



New Zealand's Marine Cluster

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Context for the Report

This report has been prepared by students of *Microeconomics of Competitiveness*, a course taught at Harvard Business School by Professor Michael Porter, as part of the degree requirements for a Master of Business Administration (MBA). The course centers on Professor Porter's "Diamond" theory of economic development articulated in many academic articles and captured in his book *On Competition* (Porter 2008). The "Diamond" theory posits that a country/region/cluster's competitive position can be explained by the strength of four reinforcing attributes: factor conditions, demand conditions, related/supporting industries, and firm strategy, structure and rivalry. Course sessions cover a range of countries and clusters, all at differing stages of economic development, and analyze successful and failed attempts to upgrade competitive advantage. This report applies the lessons learned from the course to the situation currently faced by New Zealand, and the New Zealand Marine cluster. Unless otherwise stated, the views and recommendations expressed in this report are those of the authors, based upon the interpretation of raw data collected via interviews and other sources.

Acknowledgments

The authors would like to thank the large number of individuals, firms and other organizations that were generous enough to offer their time and assistance in helping to prepare this report. In particular, we would like to thank the Marine Industry Association of New Zealand for the help they were able to provide. In total, we conducted seventeen separate interviews and achieved a good mix of contributions from many of the Marine industry's stakeholders. We have not attributed quotes and have kept the identity of interviewees anonymous so as to encourage as free and frank a dialogue as possible. Our hope is that this report can make a constructive contribution to the future of New Zealand's Marine cluster.

A. Executive Summary

As a geographically isolated country with a small population, New Zealand (“NZ”) is in a challenging position. The country prospered in the early 20th century as a result of its strong agricultural sector, but in recent times NZ’s GDP per capita has lagged its OECD peers and the country has managed only modest increases in labor productivity. A number of policies have been implemented since the 1980s to make NZ more business friendly, but to date the country has not clearly articulated a cohesive national strategy for economic development.

This paper consists of two sections. In the first section we analyze NZ’s economic performance and recommend ways in which the country can increase its prosperity. In particular we argue that NZ should adopt an economic strategy which reduces its reliance on agriculture and focuses on diversification. More specifically, the country needs to pursue value-added products and services where increases in productivity can be achieved and the impact of geographic isolation can be overcome. In order to do this, NZ needs to foster entrepreneurship and encourage FDI, particularly in sectors that will benefit from skill transfers and increased business expertise.

In the second half of this paper we analyze NZ’s marine cluster, which is an example of a globally competitive cluster that is not dependent on agriculture. We recommend ways in which this cluster can maintain and increase its international standing. Further, we argue that participants in the cluster have the potential to leverage the cluster’s expertise and strengths to expand into related fields.

B. New Zealand – Country Analysis

New Zealand is a small country in the Pacific Ocean, comprising two main islands and several smaller ones. It is geographically isolated, with its closest neighbor Australia, located 1,900 kilometers to the north-west. NZ's most populous city is Auckland and its capital is Wellington.

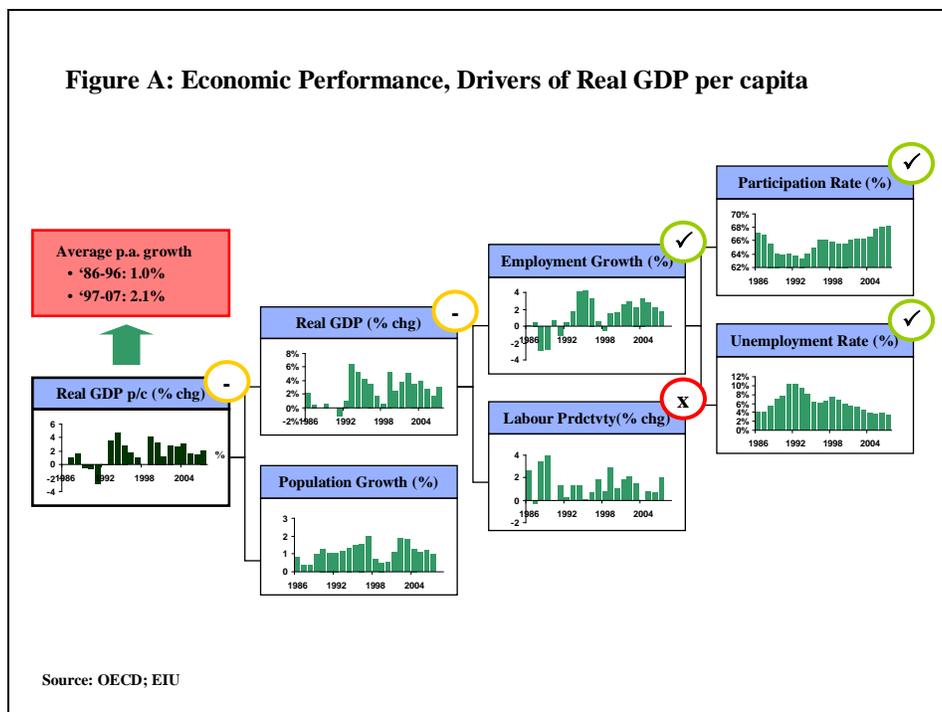
1. Overall Economic Performance

1.1. Development of the New Zealand Economy

NZ's economic development has been driven by its natural endowments, including a temperate climate and fertile land. As a result of its strong agricultural exports, NZ entered the 20th century as one of the world's most prosperous nations. From the mid-1930s the NZ government embarked on a program of import substitution. The central bank was granted a monopoly on foreign exchange transactions and wage, price and interest rate controls were introduced along with generous social welfare provisions (Glasgow 1999). By the mid-1980s NZ faced an economic crisis: wool prices collapsed, and its main trading partner, the United Kingdom shifted its trade to the European Economic Community¹. NZ's sovereign debt was downgraded amid fears the government would default (Glasgow 1999).

In response to this crisis, NZ's Labour government instituted aggressive economic reforms beginning in 1984. It removed import, interest rate and foreign exchange controls, floated the NZ dollar, reduced tax rates, agricultural subsidies, tariffs and social welfare spending, corporatized state owned enterprises and instituted anti-trust legislation (OECD 2009). As a result of these reforms, New Zealand has enjoyed moderate economic growth since the 1980s (see **Figure A**).

¹ Until the late 1960's, the UK purchased over 70% of NZ's exports and 90% of its meat and dairy products

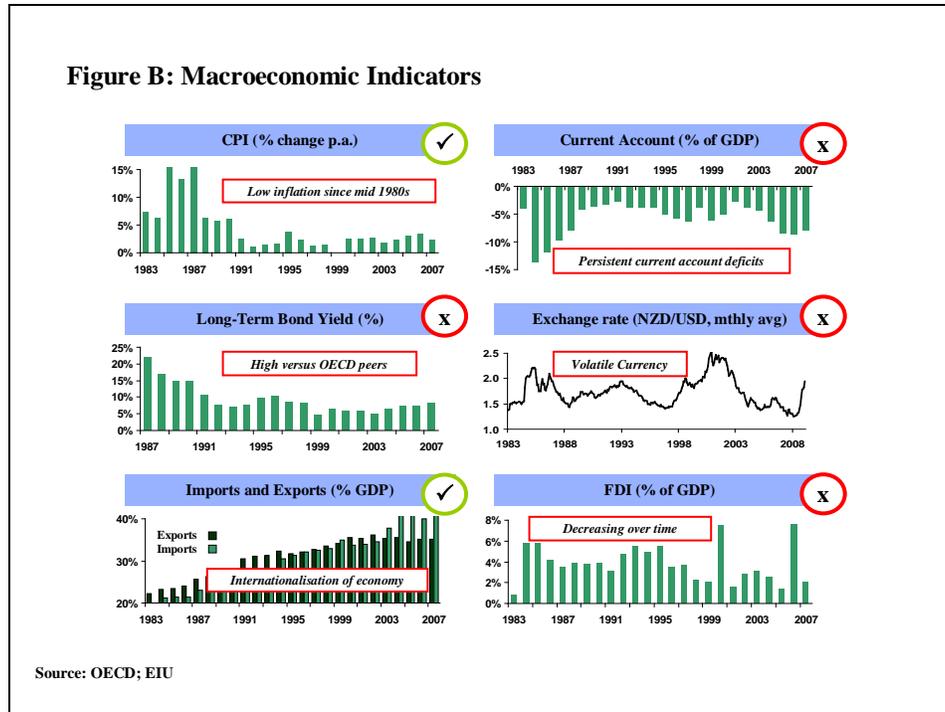


1.2. Recent Economic Performance

In 2007, NZ's PPP-adjusted GDP per capita was US\$27,100, 12% below the OECD average, 25% below Australia and 40% below the US. From 1970 to 2006, NZ's GDP per capita grew at an average annual rate of 1.2%, significantly below the comparable OECD growth rate of 2% (OECD 2009). In addition, as illustrated in **Figure A**, this growth has been driven primarily by increased workforce participation: in 2008, NZ had the 5th highest labor utilization rate in the OECD. In contrast, between 1983 and 2007, NZ's labor productivity grew at an average annual rate of only 1.4%, compared to a rate of 1.8% for Australia and 2% for the G7 countries (OECD Statistics 2007). As a result, an hour worked in NZ produces on average 30% less output than an hour worked in Australia and 40% less than an hour worked in the United States (OECD 2009).

NZ's recent macroeconomic performance has been mixed, as illustrated by **Figure B**. In the last two decades inflation and unemployment have been low, however the economy has endured high interest rates, volatile exchange rates and persistent current account deficits. Since 2008, NZ has

been in recession, and although its banks are fundamentally sound, they are heavily reliant on foreign borrowing (EIU 2008).



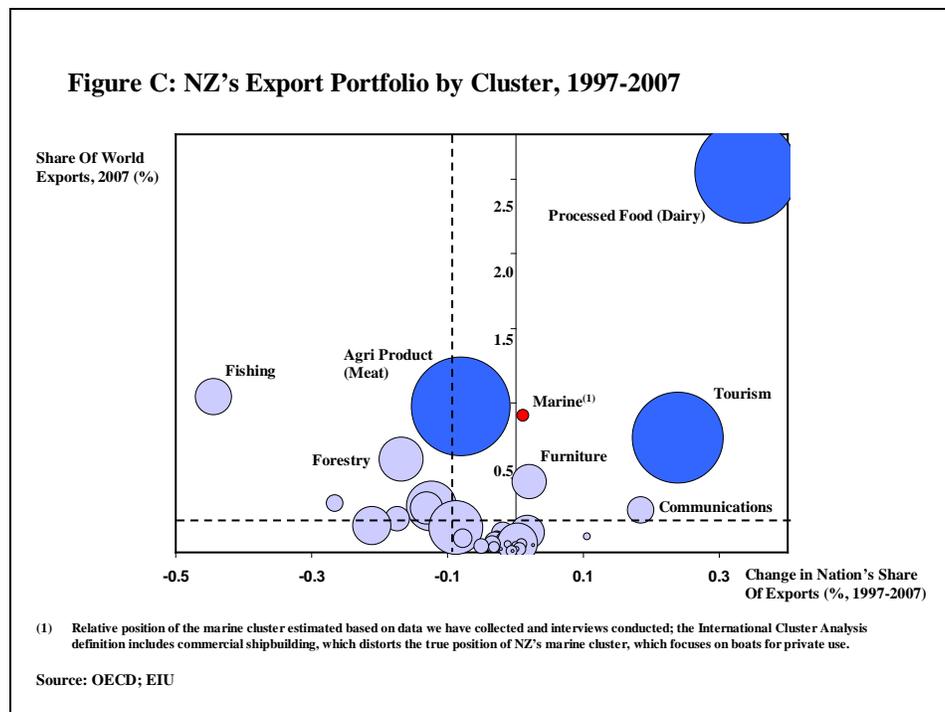
NZ’s research and development (“**R&D**”) spending of 1.2% of GDP is significantly below the OECD average of 2.3%. Of more concern, only 42% of R&D is financed by business (as compared to an OECD average of 69%). As a result, NZ has a poor record of commercializing research and there are weak linkages between business and the publicly-funded Crown Research Institutes (OECD 2009).

Finally, NZ performs well on a number of social dimensions: it ranks 20th on the Human Development Index, with particularly high scores for primary and secondary enrolment, literacy

rates and life expectancy. Further, its Gini co-efficient of 0.34 indicates relatively low levels of income inequality².

1.3. Composition of the Economy

For a developed country, NZ's economy remains remarkably undiversified. Agriculture, which includes dairy, meat, forestry, fruit, fishing and wool, accounts for less than 5% of GDP but 47% of exports (EIU 2008)³. NZ's largest and most competitive cluster is the dairy cluster: NZ is the world's lowest cost producer and largest exporter of dairy products (see **Figure C**). Industry and services comprise the remainder of domestic economy, accounting for 26% and 69% of GDP respectively.



² Although, unsurprisingly, inequality in NZ has increased since welfare spending was reduced in the mid-1980s.

³ Statistics New Zealand, <http://www.stats.govt.nz/default.htm>

2. Assessment of the National Business Environment

As discussed, NZ has had low levels of labor productivity growth for over two decades. Whilst NZ's macroeconomic reforms in the 1980s transformed the country into one of the most "progressive bastions of free enterprise in the world" (Rowe 2005), NZ's microeconomic performance continues to falter. In 2008, the *Global Competitiveness Report* ranked NZ 11th in the world for the competitiveness of its macroeconomic policies, 12th for the quality of its social infrastructure and political institutions, but only 27th for the competitiveness of its microeconomic environment (GCR 2008)⁴. This section analyzes NZ's national business environment and examines the causes of NZ's lackluster performance.

2.1. Macroeconomic, Political, Legal and Social context

NZ is a democratic parliamentary monarchy, which is governed by a unicameral parliament, elected by compulsory vote every three years using the mixed-member proportional system. As a result of the *Fiscal Responsibility Act 1994*, the government is obliged to practice "responsible fiscal management". It provides NZ citizens with periodic reports detailing its economic goals, performance and explanations for any deviations. Since the introduction of the Act, the government has maintained surpluses on its operating budget (EIU 2008). NZ has an unwritten constitution and a robust legal system based on the British common law system.

Since 1989, the country has had an independent central bank, the Reserve Bank of NZ ("RBNZ"), whose primary mandate is inflation targeting. From 2004, the RBNZ has also been permitted to intervene in currency markets if the NZ dollar becomes "exceptionally and unjustifiably" high or low (EIU 2008).

⁴ NZ's overall Global Competitiveness Index was 16

NZ's levels of tariffs and subsidies remain remarkably low: in 2006, the country's weighted average tariff rate was 2.7 percent⁵. At 2% of output value, NZ's agricultural support was the lowest among industrialized countries and compared favorably to an OECD average of 40%⁶. NZ has business friendly labor regulations: the *Employment Contracts Act 1991* deregulated the labor market and replaced unionized wage bargaining with individual contract negotiations. More recently, a number of worker protections have been reintroduced as a result of the *Employment Relations Act 2000*, which aims to promote good faith, voluntary collective bargaining (EIU 2008).

NZ has a population of 4.2 million, making it one tenth as populous as the average OECD country (OECD 2009). 70% of New Zealanders are of European descent, 8% are Maori, 6% are Asian and 4% are Pacific Islanders. The country's relationship with the indigenous Maori population has been strained since European settlement, formalized in 1840 in the Treaty of Waitangi. A number of initiatives attempt to redress past injustices against the Maori: for example seven of the 120 seats in NZ's parliament are reserved for Maori and the NZ court system includes a separate court to hear disputes regarding Maori land. NZ's official languages are English and Maori.

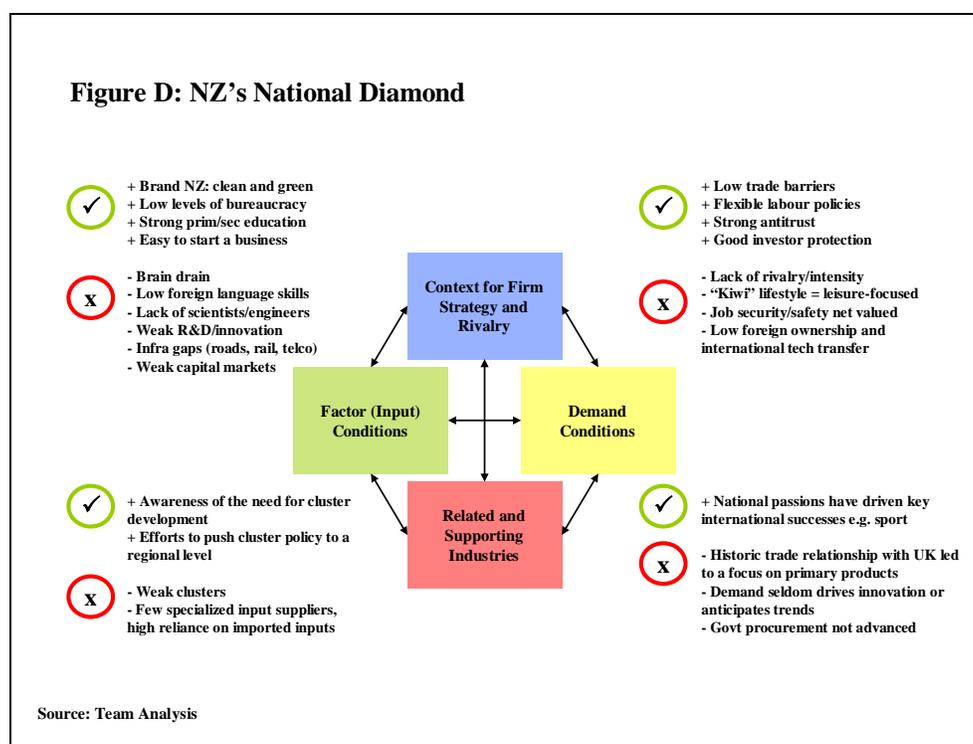
2.2. NZ's National Diamond

NZ's business environment ranks 26th in the world, which is above its GDP per capita ranking of 32nd (GCR 2008). However, an analysis of the national diamond illustrates that this ranking comprises both extreme highs and lows: NZ boasts top ten rankings in 25% of all criteria

⁵ The Heritage Foundation, <http://www.heritage.org/index/Country/NewZealand>

⁶ Frontier Center for Public Policy, <http://www.fcpp.org>

measured, including several first place positions. However it also ranks below 50 in 25% of the criteria (see **Figure D**)⁷.



Factor Conditions: NZ has strong administrative infrastructure, with an efficient bureaucracy, rigorous regulations, a simple tax system, and easy processes for starting a business. However, there are number of factor conditions which detract from NZ's business environment.

First, NZ's capital markets are shallow and unsophisticated, and high interest rates have failed to spur domestic savings or curb real estate investment. Many businesspeople who we interviewed cited currency volatility as a major disincentive to capital investment, particularly in non-agricultural industries. As a result of these factors, NZ has low levels of capital investment per worker, which contributes to the country's poor labor productivity. In 2008, NZ's investment per

⁷ As reference, Switzerland, Kuwait and the Netherlands are 9th, 10th and 11th in terms of GDP per capita whilst Croatia, Russia, and Chile rank 49th, 50th and 51st

worker was 63% of the OECD average, and less than half of Australia's investment per worker (OECD 2009).

Secondly, while New Zealanders enjoy access to high quality education, graduate skills are often misaligned with industry needs and NZ fails to retain its most productive citizens⁸. In 2005, 24% of tertiary-educated New Zealanders lived overseas, 75% of them in Australia (Collins 2005). Indeed research by Cately cites evidence that over 30% of NZ's richest citizens and over 40% of graduates of NZ's most prestigious medical school live abroad (Cately 2001). Whilst the government has partially offset these trends with skilled immigration programs, in recent years immigration numbers have declined whilst the rate of emigration has increased (OECD 2008).

Finally, the country's physical infrastructure, particularly its electricity system, road network, railways and ports need to be upgraded (OECD 2009)⁹.

Demand Conditions: With a few notable exceptions (for example, marine, sport and recreation), domestic demand does not enhance competitiveness in NZ. The population is small, and rarely leads consumption trends. However, robust regulatory standards and environmental regulations ensure NZ firms keep pace with international compliance¹⁰.

Context for Strategy and Rivalry: Rigorous investor protection, strong antitrust enforcement, robust banks, flexible labor markets and low trade barriers, should result in a competitive market, however, the NZ economy is dominated by a few large companies and a long-tail of sub-scale

⁸ For instance, more law graduates per capita than the US, but 77th for availability of scientists and engineers

⁹ Suboptimal infrastructure has been highlighted as the most serious barrier to doing business in NZ by the OECD (OECD 2009)

¹⁰ For instance NZ ranks 8th for stringency of environmental regulations (GCI)

small and medium enterprises, culminating in a complacent, low-tech private sector¹¹. Two contributing factors should be noted. First, foreign direct investment (“**FDI**”) has waned in recent years, perhaps deterred by NZ’s atypical FDI approval regime: in order to obtain government consent, the onus is on prospective investors to demonstrate that their investment will result in a “net benefit” for the country (OECD 2009).

Secondly, NZ’s distance from major markets combined with its small population, presents an economic hurdle for the country. Given the size of NZ’s domestic market, few companies have specialized or achieved significant economies of scale. In addition, distance acts as a natural barrier to foreign competition allowing NZ companies to remain complacent (OECD 2009). Key drivers of productivity such as FDI, trade, technology diffusion and human capital flows are stymied by NZ’s isolation. The OECD estimates that NZ’s remoteness accounts for 75% of the gap in GDP per capita between NZ and the OECD average. The OECD further estimates that a 10% increase in distance reduces trade by approximately 10% and FDI flows by 4% (OECD 2009).

Related and Supporting Industries: The weakest part of NZ’s national diamond is its RSI, ranked 49th overall and 92nd for cluster policy. NZ has very few effective clusters, particularly outside of agriculture. One notable exception is the country’s marine cluster. NZ is highly reliant on imports for specialized inputs, which has proven to be an impediment to the development of successful downstream clusters.

¹¹ NZ ranks 66th for intensity of local competition, and 42nd in (low) dominance by large businesses (GCI)

2.3 Government Policy

Successive governments have attempted to address many of the weaknesses in the national diamond, but with mixed results.

Cluster Policy: Despite several attempts, NZ does not currently have a national cluster policy. In 2002 NZ Trade and Enterprise (“NZTE”), the government’s key economic development agency launched the *Cluster Development Programme* (“CDP”). The CDP, which provided a total of \$3mn of funding to 82 clusters over a three year period, was discontinued in 2006 following a review of its effectiveness¹². Under the CDP, funding for each cluster was capped, limited to two years, and restricted to the partial funding of a cluster facilitator. The CDP provided too little to too many, with most assistance targeted toward speculative pre-cluster entities¹³. Even in the case of established sectors, such as the marine industry, the CDP’s funding caps encouraged fragmentation¹⁴.

Since the collapse of the CDP NZTE has implemented a number of initiatives aimed at increasing private sector competitiveness. First, NZTE has a number of *Strategic Initiatives* that provide assistance to industries that NZTE believes have competitiveness *potential* over the medium to long-term. Such industries include the film, wool, niche technology, manufacturing, healthcare and sustainability sectors. Secondly, NZTE’s *Regional Strategy Fund*, provides limited funding for regional economic development. For example, NZTE has provided funding

¹² Unless stated otherwise, all monetary amounts are quoted in NZ dollars

¹³ Examples include: Golf tourism, ‘Drugs from nature’, Earthquake engineering, and Maori and Pacific Island consulting. Eligibility for assistance was determined by proof of *potential* to achieve *one* or more of the following: 1. sustainable competitive advantage; 2. significant export potential (~NZ\$30m); or 3. value chain efficiencies. According to the CDP review, NZTE believed there were 126 separate clusters in NZ in 2005, and 260 in 2002

¹⁴ For example there were six separate marine ‘clusters’ funded: Boat Building, Marine, Rodney Marine, Northland Marine, Tauranga Marine Services, and the Marine Industry Association. Despite these concerns, a survey of participants revealed NZ\$3.33m in gains in 2005 from CDP participation, from the government’s investment of NZ\$1m (CDP Review)

to *AucklandPlus*, the economic development arm of the Auckland Regional Council, to implement aspects of the region's economic strategy.

Other policies: In an attempt to improve factor conditions the recently elected government has made infrastructure a priority, announcing funding for roads and transport (\$140mn), high speed broadband infrastructure (\$1.5bn) and the country's railway system (\$115mn). Earlier, in an attempt to deepen capital markets, increase savings and mitigate the impact of retiring baby boomers, the previous Government introduced *Kiwisaver*, a national superannuation scheme, in 2007¹⁵. In addition, the Government's \$200mn NZ Venture Investment Fund aims to develop NZ's venture capital industry by matching private investments 2:1. Finally, NZTE continues to upgrade the business savvy of domestic firms via the provision of advice, training, mentoring, funding and market development assistance, as well as export support through its network of offices around the world¹⁶.

2.4. Institutions for Collaboration (IFCs)

NZ has a number of IFCs. As discussed, much of the country's R&D is conducted by eight Crown Research Institutes while a myriad of business associations foster collaboration across various industries¹⁷. For instance, firms in the tourism cluster are assisted by the NZ Inbound Tour Operators Council, while the Dairy Companies Association of NZ coordinates lobbying activity for NZ's key dairy players. Some of the more prominent and influential groups and business think tanks in the country include the NZ Institute (a privately funded entity producing

¹⁵ *Kiwisaver* is voluntary (opt-out) scheme that involves workers setting aside income, which is then locked up until retirement. Incentives to contribute are provided by a \$1,000 'kick start' from the government, mandatory employer matching, and tax credits. As of January 2009, membership was 932,636, up from 414,144 in the year previous

¹⁶ In the year to June 2008 NZTE's budget was \$218m

¹⁷ Central and local government entities such as NZTE and the Regional Councils, as well as the country's many universities and polytechnics also have a significant impact on competitiveness

policy content and criticism), the NZ Business Roundtable (an organization of CEOs from major firms), and Business NZ (NZ's largest employer advocacy group representing more than 70 of NZ's national industry associations).

3. New Zealand – Recommendations

NZ lacks a clearly articulated, integrated economic strategy. NZ's leaders need to recognize the need to move beyond agriculture toward value-added products and services where sustained productivity growth can be achieved. To develop the required know-how and business expertise that this will entail, NZ needs to attract FDI and develop a culture of entrepreneurship. In this section we make specific recommendations that we believe will set NZ on this path.

3.1. Institute a New Cluster Program

NZ needs to implement a revised cluster program that will foster domestic business and attract FDI. Specifically, NZTE should identify fewer than ten clusters that are already demonstrating international competitiveness and support these clusters to develop a three to five year strategy. The strategy should be led by the private sector but involve all key stakeholders (e.g. businesses, government, universities etc)¹⁸ and where necessary NZTE should provide a facilitator to help coordinate the cluster development process. Significant co-funding from the Government would then be available for specific projects that support the cluster's strategy. A key goal of the cluster program should be to identify specific areas where the government can help these clusters develop. In addition, each cluster group should identify areas where targeted FDI could add to the cluster's competitiveness.

¹⁸ The collaborative approach adopted by AucklandPlus in its *Marine Sector Feasibility Study* may be an appropriate blueprint for NZ's other key clusters. The *Marine Sector Feasibility Study* is an exercise currently underway, intended to provide strategic direction for Auckland's marine cluster

3.2. Encourage Domestic and Foreign Investments

NZ needs domestic and foreign investment to shift the composition of its economy to higher value-add sectors and raise labor productivity. We recommend two specific initiatives.

First, to increase domestic investment, local savings needs to be increased. The *Kiwisaver* scheme is helpful in this regard but should be made compulsory. The government should also remove fiscal distortions such as the tax rebate on residential investments to ensure capital is directed at the productive sector. Secondly, NZ should change its atypical FDI regime to signal the country's openness to FDI and increase government accountability when particular foreign investments are rejected. Specifically, NZ should shift the onus required for FDI by asking the government to prove net detriment when particular investments are disallowed rather than requiring foreign investors to prove net benefit as a precondition to investing (OECD 2009).

3.3. Mitigate the Impact of NZ's Geographic Distance

NZ's distance from major markets inhibits FDI and constrains the growth of domestic business. We advocate four actions to mitigate the impact of NZ's isolation. First, NZ should privatize its ports, with the aim of improving their efficiency. At present, most of NZ's ports are owned by local authorities, resulting in infrastructure duplication and lack of coordination. Secondly, the government should improve its international air transport efficiency by instituting Open Skies agreements. Thirdly, it should streamline customs requirements by reducing document requirements and allowing electronic filing. At present NZ's customs processes are 50% less efficient and 25% more costly than those of leading countries (OECD 2009). Finally, NZTE should train businesses to help them adopt technologies that creatively overcome distance. For example, a number of NZ manufacturing firms use webcams to allow their customers to monitor the progress of custom built orders.

3.4 Alleviate Factor Condition Bottlenecks

Infrastructure: NZ's infrastructure needs to be upgraded to facilitate companies' day to day operations and further encourage investment. Areas that require particular focus are electricity supply, telephone infrastructure, roads and railroads.

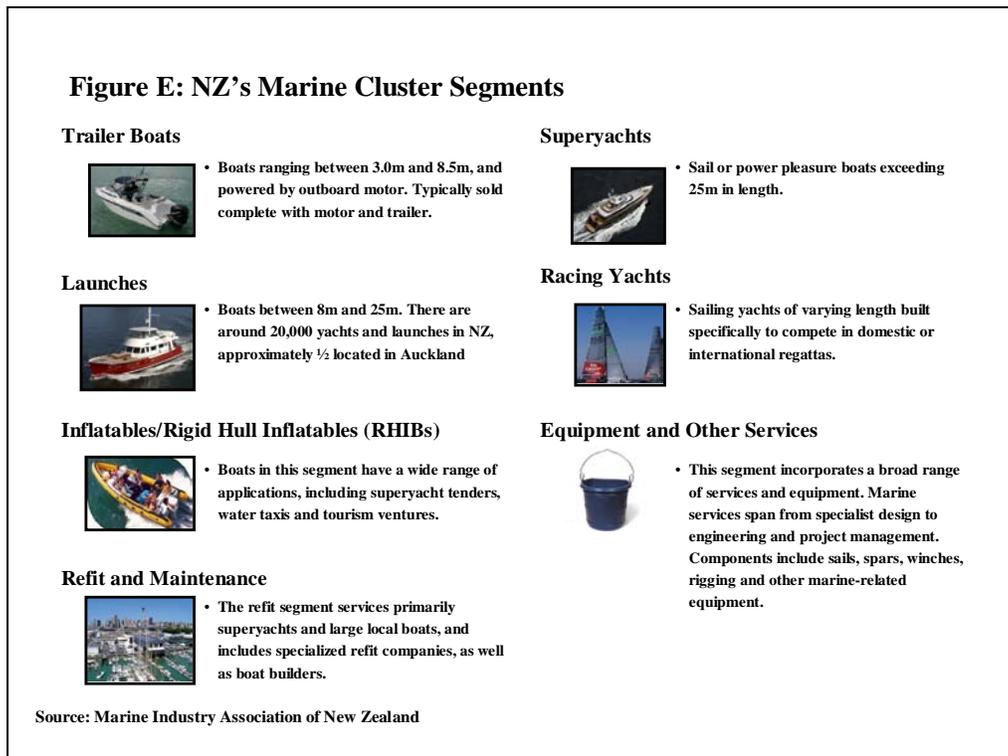
Human Capital: NZ would benefit from increased skilled migration. We recommend that the Department of Labour (“**DoL**”), the government agency which oversees migration, undertake three particular initiatives. First, the DoL should expand its campaign to attract skilled migrants in countries such as the United Kingdom, Canada and South Africa. The campaigns should focus on NZ's outstanding quality of life. Secondly, the DoL should simplify and expedite the application process for skilled migrants and work with relevant certifying bodies to determine whether foreign qualifications (such as medical and engineering qualifications) can be more readily recognized in NZ. Finally, the DoL and the Ministry of Education (“**MoE**”) should work to increase the number of foreign students who are studying in NZ, and encourage them to remain in the country upon graduation. The number of international students peaked at 85,000 in 2002, but has since dropped to 70,000. Only 27% of these students remain in NZ after graduating (DoL 2007).

The MoE should consider two additional actions. First, it should liaise with the business community and reform tertiary education policy and funding to ensure that NZ graduates meet the needs of the private sector. In particular NZ universities must educate more scientists and engineers. Secondly, the MoE should consider encouraging science and engineering graduates to remain and work in NZ upon graduation through a debt forgiveness program, whereby student loans would be progressively forgiven for each year worked in NZ.

C. Marine – Cluster Analysis

1. Cluster Definition

In this paper, the NZ Marine Cluster is defined as firms active in non-commercial boat production, as well as related equipment and services. The Marine Industry Association of New Zealand (“MIA”) categorizes the recreational marine sector as outlined below in **Figure E**¹⁹.



2. Cluster Performance and Relative Positioning

The NZ marine cluster is a \$1.9bn (US\$1.1bn) industry, which has grown strongly since the late 1980s. Over the period 2003 to 2008, total cluster sales increased by 7% p.a., with all segments growing except trailer boats.

¹⁹ Marine Industry Association New Zealand

NZ's superyachts and racing yachts segments are the most internationally competitive segments, as measured by the share of sales that are exported²⁰. In 2008, NZ exported 98% of its superyachts and 76% of racing yachts²¹. NZ is the 10th largest producer of superyachts globally with an estimated market share of less than 2%²². However the aggregate data mask NZ's strong position in *sailing* superyachts, where NZ is estimated to have a 16% global market share, making it the number three player globally²³. The superyacht segment also has the highest firm concentration, with nine companies active in the space and an average of 130 FTEs per company²⁴.

As **Figure F** illustrates, the yachts and launches segment exhibits the highest levels of import penetration, at close to 50% of domestic sales. Standardization and economies of scale matter more in this segment than in superyachts as consumers are more cost conscious²⁵. Approximately 65 firms operate in this segment (30 of which are small one to two person operations), while competition from foreign firms is intense²⁶. Higher import penetration relative to the trailer boat segment, for example, is explained by the fact that freight costs are lower relative to the value of the product being shipped²⁷.

²⁰ Marine Industry Association New Zealand

²¹ Ibid

²² Showboats International, January 2008

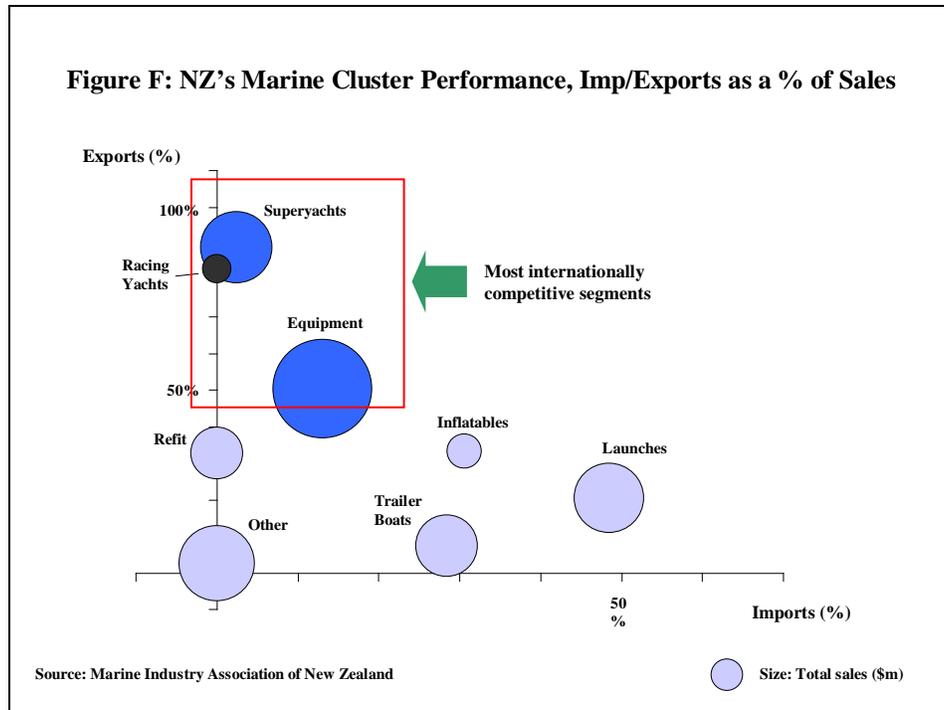
²³ Marine Industry Association New Zealand, "New Zealand Marine Industry Survey 2008"

²⁴ Ibid

²⁵ Marine industry interview

²⁶ Ibid

²⁷ Ibid



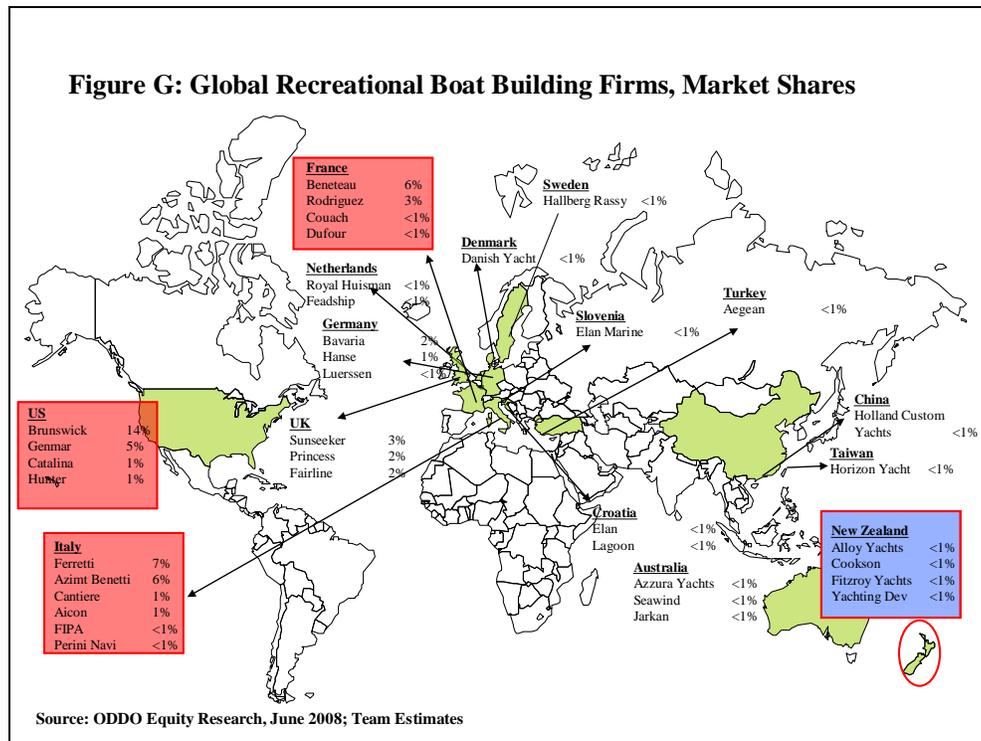
Historically, NZ has competed in boatbuilding with countries such as Italy, France and the US, which, as can be seen in the chart below, are home to some of the world's largest boat builders (**Figure G**). More recently, however, boat production has started to move to countries such as China and Turkey, where labor costs are lower and environmental standards less stringent.

NZ's focus on superyachts, makes it less vulnerable to these cost pressures as purchasing decisions in this segment tend to prioritize design and performance over cost²⁸. The global superyachts market grew at 14% p.a. between 2003 and 2008²⁹ however the majority of the demand is met by production yachts, which are boats produced at volume. NZ, on the other hand, produces primarily custom-built yachts. In this space, NZ's large exporters such as Alloy Yachts compete with a much smaller set of firms such as Italy's Perini Navi and the Netherland's Royal

²⁸ Marine industry interview

²⁹ Showboats International

Huisman Shipyard³⁰. The focus on custom yacht building also makes NZ somewhat more resilient to the severe economic downturn that the global marine industry is currently experiencing. According to one of our interviewees, “the financial crisis has hurt the millionaires, but the billionaires still have money to spend.”³¹



3. Cluster Location and Cluster Map

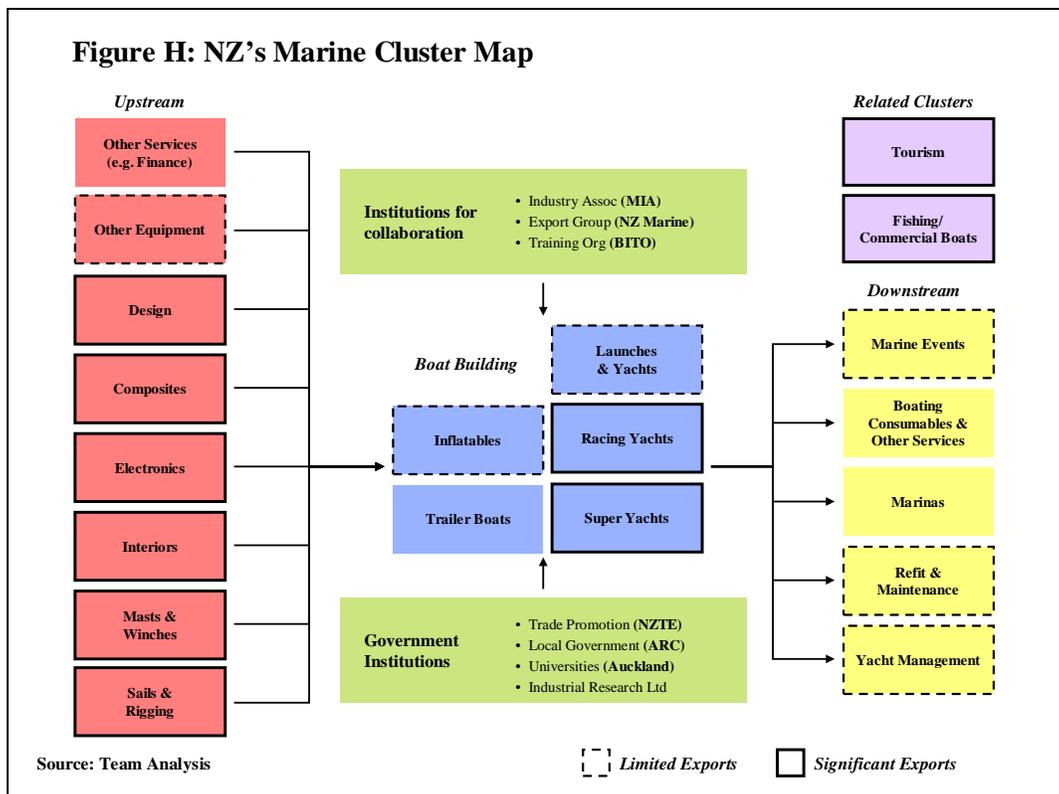
75% of marine industry activity is clustered near and around Auckland, for two important reasons: first, Auckland, with one quarter of the population is NZ’s densest city and represents a significant portion of local demand. Secondly, Auckland has two natural harbors and a large number of marinas, facilitating demand and transportation. A large number of marine companies as well the MIA are located in Wynyard Point and nearby Westhaven, NZ’s largest marina.

³⁰ Marine industry interview

³¹ Ibid

Interestingly, two of the cluster’s key exporters, North Sails and Southern Spars, are even located in the same building.

The marine cluster (see **Figure H**, Cluster Map) is focused on boat building, although it also encompasses upstream and downstream activities. Through a number of interviews with industry participants we have sought to identify the extent to which the different parts of the cluster are internationally competitive. A number of world-leading firms are active in upstream activities. For instance, High Modulus is a leading composites player, Southern Spars is a leading spars exporter and North Sails is a world leader in sails. In boat building, Alloy Yachts and Cookson are two internationally renowned companies in superyachts and racing yachts respectively.



Downstream activities such as Refit / Maintenance and Marine Events also play an important role in the cluster. The reputation that NZ has created for itself in boat building attracts many

yacht owners to get their yacht overhauled and refitted in NZ once every few years. Yacht Management companies also have an important voice in determining the location in which a large yacht should be serviced, while marine events such as international sailing regattas have helped boost NZ's brand image and further stimulate local demand within the cluster.

The Tourism and Commercial Boats clusters are closely related to the marine cluster and provide important inter-linkages. For instance, the high quality of hotels and restaurants in Auckland and the presence of natural tourist attractions in NZ attract boat owners from around the world to get their yachts refitted whilst taking an extended vacation in NZ.

4. Institutes for Collaboration

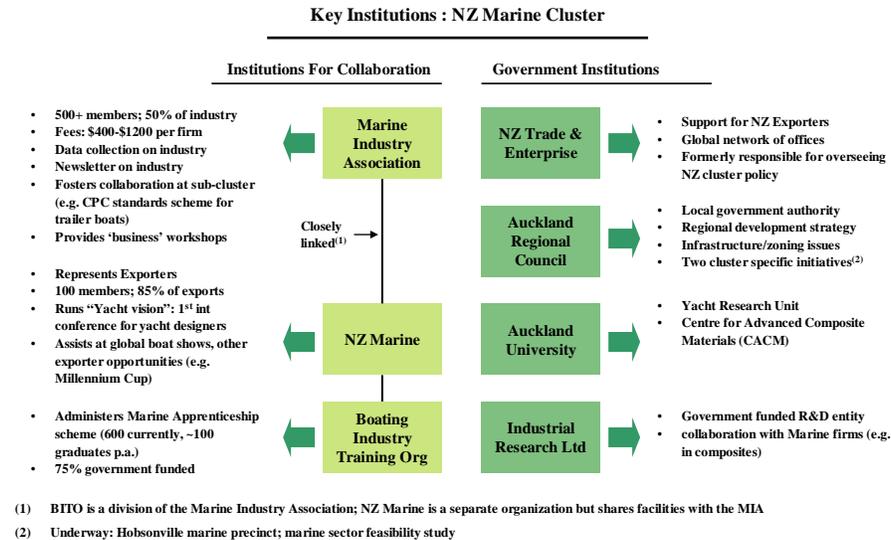
A number of IFCs and Government Institutions play key roles in NZ's marine cluster. As shown in **Figure I**, the main IFC is the MIA, which has more than 500 members. In addition to collecting industry data, the MIA fosters collaboration on a sub-cluster level. The Boating Industry Training Organization (“**BITO**”) is a division of the MIA. Whilst there are no formal linkages between the MIA and NZ Marine, in practice these institutions work together and share common facilities. The cluster is also supported by AucklandPlus, the economic development arm of Auckland Regional Council, who has partnered with the cluster on various initiatives as part of the Auckland regions' economic development strategy.³²

The existence of these institutions is important for the long-term success of the marine cluster. However, based on our discussions with industry participants, it does seem that the effectiveness of these IFCs could be improved. For example, the MIA is regarded by some as more of “a

³² For example, they continue to act as conduit between central government and property developers for the Hobsonville Marine precinct, and oversee the *Marine Sector Feasibility Study*, an exercise intended to provide strategic direction for the industry (identifying growth opportunities in refit and components in particular)

forum for MDs to meet”³³ rather than fostering real collaboration, which more often “occurs naturally in the industry on a project by project basis”³⁴. Further, only half of all cluster participants are MIA members, with many smaller firms questioning its value.

Figure I: Key Institutions in NZ’s Marine Cluster



5. Cluster Development

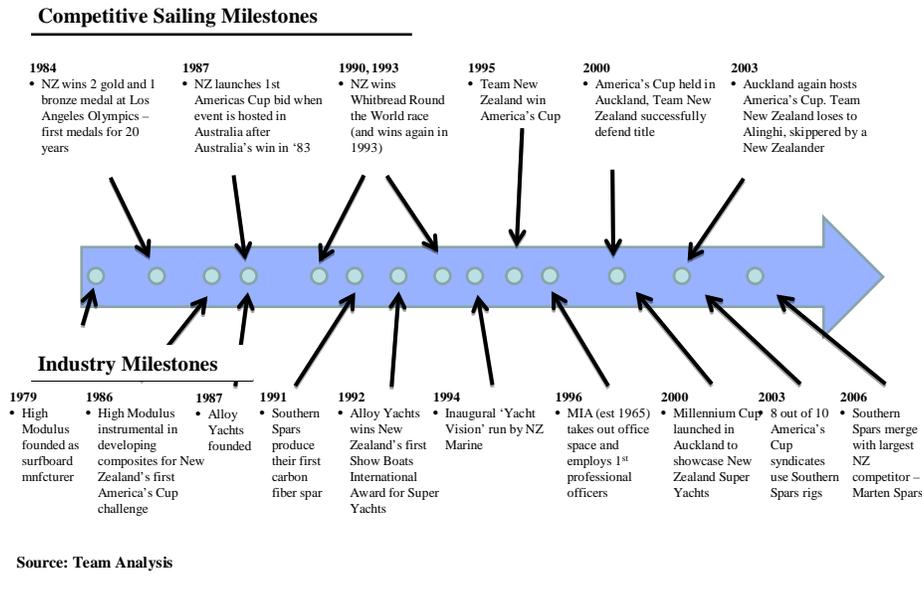
Two factors have been central to the development of NZ’s marine cluster. First, favorable endowments have fostered strong domestic demand, and a temperate climate and ready access to the sea make sailing and boating popular leisure-time activities (one in eight New Zealanders owns a boat). Secondly, many of the cluster’s leading firms have contributed to, and benefited from, NZ’s success in competitive sailing (see **Figure J**). Firms such as High Modulus and Cookson were founded as far back as the late 1970s, but close partnerships with the Team NZ America’s Cup syndicate (and others such as Southern Spars and North Sails), led to key

³³ Marine industry interview

³⁴ Ibid

technology breakthroughs and enhanced credibility in the global marine market³⁵. These relationships created the core of the most competitive firms that are at the center of today's cluster.

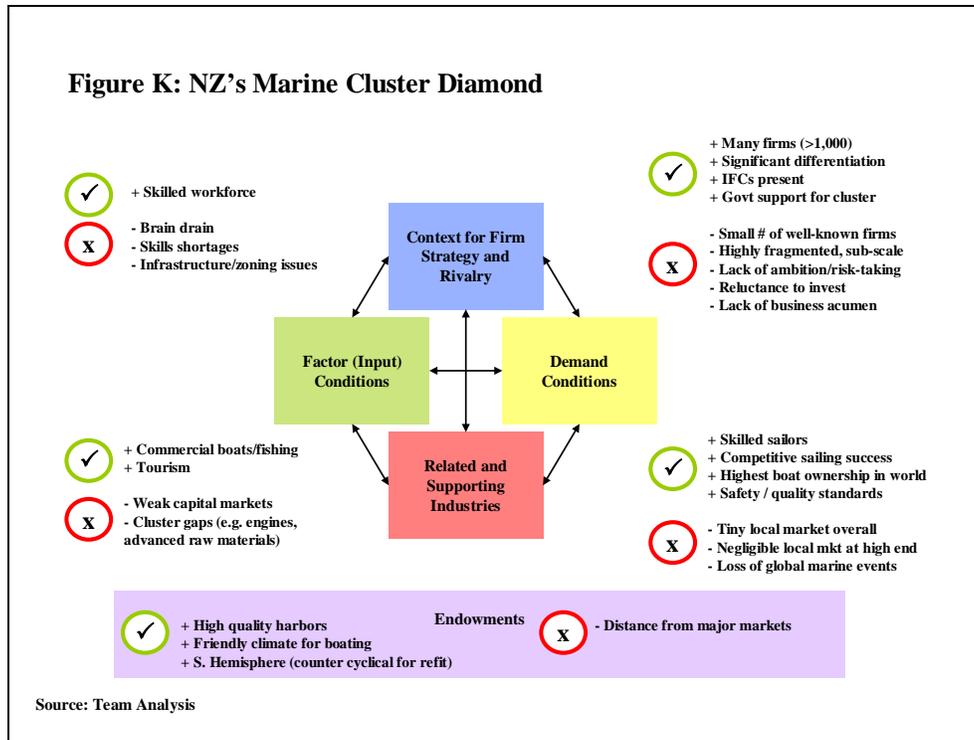
Figure J: NZ's Marine Cluster Development



6. Cluster Diamond

As shown in **Figure K**, the marine cluster diamond boasts areas of considerable strength offset by significant weaknesses, many of which are common to the national diamond, outlined earlier.

³⁵ Marine industry interview



Endowments: The marine cluster derives strength from a solid base of natural endowments. Along with favorable conditions for sailing, NZ's Southern Hemisphere location offers a refit and maintenance alternative, during the Northern Hemisphere "off season". As we saw at the country level, however, distance from US and European markets present ongoing challenges.

Factor Conditions: The cluster benefits from a skilled workforce and a strong apprenticeship program overseen by the BITO³⁶. "NZ talent is often poached³⁷", however, by firms overseas, which has manifested in skills shortages³⁸. While the current downturn provides some relief, the skills deficit remains a limiting factor for future growth in the cluster.

³⁶ BITO's apprenticeship program has been running for five years and supplies the largest number of qualified boat builders in the world. It is designed and administered by the industry with Government funding; Marine industry interview

³⁷ Ibid

³⁸ Firms on average understaffed by 5 workers (MIA survey, 2008)

Infrastructure presents a mixed picture. Recent developments at Westhaven and Hobsonville have alleviated immediate space/facility constraints however delays in reaching approvals for both of these projects³⁹ did result in some investments being postponed⁴⁰. This may be indicative of an inappropriate approvals process or a lack of top level (government) support.

Related and Supporting Industries: The cluster benefits from links with related industries such as tourism⁴¹ and commercial boats / fishing, but is hindered by NZ's weak capital markets (e.g. limited debt financing has constrained growth). There are also gaps within the cluster, particularly upstream, where many of the raw material and machinery inputs are sourced from overseas due to a lack of domestic demand⁴².

Demand Conditions: As mentioned, the cluster benefits from strong local demand for boating, while competitive sailing success has helped boost the NZ brand. Moreover, New Zealanders working as crew on foreign-owned boats are frequently able to impact purchase decisions⁴³. Stringent quality and safety standards, also help upgrade demand, for example, NZ's CPC Trailer Boat certification program requires twice yearly audits and a paper trail throughout the manufacturing process⁴⁴. In terms of negatives, however, there is little local demand for higher-end product (e.g. superyachts), and the cluster is feeling the impact of losing key marine events such as the America's Cup and the Volvo Ocean Race.

³⁹ The 50-acre Hobsonville project required a 10 year approval process

⁴⁰ Marine industry interview

⁴¹ Auckland brands itself as the "City of Sails"

⁴² For example, all engines are imported as are many of the raw materials required by composites manufacturers

⁴³ Marine industry interview

⁴⁴ Ibid. However, participants in the program argue that it should be made compulsory, as they feel it places them at a cost disadvantage to domestic non-participants

Context for Firm Strategy and Rivalry: On its surface, the cluster boasts an excellent competitive context, with over 1,000 firms, significant differentiation, and some world class “tent-pole” companies. A second look, however, reveals damaging levels of fragmentation⁴⁵, which creates vulnerability and contributes to a lack of scale. Many of these small firms also lack business savvy⁴⁶, ambition, and are unwilling to invest; limiting growth and inhibiting the cluster from upgrading⁴⁷. Finally, the truly world class firms in the cluster typically limit their focus to the very high-end, low volume segments, limiting the scope of the cluster to a very small part of the overall marine market.

7. Marine Cluster – Recommendations

Understandably, surviving the current economic crisis is the central focus of many of the cluster’s participants. Beyond this, however, the cluster needs a clearly articulated strategy to ensure its long-term viability. We believe there are four key planks to such a strategy: expanding on current strengths, consolidation, leveraging expertise into new areas, and moving beyond custom manufacturing of low volume, high-end products.

7.1. Expand on Current Strengths

NZ’s remarkable domestic demand has scope to become even more sophisticated. We would recommend inserting sailing into the school sporting curriculum and increasing support for coaching programs. The NZ government also needs to continue to support the presence of major marine events in NZ, both through lobbying and financial incentives where necessary.

⁴⁵ 85% of firms having four or fewer employees; Marine industry interview

⁴⁶ As an example, one interviewee told an anecdote of NZ firms trying to sell to Arab Sheiks at the Monaco Boat Show wearing flip-flops and shorts

⁴⁷ Marine industry interview

The MIA needs to broaden its scope, focusing on best practice sharing throughout the cluster. This is particularly critical regarding core business skills, which are lacking amongst many cluster participants. The influence of the MIA is also weakened by its limited membership base. Many small firms that would benefit from knowledge sharing are not currently members. To broaden membership levels the MIA needs to lower membership fees for smaller firms and more clearly communicate the benefits that membership provides.

Finally, the cluster needs to expand / develop those high value sectors where freight costs are not an impediment to export success. This includes not only the super-yacht / racing sectors, but also areas outside of boat-building, such as high value components, refit, and design services. Firms such as Maxwell Winches, Navman (navigation devices), and Robinson Marine Interiors have each demonstrated the feasibility of such a strategy. The ratio of product value to freight costs should be a key criterion determining government support, and a focus of marine cluster initiatives.

7.2. Increase Industry Consolidation and Collaboration

There will likely always be a significant number of “father and son” type firms within the marine industry and such diversity may well help stimulate innovation. We believe, however, that consolidation or a dramatic increase in collaboration is necessary if the cluster is to take the next step and upgrade its competitiveness.

Two recommendations could address the issue of fragmentation. First, there needs to be a much greater push for collaboration by the MIA, championed by key firms in the cluster. Although the MIA has had some success in encouraging the hiring out of machinery and contracting out of

labor⁴⁸, there seems to be an element of animosity and destructive price competition across firms⁴⁹. The cluster must come together and recognize the benefits of working collectively, sharing resources to enhance competitiveness. While the MIA is the obvious candidate to lead this process, prominent firms in the sector must also play an active role in pushing and supporting this agenda, taking the baton forward themselves where progress seems slow. Smaller firms must be encouraged and incentivized to take part, with some of the greatest gains to be found in reforming the long-tail of sub-scale operators in the cluster.

Secondly, national solutions to address capital constraints will also help. Greater access to financing would facilitate an industry “roll-up” and consolidation, strategies that stronger firms should be pursuing. Cluster leaders, supported by the MIA, should enter into an active dialogue with local banks as support from the local banking sector is currently lacking⁵⁰. FDI should also be courted as a source of capital. Indeed, many of the most sophisticated firms in the cluster are those under foreign ownership, and as a number of acquisitions have shown, fears around job losses are generally unfounded while competitiveness is typically enhanced⁵¹. NZTE needs to sell NZ as a country open to investment, the government needs to reform its FDI policy, and the MIA should embrace foreign capital and help educate participants in the cluster of its many benefits.

⁴⁸ Marine industry interview

⁴⁹ Ibid

⁵⁰ Ibid

⁵¹ For example Rayglass, a trailer boat manufacturer, who were bought out by multinational Brunswick, use Lean manufacturing techniques, and Southern Spars, owned by the North Marine Group, utilize off shore manufacturing in South Africa, and have purchased smaller domestic competitors, such as Marten Spars

7.3 Expand Cluster Expertise into New Areas

The world-class firms in the cluster have human capital and technical expertise amenable to application outside the immediate cluster. For example, High Modulus' composite technology and Southern Spars molding skills could be applied to sectors such as wind turbine production, or aerospace components, which, like marine applications, utilize light, extremely strong composite materials and complex designs. The government could aid this process, by matching private sector R&D when it is directed at related high-tech industries. FDI in these related industries could be encouraged through the formation of JVs with international companies already active in these sectors.

7.4. Move beyond custom-built, low volume niche

The market for custom built products is of limited size, constraining the growth potential of the cluster. While additional efforts may help grow the market, in the long-run firms within the cluster should be looking to develop production manufacturing skills that will allow them to compete in the much larger segments of the market. As an example, Alloy Yachts could move into higher volume production manufacturing of superyachts leveraging existing skills and reputation for quality. To lower the risks of such a strategy, it could partner with experienced production boat manufacturers overseas. If the leading firms were able to successfully transition into production manufacturing this would be a game changer for the cluster in terms of the skills this would create and the export markets this would open up.

7.5. Other Recommendations

While our previous suggestions address what we see as the cluster's major challenges, at least two other areas also warrant attention.

Overcoming geographic isolation: Increasing the use of communications technology such as webcams, and partnering with NZTE to launch satellite sales offices in major markets could help the cluster overcome the challenge of distance from US and European markets.

Resolving skills shortages/retention: Capturing the cluster's needs in the "skilled migrant" category of national immigration policy would be a start, while increasing funding and support for marine apprenticeships would help keep the supply of skills ahead of demand. The MIA should also look to partner with Auckland University to develop marine specific courses, focusing on technical skills such as yacht design, as well as more general business/management.

D. Conclusion

In this paper we analyzed NZ and its marine cluster. Despite lackluster growth in the past two decades, NZ has the potential to upgrade its economy. The country needs to articulate a cohesive national strategy for economic development and improve its microeconomic environment. Specifically, NZ needs to foster entrepreneurship and encourage FDI in order to decrease its reliance on agriculture and shift economic activity toward value-added products and services where increases in productivity can be achieved and the impact of geographic isolation can be overcome.

The marine industry is an example of a globally competitive cluster in NZ that is not dependent on agriculture. Whilst we are optimistic about the future of the industry we believe there are a number of steps that should be taken to upgrade the cluster's competitiveness. Specifically, the cluster needs to expand on its current strengths, consolidate and increase collaboration, leverage expertise into new areas, and finally, move beyond custom manufacturing of low volume, high-end product.

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3. Interviews

Seventeen interviews were conducted, comprising a wide range of industry participants and other stakeholders.

We have kept the identity of interviewees anonymous so as to encourage as free and frank a dialogue as possible.

4. Required disclosure:

Ben Mayson is a citizen of New Zealand. Adam Ireland spent one year working in New Zealand.