Industrial Globalization, Segmentation and Technology Innovation in the New Zealand Plastics Industry

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Abstract

This empirical study examines the influence of industrial globalization and segmentation on opportunity analysis in the New Zealand Plastics Industry; addresses industrial segmentation methodology, and implements an integrated approach. Bases of industrial segmentation are implemented with respect to process, business performance, market focus, innovation, research and development and entrepreneurship. A hybrid segmentation process is integrated within a framework of business segmentation. The framework consists of four main components, commencing with segmentation antecedents, and concluding with the outcome of segmentation. Methodology includes qualitative and quantitative data analysis, using an electronic survey and semi-structured interviews. Use is made of Surveypro and SPSS toward analysis of descriptive and inferential statistics. Recommendations and implications are discussed with reference to the segmentation bases. Results are the realisation of growth targets as set out by Plastics New Zealand, enhancing globalization and technology innovation within the industry.

Keywords: Industrial globalization and segmentation, business market segmentation, hybrid segmentation, Plastics industry.
Introduction

In this paper we explore a hybrid approach to globalization and industrial market segmentation in the New Zealand Plastics industry. We explore industry dynamics in terms of people, process, capability and performance. Industry participants are segmented according to homogenous characteristics, such as margin, turnover, growth and value add. We further focus on the common behaviours in each segment, and identify value-adding behaviours in each segment. The four segments identified are labelled as Stayers, Niche Operators, Go Getters and Volume Operators. These segments are analysed with the purpose of identifying growth opportunities in the New Zealand plastics industry.

Overview of the industry

The New Zealand plastics industry currently consists of approximately 584 businesses, of which 135 are owner operated. The industry employs in excess of 8000 people. Annual industry revenue is approximately $ 2 billion, with average gross profit margin of approximately 33 per cent. A distinguishing characteristic of the industry is the proliferation of small to medium enterprises, with 39 per cent of industry participants employing less than 6 employees. Only 11 per cent of businesses employ in excess of 50 employees. 32 per cent of businesses have 50% or more of their ownership offshore. As much as half of total revenues are a result of exports (direct and indirect). Most businesses have some investment in research and development, with less than half investing more than 5 per cent of annual sales into research and development.

Injection moulding was identified as the most common process across the industry, with 38 per cent of manufacturing output used for packaging. Half of industry participants report annual revenue of $ 6million or less, with only 18% reporting annual revenue in excess of $ 8million. Key markets consist of food, diary and meat industries. Those businesses exporting into Asia tend to have higher gross profit margins than others.

Growth opportunities

Plastics NZ have implemented a growth strategy to double industry turnover to $ 4billion by 2015. Industry participants are relatively optimistic about the future growth prospects, with 70 per cent of participants expecting their net profit to increase over the next three years. The regions of Middle East/Africa and Central and South America stand out as regions that the industry is most likely to expand into. Asia stands out as the export region that is currently the most attractive in terms of contribution to profit. In terms of industries, electronics, home appliances and retail stand out as the most profitable.

Industry segmentation

The study differs from traditional industrial market segmentation studies (MCDonald: 1995; Piercy: 1992) in that it is the manufacturing producers being segmented rather than industrial customers. We segment the plastics market with respect to process, business performance, market focus and innovation, research and development. Segmentation is identified according to four bases:

• Stayers, representing those businesses with a low gross profit margin and low revenue
• Niche operators, representing those businesses with a high gross profit margin and low revenue
• Go getters, representing those businesses with a high gross profit margin and high revenue
• Volume operators, representing those businesses with low gross profit margins and high revenue

On analysing the segmentation bases, niche operators and go getters are in the best position to grow the industry. We attempt to delineate analysis from our segmentation approach, toward identifying growth opportunities in the New Zealand plastics Industry.
Rethinking industrial market segmentation: a literature review

Industrial segmentation (industry specific) involves activities designed to aggregate organisations with relatively homogenous characteristics into groups or segments (Dibb & Simkin: 1997).

McDonald (1995) and Piercy (1992) stress that industrial market segmentation remains a key decision area for organisations undertaking marketing strategy and planning. Doyle (1995) takes this one step forward by highlighting the importance of segmentation and targeting decisions for industrial businesses in competitive environments. Industrial market segmentation is based on the assumption that buyers or users demonstrate heterogeneous preferences and behaviour, often demonstrated by differences in user characteristics processes and application (McDonald: 1995). A negative connotation of segmentation in industrial markets however suggests that organisations tend to over-emphasise the mechanics of segmentation, while failing to correctly implement the findings (Webster: 1991). To overcome this, it is proposed that there needs to be an appropriate relationship between the commercial benefits that can be derived from the particular segmentation programme and the costs of its introduction (Dibb & Wensley: 2002).

Identifying segments

Industrial market segmentation can be viewed as the process of identifying segments whether they be industry groups or individual organisations, of potential segments with homogeneous attributes who are likely to exhibit similar process patterns (Hassan, Craft & Kortam: 2003). There are three different approaches for industrial segmentation:

- Identifying clusters of industries that demand similar processes or products
- Targeting different segments in different industries with the same process or products
- Identifying segments present in many or most industries, striking a hybrid balance between various macro and micro segmentation factors.

The hybrid or universal approach is deemed to be the most innovative and also the most likely to give an organisation a significant competitive advantage (Hassan et al: 2003). This gives the organisation or processes a reputation and coherence in image and positioning which is internationally reinforced. Lambin (1997) believes the other two diverse segmentation approaches have the merit of taking into consideration differences among industries and of introducing adaptations to accommodate these differences or focus their processes to excel in specific segment(s). However, both segmentation strategies exhibit disadvantages of limited economies of scale, particularly regarding the risk of vulnerability to national and international market changes. The specialisation may also exhibit disadvantages due to the high cost of differentiation.

Hybrid segmentation

The use of universal (hybrid) segmentation as an industrial market strategy looks for similarities across industrial markets. The traditional differentiation or focusing segmentation strategies are multi-industrial, that is, they tend to ignore similarities and highlight differences. The universal or hybrid approach to industrial market segmentation actively seeks homogeneity in process, product and value, while the multi-industrial approaches to industrial market segmentation maintain focus on differences from industry to industry. The ultimate agenda for an organisation is not to have an identically uniform process line worldwide, rather the strategic marketing end is to come up with a process mix that is as standardized as possible, while recognising that allowances for environmental conditions are sometimes both necessary and desirable (Keegan & Schlegelmich: 1999). In this study, the ultimate agenda is to encourage more value-adding activity in a traditional process-oriented industry.

Toward integration of the hybrid approach to industrial market segmentation, Goller,
Hogg and Kalafatis (2002) conceptualised a framework of business segmentation. The four main sets of components consist of antecedents to segmentation, prerequisites of the segmentation process, the hybrid segmentation approach, and the outcome of segmentation. An adaptation of this model is used for implementation in this study, represented in Figure 1. Several benefits of industrial segmentation have been identified, and include providing direction for appropriate resource allocation (Albrecht & Bryant: 1996), guiding the strategic direction (Weinstein: 1994) and coordination of activities within a competitive environment (Neiger, Barnes, Thackeray & Lindman: 2001).

| Take in Figure 1 |

**Conceptualisation of the research problem**

The conceptualisation of our research is based on the potential effects of industrial segmentation toward identifying growth opportunities in the New Zealand plastics industry. Rather than take the approach of segmenting markets, this study has segmented manufacturers and identified the characteristics that lead to high performance. We followed the hybrid approach as noted by Keegan and Schlegelmich (1999), together with integration of the framework of Goller et al (2002), depicted in Figure 1. The framework outlines the direct relationships of several determinants of the segmentation process, taking into account direct and moderating effects of the external project environment.

The study was commissioned by Plastics New Zealand and funded by New Zealand Trade and Enterprise (NZTE). The Plastics sector has been identified as an area of future potential and therefore the objectives of the study are twofold:

- To gain an understanding of the current state of the New Zealand Plastics industry with respect to size, scale and activity
- To ascertain where the best growth prospects might lie for the industry

An effective segmentation process involves three distinct steps: marketing analysis to gain knowledge or current marketing intelligence; strategy development to formalise ideas; and, appropriate programs to action the determined revised segmentation strategy (Dibb & Simkin: 1997). This process, together with integration the Goller et al (2002) framework were implemented in this study’ through to the point of recommended actions.

**Research methodology**

The scope of this study was determined after extensive consultation with Plastics New Zealand and NZTE. The two main areas of research were identified in the previous section. A three-tier research approach was implemented, involving exploratory, quantitative and qualitative data collection and analysis. Phase one involved an exploratory analysis of data collected from secondary sources, including data from Statistics NZ, Plastics NZ and NZTE. Data included determination of aggregated financial data including the location and dollar value of exports, industry size and ownership structures of companies in the industry. Phase two involved a web-based survey, using Surveypro analysis. The survey was complemented with email and postal requests to Plastics industry participants, using the Plastics NZ database. The sampling frame consisted of 334 industry participants, and included 190 current industry members representing industry manufacturers and non-manufacturers. The questionnaire was designed according to the Dillman (2000) tailor designed web-based survey methodology. The questionnaire was pre-tested and piloted to ensure that it was easy to understand, complete (within fifteen minutes) and that it captured the data required. Quantitative data analysis made use of SPSS v2, making use of descriptive and inferential statistics. Phase three involved a qualitative analysis, with a series of semi-structured interviews. Eight interviews were conducted with identified plastic manufacturing companies, to gain insight into the survey data, and to gain a deeper understanding of the issues facing different parts of the industry. Another six interviews were conducted with
representatives of the main industries that plastics supply, being Healthcare, Appliances, Automotive, Electronics, Information Technology, Dairy and Meat. Finally, three interviews were conducted with representatives from the tooling and design industries. The interview data was analysed by drawing out themes which were then grouped together and reported on in the context of the quantitative results.

Research results

Statistical overview of respondents

One hundred and two usable surveys were returned, indicative of a thirty per cent response rate; with margin of error of eight per cent at the ninety-five per cent confidence level. Response was considered appropriate for the study at hand. The visits to businesses validated the survey results in virtually all areas, and respondents were deemed representative in terms of geographic location. There was however an over representation of larger companies and a corresponding under-representation of smaller companies. Table 1 represents the geographic distribution of responding businesses.

Current state of industry

This section statistically examines the current state of the industry. Industry turnover was estimated at just over $2 billion, with an average gross profit margin of thirty-three per cent. Our framework divides the industry into the following four quadrants:

- Low margin/high sales
- Low margin/low sales
- High margin/low sales
- High margin/high sales.

Each quadrant is then examined in the context of products and processes, business, markets, innovation, research and development and entrepreneurship. The segmentation is presented in Figure 2.

Take in Figure 2

The survey indicates that:

- More than 50% of respondent’s sales are domestic.
- 20.9% of exports were regarded as Direct Exports, with two thirds of the direct export market being in Australia.
- 38% of manufacturing output was used for packaging.
- Most businesses have some investment in Research & Development, with half investing more than five percent of annual sales into R&D projects.

There is a significant range in gross profit margin being achieved across the industry. The range could be caused by a number of differences between businesses including processes employed, business demographics, customer characteristics, research and development, capital expenditure, innovation and entrepreneurial talent and technique. Comparing sales and gross profit margin data for the respondents allows for the creation of the Sales-Margin Matrix illustrated in Figure 3 below. Each dot represents a company and the lines represent the average mark for the industry.

Take in Figure 3
As expected the majority of businesses are small with respect to sales. However, what is surprising is the high quantity of low sales/high margin businesses. There are only a few businesses with high sales and high margin. There appears to represent a real opportunity to assist high margin businesses increase their volume of sales.

Each quadrant has been labelled to develop a typology to be used throughout the remainder of this study. The four categories in the typology are:

- **Stayers** representing those businesses with a low gross profit margin and low sales. They are more likely to be serving the domestic market with some sales into Australia. They compete on service and quality but struggle to charge a premium for quality. They appear to be always looking for ways to create efficiencies so they can continue to offer goods for a competitive price.

- **Niche Operators** representing those businesses with a high gross profit margin and low sales. They compete on finding a niche and providing good service and quality for the niche. They see their individual skills as key drivers of their success and high prospecting activity as the key future success factor. It is unclear why this group does not have higher sales. However, it appears to mirror the challenges facing the New Zealand export scene in general.

- **Go Getters** representing those businesses with a high gross profit margin and high sales. These are particularly attractive businesses that often work with leading edge plastics technologies and have innovative customers operating in high growth industries.

- **Volume Operators** representing those businesses with a low gross profit margin and high sales. They have global operations and size allows them to compete on scale and cost. They rely on large volumes to survive and therefore work hard at maintaining relationships and securing long term supply contracts. The strong dollar and the threat of competition from overseas manufacturers are primary concerns. Access to new markets are limited but the demand for smaller packaging sizes is driving some new business.

**Opportunity potential**

With respect to potential opportunities and threats, a number of external trends were discussed in the interviews. The most critical themes identified are summarised in Table 2 below.

| Take in Table 2 |

Which quadrants in Figure 2 will be most impacted by these trends? This is a question to be considered by industry but it would appear that:

- **Go Getters** will be the most attractive acquisition targets for multinationals.

- **The Direct Exports of Volume Operators** could be under threat due to offshore competition. This would particularly apply to exports of commodity type items where the cost of a buyer switching to a new relationship is relatively low.

- **Niche Operators and Go Getters** are in the best position to exploit the growth opportunities in high growth industries such as electronics and healthcare.

- **Volume Operators and Stayers**, in the business of packaging, will be able to source new opportunities derived from the trend toward smaller sized packaging.
Export and market statistics by category

Table 3 examines the four business categories by way of goods exported and the geographic location of markets. As expected, Go Getters have a large percentage of their goods exported. It is interesting that only 26% of their exports are Direct. This appears to offer an opportunity for future expansion to leverage off success in the domestic market. The relatively high percentage of direct exports for Volume Operators and Stayers may be of concern. The strong dollar will impact on margin and if products sold are commodities then there could be a threat from competition overseas. The opportunity for Niche Operators appears to be growing their export markets. At present only 45% of goods are exported. As with Go Getters there must be opportunities to leverage off successes in the domestic market. Interestingly, although all groups indicated that the Middle East/Africa and Central and South America were emerging markets, only Go Getters and Niche Operators indicated that Europe was a key area for future expansion.

Take up Table 3

Industry constraints

This section summarises and analyses constraints to growth identified in the interviews. Analysis of the quantitative and qualitative data suggests there are a number of factors that are constraining the New Zealand plastics industry from growing at a greater rate. These constraints can be categorised into the following four categories: external factors, invested capital, human resource, and market mix.

External factors are both local and global. Locally, the current value of the New Zealand dollar is making it problematic for exporters to compete with manufacturers in other countries—particularly those businesses that compete on price. Another major inhibitor on growth is the increasing cost of raw material (partially offset by the strong dollar). This constraint is likely to continue to be fuelled by China’s increasing demand for raw material. Surprisingly, only a few businesses mention taxation policy as a growth inhibitor. However, there was a call for increased depreciation on capital expenditure by several of those interviewed.

Capital invested into fixed assets can constrain businesses. Some capital is invested in machinery and processes that involve large investments with limited flexibility. The ability to respond to market demands or switch into higher market margins is therefore constrained. Some industry members were trending away from owning process and tooling equipment and were repositioning themselves as designers and innovators with very low fixed asset bases. However, these same innovators relied on traditional manufacturing to develop their knowledge. There is a real risk that a reducing manufacturing base will reduce the supply of future innovators.

Human resource constraints fall into two categories: skilled labour and management capability. Access and retention of skilled labour is one of the most frequently mentioned constraints on growth. The respondent picture of the industry predicts that there will be increase in employee numbers of 8% in the next 12 month period. This is not surprising given the average forecast growth in gross profit of 10.9%. Of more concern is that the figure does not include replacing those who leave the industry. Recent research in the plastics industry indicates that this could be as high as 5%. As such, the actual number of additional employees needed to be attracted into the industry is thirteen per cent. Given the large number of businesses in the New Zealand plastics industry that compete on cost and production efficiencies, it is likely that wages and salaries will increasingly become less attractive for employees compared to what can be earned in other industries or countries. The other human
resource constraint of management capability was addressed in the Entrepreneurship section of the report.

Finally, the data in this report suggests that a major constraint on growth is the market mix that businesses are in. With the most common category for the respondents being in a low margin and low Sales market, growth by definition is problematic. There is an over reliance on domestic sales, or sales into Australia. Both these regions are linked to poor profit for our respondents. What will likely provide growth is in the export markets, particularly Asia and Middle East/Africa. However, the products exported will need to either be niche focused and/or design led. Only a small percent of the industry appear to have the experience required.

Summary of findings and managerial implications

The aim of this paper is to identify growth opportunities in the New Zealand Plastics Industry. Our summary of findings is represented as drivers of growth across the segmentation quadrants identified in Figure 2, with opportunity areas depicted from segmentation analysis. Final implications are represented in the potential future size of the industry.

Drivers of growth

Processes and Products

Injection moulding was the most common process across the entire industry. However, it was used most by Go Getters and appears to be the process most linked to profitability. Profile Extrusion and parts of Film Extrusion were also linked to high profitability. There was good news and bad news for packaging and as a result relatively static revenue is forecast over the short to medium term.

Businesses

Financial performance varied widely across the industry. 50% of all responding businesses reported annual sales of $6m or less and 18% of respondents reported more than $18m. Gross Profit margins varied from 14% to 46% across the four key groups. The industry appears to be relatively optimistic about the future with approximately 70% of respondents expecting their net profits to increase over the next three years. Almost half of the respondents predicted gross profit growth of 5% or more over the next three years with the average at approximately 11%. This indicates that there are some highly profitable firms in the industry. Go Getters stood out in terms of growth prospects with high employment expectations, high profitability and high growth expectations. They listed leading edge technology, design, innovation, access to markets in growth industries, and joint ventures as factors driving future sales and profit.

Markets

Food, Dairy and Meat industries stand out as key markets for Plastics products. Holding on to volumes in these markets appears to be critical to the survival of the manufacturing base in New Zealand. When analysing the four business categories there is a clear relationship between per cent of goods exported and profitability. However, the % of goods exported directly offshore is relatively low for Go Getters indicating an opportunity to leverage off success in the domestic market. Go Getters have had success in the high growth markets of home appliances, cosmetics and electronics whilst Niche Operators have had their main focus on building, home appliances and medical markets. The regions of Middle East/Africa and Central and South America stand out as regions that the industry is most likely to expand into. New Zealand and Australian markets are seen as two areas where respondents are least likely to want to expand. Asia stands out as the export region that is currently the most attractive in
terms of contribution to profit. In terms of industries, electronics, home appliances and retail stand out as the most profitable.

Innovation, research and development

In the last financial year for the Plastics Industry total investment in research and development was $71.7 mill. Into the future, over 70% of respondents expect to invest 3% or more of total sales into research and development over the next 3 years. *Niche Operators* and *Go Getters* are investing the highest % of their annual sales and predict increases over the next three years.

Entrepreneurship

Our interviews indicated that those owners and managers that are capable of innovating and then communicating the value of their innovation to customers are able to extract higher margins than others. Ascertaining the true value-add of the innovation and then negotiating price were two challenging areas identified in the interviews.

Opportunity Areas

This study identified a number of opportunities for growth in the industry. The industry will need to decide which opportunities to focus on and how to go about affecting change. To assist in this endeavour, some of the opportunities identified in the report and some possible strategies are outlined below:

1. **Increase the number of Niche Operators and Go Getters**
   - Facilitate the creation of new plastics-led businesses
   - Develop a support programme for prospective Go Getters

2. **Accelerate the growth of Niche Operators and Go Getters**
   - Source and make available market research information, including customer and competitor information
   - Introduce Go Getters in Plastics with Go Getters in other industries. Round table dinners have been used successfully in other countries.

3. **Connect with and understand the needs of high growth industries (onshore and offshore) and high growth businesses**
   - Develop a matchmaking service between prospective users of plastic (e.g. inventors) and plastics businesses with potential solutions

4. **Connect with the strategies of the Government’s Design Taskforce**
   - Develop Centre of Excellence around Plastics Technologies
   - Work closely with NZTE and the Design industry in the implementation of the Design Leadership Strategy

5. **Establish technological requirements of customers and encouraging technology specialisation in the industry**
   - Undertake research in key customer industries and identify areas of potential specialisation
   - Facilitate sharing of knowledge between those that specialise in technology areas

6. **Establish and promote the competitive advantages that New Zealand Plastics businesses hold**
- Identify key performance parameters and collect data to benchmark New Zealand businesses against offshore businesses

7. Develop the skills required to establish the true “value add” to customers and claim a fair share of it
- Identify and provide relevant training programmes

8. Develop entrepreneurial skill sets
- Identify and provide relevant training and development programmes

**Potential future size of the industry**

This section attempts to provide an appreciation of what could be achieved in the industry over the next ten years. There are many variables impacting on the future success of the plastics industry. Many of these are outside the control of individual businesses, for example, exchange rate fluctuations. However, as depicted in Figure 1, an understanding of the trends and opportunities in the industry is the first step toward bridging the gap.

**Take in Figure 4**

To make a prediction of revenue for the next 10 years requires extrapolating the data from the respondents. Initially this requires a weighting of respondent sales data to allow for the over representation of larger businesses and an under representation of smaller businesses in the sample. This weighting produces a total sales figure of 530.4 (mill $). Extrapolating this out to the whole population results in a figure of 2121.6 (+/- 174) (mill$). Using the next three years predicted average annual change in gross profit as a proxy for revenue growth provides the data for up to 2007. For 2008 and 2009 the growth figures come from NZ treasury central forecasting. Due to the large number of economic factors it is not recommended to predict beyond this timeframe.

**Take in Table 4.**

What Table 4 suggests is that, if those responding organisations can realise their predicted growth margins then the industry can increase its revenue by a magnitude of 50% over the next five years. Logic might suggest therefore that within ten years time the plastics industry in New Zealand could be a 4 billion dollar industry. However, it is important to be aware that attempting to predict beyond five years into the future is problematic. Sales improvement alone is not the answer to the industry’s transformation. To also achieve an increase in gross profit margin will require Plastics businesses to create additional value for customers and end consumers and to claim their fair share of this value. What this also suggests is that the industry could be worth even more to the country in terms of value (in both sales and margin) if growth strategies could be put in place e.g. assisting niche operators to increase sales.

**Executive summary and implications for managers and executives**

The Plastics Industry is a key contributor to the New Zealand economy both in terms of wealth created and number of people employed. The Industry covers a diverse range of manufacturing processes and supporting processes and is involved in a wide range of markets both domestically and offshore. The current state of the industry shows an overall degree of optimism despite a reasonably difficult trading environment at the time of undertaking this research. However, as with all industries, there are clearly some businesses outperforming others.

For this analysis to guide strategy it was necessary to develop a framework that could be used for future studies to assess progress. Gross Margin and Sales were chosen as the two key outcome measures in the framework. Businesses were classified into four categories labelled Stayers, Niche Operators, Go Getters and Volume Operators. Each category was analysed with respect to current state and opportunity potential in the context of processes & products, businesses, markets, innovation/R&D and
entrepreneurship. We identified these quadrants as hybrid business or industrial segments (Keegan & Schlegemich: 1999), and incorporated this approach to integrate with the framework as proposed by Goller et al: 2000.

Through this research we have learnt the value of segmenting businesses in an industry into homogenous groups that share common characteristics; in this case, gross profit margin and sales. By segmenting the industry we were able to focus in on the behaviours that businesses in each segment have in common. Attention could then be given to encouraging value-adding behaviours and discouraging non-value adding behaviours in each segment.

The research demonstrated that two of the segmented groups were similar in that they both achieved high margins and yet one group was making more money than the other group. Although this was sometimes due to the age of the businesses, in most cases it was because the businesses were behaving in sub optimal ways.

The top performing group, “Go Getters” were:

- Targeting in industries they enter, that is, only high growth industries
- Proactively establishing the technological requirements of their customers and then specialising to maximise their value add
- Embracing design as a critical part of their business (they regard themselves as design-led businesses)
- Are skilled at forming joint ventures and alliances
- Investing relatively more in training
- Investing relatively more in research and development

The next group, “Niche Operators”, appeared to be very similar except they were found to be:

- Often selecting target markets with limited opportunity
- Often not specialising in a particular area of technology, that is, broad in their offering despite the narrow market niche
- Often not embracing design, that is, regarding themselves as manufacturers
- Reluctant to partner and suspicious of other motives
- Not investing as much in training (relative to turnover)
- Not investing as much in research and development (relative to turnover)

The key question for policy makers for the industry is how to encourage more niche operators to behave like go getters.

This report provided an overview of the types of personal and business capabilities that will need to be developed to make the best of opportunities that present themselves. It was clear that being in an attractive market niche would not be enough to secure sustainability. A continual advancement in business capability and personal capability will be essential.

References


Figures and Tables

Figure 1: An integrating framework of business segments

Source: adapted from Goller et al: 2002

Figure 2: Current State of Industry
### Table 4: Predicted Plastics Industry Revenue (mill$)

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper limit</td>
<td>2295.6</td>
<td>2496.7</td>
<td>2712.7</td>
<td>3027.1</td>
<td>3169.4</td>
<td>3327.9</td>
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<tr>
<td>Mid-range</td>
<td>2121.6</td>
<td>2307.4</td>
<td>2515.4</td>
<td>2797.7</td>
<td>2929.2</td>
<td>3075.7</td>
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<tr>
<td>Lower limit</td>
<td>1947.6</td>
<td>2118.2</td>
<td>2309.2</td>
<td>2568.3</td>
<td>2689.0</td>
<td>2823.5</td>
</tr>
</tbody>
</table>

### Table 3: Export and Market Statistics by Category

<table>
<thead>
<tr>
<th></th>
<th>Stayers Low Margin Low Sales</th>
<th>Volume Operators Low Margin High Sales</th>
<th>Niche Operators High Margin Low Sales</th>
<th>Go Getters High Margin High Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of goods exported</td>
<td>38.4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of total exports that are Direct</td>
<td>40% 45% 67%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of total exports that are Indirect</td>
<td>57.1% 45%</td>
<td>27.3%</td>
<td>26%</td>
<td></td>
</tr>
<tr>
<td>Industries sold into (top 3)</td>
<td>Other food industries 26.8% Building 14% General agriculture 10.3%</td>
<td>Dairy 41% Other food 18% Meat 8%</td>
<td>Building 31% Home appliances 18% Medical 14%</td>
<td>Home appliances 30% Cosmetics 13% Electronics 11%</td>
</tr>
<tr>
<td>Geographic markets sold into</td>
<td>New Zealand 77.9%</td>
<td>New Zealand 77% Australia 21%</td>
<td>New Zealand 77% Australia 9%</td>
<td>New Zealand 55% Australia 20% Asia 15%</td>
</tr>
</tbody>
</table>
### Table 2: Key External Trends impacting the Industry

<table>
<thead>
<tr>
<th>Trend</th>
<th>Impact</th>
<th>Possible Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>An increase in multinational expansion</td>
<td>More NZ businesses being acquired</td>
<td>Ensure industry pipeline of new innovative businesses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If customer is being acquired – build relationship with acquirer</td>
</tr>
<tr>
<td>An increase in offshore buying of Plastics</td>
<td>Some parts of the plastics industry will continue to decline</td>
<td>Attempt to shift business into high margin areas through design and innovation</td>
</tr>
<tr>
<td>Increasing number of NZ businesses with high growth potential</td>
<td>Opportunities for plastics to grow with high growth industries</td>
<td>Target businesses in high growth industries</td>
</tr>
<tr>
<td>Increased demand for smaller sized packaging</td>
<td>Increased opportunity for plastics packaging</td>
<td>Understand additional value and negotiate share of margin</td>
</tr>
</tbody>
</table>

### Table 1: Geographic distribution of respondents as compared to the total population

<table>
<thead>
<tr>
<th>Region</th>
<th>Respondents</th>
<th>Whole Industry*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auckland/Northland</td>
<td>65%</td>
<td>58%</td>
</tr>
<tr>
<td>Elsewhere in Nth Island</td>
<td>20%</td>
<td>25%</td>
</tr>
<tr>
<td>South Island</td>
<td>15%</td>
<td>17%</td>
</tr>
</tbody>
</table>