develop in-house all the latest technology that the market requires. In the marine industry partnerships and alliances can be forged with suppliers, customers and/or complimentary products producers - e.g. bowthruster, DPS, autopilot manufacturers, to name a few. Integrated offerings of marine equipment provide customers with both convenience and savings and are often preferred as a turnkey package. Jastram's largest competitor - Rolls Royce - is regarded as the
leading provider of such integrated systems. Even though Rolls Royce is a much larger company, there is no reason why Jastram cannot learn from its largest competitor and look into integrated packages, albeit on a smaller scale. According to JEL founders, at present a possibility to offer a steering system - bowthruster package, is neither considered nor possible because of logistics concerns, even though Jastram GMBH is a sister company. Still, first small steps in this direction are being taken with DPS manufacturers, which is encouraging but more aggressive efforts might be required in the future if the company is to compete for a dominant position in the marine steering equipment industry.

**Recommendations**

The key to growth - even survival - is to stake out a position that is less vulnerable from attack from established or new opponents, and erosion by suppliers, buyers, and substitute goods. Establishing such a position can take many forms - creating long-term relationships with favourable customers or suppliers, differentiating the product through marketing, integrating forward or backward, or establishing technological leadership (Porter, 1979).

Industry partnerships and strategic alliances are often regarded in business as a means of long-term survival. Industry partnerships and alliances allow growing firms to secure complementary assets and to achieve market repositioning, and thus increase exposure to favourable demand and investment conditions. Forging partnerships may help overcome the competitive challenges of the market place – without them the company may under-invest in modernizing its product offering and come under threat from larger companies (Feldman and Klooisten, 2000). Other very important partnerships are those with the suppliers and/or customers (Porter, 1979). Partnerships with the suppliers are advantageous in that they allow company to enjoy lower costs than the competition, and alliances with customers provide a steady stream of orders, which allow for easier planning and resource allocation. However, for the company's senior management to
develop effective industry partnerships, they need to liberate sufficient time to dedicate to this activity (Mascarenhas et al, 2002). This time can come from the decreased involvement in the day-to-day operations.
6 STUDY IMPLICATIONS AND LIMITATIONS

The major objective of this study was to identify some of the major processes and challenges that an exporter SME may face in its quest to become and remain successful in the global markets. The project, though limited in scope, offers valuable insight on nature and commonality of challenges faced by SMEs entering world-trade system.

This study is beneficial to the subject company in that it offers a picture of the enterprise from a perspective different than the owners' perspective. Winch and Bianchi (2006) research showed that in many cases, typical small firm managers tend to focus their attention on day-to-day details of operations, without necessarily seeing the long-term implications of their actions or decisions. Thus, obvious (and sometimes very detrimental) processes may take place, but occur unnoticed by the management, as they are not evident to the management at the time they are occurring. However, entrepreneurs should evaluate their companies' position and trajectory often – not just when problems appear (Bhide, 1996).

Existing research on SMEs recommends that SMEs going global promote a process of periodic re-evaluation of existing business assumptions and develop new logic throughout the organization (Anderson et al, 2001 as cited in Winch and Bianchi, 2006). This project contributes to a healthy review of the company's current practices and offers information about similar / generic processes through which SMEs go in their development.
By having offered a detailed analysis and recommendations to our subject company, this applied research project can hopefully contribute to JEL success. Besides the obvious usefulness to the company in question, this project can be of use to entrepreneurs, small business consultants, business academics and students. On the example of JEL, it relates the experience of a small Canadian technology-based exporter company, which managed consistent success during the past 16 years.

Limitations

Case studies have limited generalizability beyond the subjects of their study. However, they represent a valuable method of critical thinking, effective for studying specific or unique cases (Tellis, 1997), and can be used to illustrate theories (Yin, 2002; Feldman and Klofsten, 2000).

The scope of this project does not allow for a more thorough, longitudinal study of implementation of the proposed measures and their overall effectiveness, thus this study reflects only one moment in time for the company. While some of the described problems and issues are generic and characteristic of the cohort of firms of similar sizes in similar industries and allow us to make a reasonable assumption about their being beneficial, others are company-specific and may not be useful to other companies due to operational and managerial differences involved.

The fact that the author of this report is an employee of the subject company may introduce potential bias. On the other hand, her familiarity with the organization and employees greatly facilitated the interviewing process and allowed for more thorough probing of issues as interviewees tend to open up more to an interviewer whom they trust. Furthermore, the analyses included a thorough review of relevant academic work on the subject of SME development and were anchored in a well-accepted academic framework (Garnsey, 1998).
7 CONCLUSIONS

Firms are subject to high “early mortality” and their survival chances grow as they age. However, only less than 5% of the cohort of firms experience sustained growth and become major players in their industry as major job creators (Garnsey, 1998). The uncertainties that a small enterprise may face at any given time, are many. In spite of the challenges and uncertainties, many companies continue to operate in an overall successful fashion. However, the negative impacts may be building up and the company may experience them when it is most vulnerable - and a growth reversal process may begin (Garnsey, 1998).

Managers must distinguish critical issues from normal challenges associated with growth (Bhide, 1996) and deal with them accordingly. Successful companies use effectively their problem-solving capacity and core competence to achieve leverage in accessing further resources and markets. However, many firms fail after a period of promise, even though they possess the characteristics of successful firms in their early stages of development (Feldman and Klofsten, 2000). Therefore, identification of success characteristics does not guarantee the picking of winners. Periodically reviewing company growth strategy and addressing inefficiencies occurring during growth processes should help company success and survival.

It is still uncertain how much further Jastram is going to grow. In conventional economic theory, a firm needs to grow to reach the minimum efficient size for its industry by investing a certain level of capital into the production function (Garnsey, 1998). Factors, such as innovative technology, new business models and organization, can alter this level, so smaller efficiency scale actually becomes possible. However, the very same factors are also changing the balance of
forces in the market place: larger businesses are taking over the distribution channels which were traditionally a domain of the SMEs - technology is allowing them to reach smaller customers. As a consequence, acquisitions in SME sector are becoming more frequent - there is a general "bulking up" of businesses, as more SMEs are acquired by other SMEs in the same or complimentary line of business, or by smaller public companies seeking additional market shares (Hayes, 2003). Therefore, among other options, a possibility of JEL being acquired by another company is a real and viable option, if the owners wanted to consider it to realize their return on investment.

Like all growing companies, Jastram has to guard against growth reversal and foster self-preservation by way of constant seeking of efficiencies. To conclude with an observation from Von Krogh and Cusumano (2001), "however company chooses to apply its knowledge and whatever strategy it chooses, it must be committed to continuous growth. Companies that are not steadily growing might very well be on their way to steadily dying" (Von Krogh and Cusumano, 2001, p. 61).
APPENDICES

Appendix 1

Interview Questions – Founders

- Please describe how the company started, and what was the motivation behind starting it.
- Please describe JEL initial stage, and which events took place at that stage – how resources were accessed to take the company off the ground, what difficulties were encountered.
- Describe the next stage of company development and what events took place.
- Around what time (year) did sales really take off? How did company generate resources for further operations, what was remarkable about this stage, what events took place, what difficulties you encountered?
- What was company strategy at that time?
- Do you feel company has a growth strategy – why or why not?
- What are the challenges of the present stage?
- Do you have succession plans?
- What was the reason for the recent acquisition, and how it is important to this company?
- Has the recent acquisition changed the company’s overall strategy?
- Please reflect on the future of the company.
- Do you feel immediate changes are necessary due to acquisition – and if so, which?
- What areas of company operations require changes the most and why?
- What is the best way to carry out these changes?
- What difficulties do you foresee while making these changes?
- What areas of company’s operations are you most concerned about? (weaknesses)
- What accomplishments of this company are you most proud of? (strengths)
- How do you perceive your own role in the company at the moment? Is this bound to change?
- What is the company hoping to accomplish with acquisition of the competing steering gear brand?
- Do you have any other comments you would like to make?
Interview Questions – Managers

- Please reflect on this company’s main strengths.
- In your opinion, what are this company’s greatest weaknesses?
- What are the main areas of concern?
- What areas of operations need improvement first?
- How can these improvements be carried out – do you have any suggestions?
REFERENCE LIST


