

# New Zealand firms: Reaching for the frontier

Summary of submissions on Issues paper

December 2020



## The New Zealand Productivity Commission

Te Kōmihana Whai Hua o Aotearoa<sup>1</sup>

The Commission – an independent Crown entity – completes in depth inquiry reports on topics selected by the Government, carries out productivity related research and promotes understanding of productivity issues. The Commission aims to provide insightful, well-formed and accessible advice that leads to the best possible improvement in the wellbeing of New Zealanders. The New Zealand Productivity Commission Act 2010 guides and binds the Commission.

Information on the Productivity Commission can be found on [www.productivity.govt.nz](http://www.productivity.govt.nz) or by contacting +64 4 903 5150.

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<sup>1</sup> The Commission that pursues abundance for New Zealand



# Contents

<b>1</b>	<b>About this document</b> .....	<b>2</b>
<b>2</b>	<b>The current state of productivity</b> .....	<b>2</b>
<b>3</b>	<b>The importance of management and leadership skills</b> .....	<b>2</b>
3.1	Management capability is a key driver of productivity .....	2
3.2	Lack of awareness is an impediment .....	3
3.3	Ways to lift management awareness and capability .....	3
<b>4</b>	<b>The role of skills</b> .....	<b>4</b>
4.1	Raising skills is critical for productivity.....	4
4.2	Post-graduate study is important for driving innovation .....	4
4.3	Workers need ongoing training and development.....	5
4.4	Need to improve connections between tertiary education and industry .....	5
4.5	Key diffusion mechanisms .....	5
<b>5</b>	<b>The nexus between worker wellbeing and productivity</b> .....	<b>6</b>
5.1	Firms should value and support their workers .....	6
5.2	Increase wages.....	6
<b>6</b>	<b>Supporting a culture of innovation</b> .....	<b>7</b>
6.1	Frontier firms are continually innovating.....	7
6.2	Biases in R&D funding .....	7
6.3	Research institutions disconnected from industry needs .....	7
6.4	Thinking broadly about innovation.....	8
6.5	Ways of thinking about frontier firms .....	8
<b>7</b>	<b>Challenges with expanding overseas</b> .....	<b>9</b>
<b>8</b>	<b>Māori frontier firms</b> .....	<b>9</b>
8.1	Features of Māori frontier firms .....	9
8.2	Ways to better support Māori firms.....	10
<b>9</b>	<b>Support for a clusters-based approach</b> .....	<b>10</b>
	<b>Appendix A List of submitters</b> .....	<b>12</b>
<b>Table</b>		
Table A.1	List of submitters .....	12

# 1 About this document

The Productivity Commission is conducting an inquiry into New Zealand's "frontier firms". These are the most productive firms in the economy, and the Commission is examining how their economic contribution can be maximised, through their own performance and the way they diffuse new technologies and business practices to other domestic firms.

The Commission published an Issues paper in April 2020. That paper outlined the background to the inquiry, the Commission's intended approach, and the matters about which the Commission is seeking comment and information. In light of the COVID-19 situation, an extended timeframe for submissions was provided, with submissions invited by 1 September 2020.

The Commission received 33 written submissions (submitters are listed in the Appendix). The Commission greatly appreciates the time taken by submitters to contribute to the inquiry process, in such busy and challenging times.

This document summarises the key themes from submissions. It focuses on the most commonly raised issues, and groups these thematically. Direct quotes are provided to indicate some of the thinking behind the summarised feedback. Submissions did not necessarily focus on frontier firms, some discussed drivers of and barriers to New Zealand's aggregate productivity performance more generally.

In addition to these formal submissions, the Commission also engaged with a wide range of stakeholders, including businesses, industry organisations, sector experts, academics, research institutions and government agencies. The Commission will take all this feedback, together with the submissions, into account in preparing its draft report.

The draft inquiry report will be published in November 2020, and a further round of public submissions will be invited. The final report is due in March 2021.

## 2 The current state of productivity

The Issues paper set out the Commission's description of the current state of New Zealand's productivity and how this compares to other countries. It sought views on whether this characterisation seems accurate.

Submitters acknowledged the well-trodden description of New Zealand's on-going lacklustre productivity performance, and the difficulties that small market size and geographic isolation impose on firms. Suggested diagnoses and solutions focused on the human side of productivity (particularly management capability and skills matching) and the nature of innovation (including firms' investment in research and development, and the role of government in supporting innovation).

## 3 The importance of management and leadership skills

### 3.1 Management capability is a key driver of productivity

The strongest theme across submissions was the importance of management and leadership skills in driving firm productivity. A total of 13 submissions commented on this issue, and the lack of management capability was the most commonly cited reason for New Zealand's poor productivity performance (raised by subs. 001, 014, 018, 021, 025). The role of boards was also mentioned in this context.

It is the board/managers of a firm who make the decisions as to what to produce, how to produce it (especially the mix of capital and labour), how to market their output, etc... The severe shortage of knowledge-based capital in the form of leadership and management is by far the primary reason New Zealand is failing. (Kevin Sampson, sub. 001, p. 3)

The Icehouse Owner-Manager Programme experience highlights low levels of strategy setting and management capability as the most prevalent hindrances to the latent underperformance of NZ SMEs. (The Icehouse, sub. 014, p. 4)

NZ's lagging productivity is not about having enough smart ideas, it is about being able to harness those ideas to build and run successful companies. And that takes both capital and managerial know-how (both in standard best practices and new process innovation). (Professor Tava Olsen, sub. 018, p. 1)

## 3.2 Lack of awareness is an impediment

Several explanations were posited for this shortcoming in management capability, including weak domestic competitive pressures to spur firms to improve and a lack of awareness about the scope for doing better (subs. 001, 018, 021).

A crucial piece of the puzzle in our opinion is a lack of awareness within New Zealand firms of the significant impact that improved management practices can have on productivity improvements. This lack of awareness is present in all levels of the firm including at board level. (Productivity People Ltd, sub. 021, p. 1)

Relatedly, Kirsty Reynolds and Anton Douglas said that non-frontier firms lack the "talent to know what to do" (sub. 025, p. 6).

## 3.3 Ways to lift management awareness and capability

Reynolds and Douglas, along with Mark Fuller (sub. 026) floated the idea of awareness raising initiatives such as a programme like Country Calendar, for showcasing the activities of frontier firms and providing role models to non-frontier firms (subs. 025, 026).

Country Calendar is an example of a programme which is contributing to the diffusion of ideas relating to regenerative agriculture organics while both moving and celebrating the primary industry's move towards more sustainable farming practices. A programme like [Country Calendar], that is focussed on diffusing the learnings from Frontier Firms in other sectors such as F&B [food and beverage] to High-Tech Manufacturing, could inspire people to choose careers and develop international businesses through role modelling. (Kirsty Reynolds and Anton Douglas, sub. 025, p. 6)

Another suggestion was to develop an inventory or shared repository of research undertaken (subs. 011, 025).

Having a shared repository... and a "Rapid Reports" type dissemination channel could ensure research outcomes are made available in an accessible way to the practitioner community. (Stephen G. MacDonell, sub. 011, p. 5)

Others reinforced the need to upskill managers and leaders, eg, through training programmes, ongoing professional education requirements, or standard assessment tools (subs. 002, 009, 018). Two submitters pointed to flexible governance models, as a way of supporting managers.

Need to use the advisory board structure to bring people with specific skills into the business for short periods of time to work on specific projects, without lumbering them with the restructure compliance of a traditional board structure. (Kirsty Reynolds and Anton Douglas, sub. 025, p. 6)

[F]lexible governance to enable best use of directors with relevant high management experience)... Under this regime the roles of directors and managers have greater freedom to contribute to each other's domain. In particular it provides the opportunity for directors, who are themselves very experienced managers, to assist management where they can. (The Icehouse, sub. 014, pp. 3, 6)

Having the right information is also essential to lifting firm-level productivity, as productivity must be measured before it can be managed (subs. 002, 021).

All businesses should know how efficient they are... if you asked me to recommend one essential ingredient to improving a manufacturing firm's productivity, I would say put in place a standard cost accounting system... [I learnt that] the value of this approach was not just to enable senior executives to interrogate their business, but it enabled all operational managers to get monthly reports on the productivity of their operations. (John Turner, sub. 002, pp. 12-14)

## 4 The role of skills

### 4.1 Raising skills is critical for productivity

Several submitters suggested that improving workforce education and skills could help lift productivity by growing the pipeline of talent (subs. 001, 006, 009, 011, 016, 024, 033). This includes raising basic literacy and numeracy, as well as improving the quality and matching of employee skills to industry needs. John Turner also highlighted the value of cross-disciplinary skills, acquired either by working in different roles within a firm, or through broader fields of study (sub. 002).

### 4.2 Post-graduate study is important for driving innovation

Several submitters emphasised the value of post-graduate study, in fostering the research expertise needed to drive innovation.

The value of post graduate study is seldom recognised by those that have not experienced it. Exposure to the research arm of universities not only creates an awareness of the importance and value of research but also provides a network of high-level university staff and colleagues that will remain with the graduate for their entire career and can provide ongoing dividends. (John Turner, sub. 002, p. 5)

Top academic researchers can contribute to both basic public good research and also have industry impacts. For example, Professor Bob Elliot played a key role in the science underpinning a2 milk and its subsequent commercial success, as well as making fundamental and high health impact advances in medical research. (Tertiary Education Commission (TEC), sub. 009, p. 2)

They also highlighted the importance of supporting researcher career pathways (eg, through work-integrated learning) (subs. 009, 016, 024).

Three-year doctoral programmes are not enough in most disciplines and are not the norm in the most productive countries with whom we wish to compete. Government could consider funding an extra year specifying that this is used for programmes to build in experiential and transferable skills components to prepare industry ready graduates. The inclusion of a commercialisation internship could incentivise industry to co-fund a PhD graduate to spend 6 months working on the commercialisation of an idea in collaboration with an industry partner (The University of Auckland, sub. 016, p. 6)

One of several options to consider is Universities New Zealand ((UNZ's) proposal for a new type of government-funded "end user PhD" to address real-world end-user problems. Such doctorate research could deliver graduates with practical industry knowledge and connections, and would foster deeper linkages between universities, frontier firms and other users. (TEC, sub. 009, p. 3)



### 4.3 Workers need ongoing training and development

Some submitters said that firms need to commit to providing ongoing staff training and development (subs. 001, 007, 025). Jonathan Mason (sub. 007) made the point that firms should not simply go into the market to buy skills “off the shelf”, but also invest in people with the ambition and potential to grow their skills within the firm.

[The] discourse around talent acquisition in Business in NZ... seems to be dominated at present by the notion of the supply of, and demand for, skills, rather than of the hiring and development of employees based upon their potential... What makes this so striking is that I am yet to come across a successful global business which subscribes to this “skills market” view of talent... An [alternative] approach based on hiring for potential... and then continuously developing that potential, generally means the organisation has skills when it needs them, or can rapidly re-skill the necessary employees. (sub. 007, p.1)

### 4.4 Need to improve connections between tertiary education and industry

Several submitters commented on the need to improve connections, collaborations, and skills and technology transfer between tertiary education and industry (subs. 006, 009, 016). In particular, university courses need to be better aligned with industry needs.

[A] benefit of closer university-industry collaboration is enhanced labour market relevance of university programmes, as it offers opportunities for industry to feed in to curriculum design and work-integrated learning, ensuring that graduates are work and innovation ready and have the right balance between technical and soft skills mirroring the requirements of industry. However, New Zealand’s level of university-industry collaboration lags well behind other small advanced economies (The University of Auckland, sub. 016, p. 3)

We need a closer linkage between workforce needs and tertiary training – so that people train with the correct skills for the job market. (Mike Styles, sub. 006, p. 4)

If university research and associated higher skills development is to lift productivity in New Zealand there needs to be more focus on technological and industry development. It must be funded at the scale and with the stability to build outwards-facing university capabilities that pathway from science to technology and deliver impacts in and through frontier firms. (TEC, sub. 009, p. 3)

### 4.5 Key diffusion mechanisms

Skilled workers can not only help stimulate innovation within firms, they are also an important way in which new ideas, practices and technologies are diffused from frontier firms to other firms in the economy (subs. 009, 014, 016, 025).

The movement of people across companies is one of the best ways to diffuse ideas, business practices and technology.... When an employee moves from one company to another, they have to adapt and work with the new business’s practices, including systems, however they may spot inefficiencies and see opportunities for improvement. If the management is open to contributions, then there will be an opportunity for diffusion. (Kirsty Reynolds and Anton Douglas, sub. 025, p. 3)

Firms’ employment or internship of post-graduate students, and flows of post-grads into start-ups, are particularly important for both diffusion and absorptive capacity.

The flows of human capital from university to industry and other organisations is often considered one of the most important channels of knowledge and technology transfer... Research shows that research-based education is linked to growth through innovation at both the firm and macro level, with university-trained employees enhancing absorptive capacity... [However] our graduates have lower degree levels, on average, than graduates in other small advanced countries... Thus, the quality and absorptive capacity of human capital in New Zealand is likely less (The University of Auckland, sub. 016, pp. 3-4)

Informal networks were the second most commonly mentioned mode of diffusion (subs. 011, 021, 024, 025). Other methods of diffusion included collaboration between universities and firms (sub. 016), well-connected entrepreneurial individuals (sub. 024) and foreign direct investment (sub. 029). ExportNZ commented that

[t]he relative lack of large local firms and multinationals limits our best people the opportunity to develop the kind of business skills that would allow greater diffusion amongst firms. (sub. 029, p. 7)

## 5 The nexus between worker wellbeing and productivity

### 5.1 Firms should value and support their workers

Submitters highlighted the importance of valuing staff for increasing firm productivity, including through supportive and empathetic leadership (subs. 001, 013, 025); and better pay and conditions (subs. 001, 025, 026).

While a certain level of income is essential to workers they make a bigger effort if they feel valued, are treated as contributors to the business, are listened to in regard to how things are done, and generally feel they are genuine participants in the firm. (Kevin Sampson, sub. 001, p. 6)

New Zealand's leadership and managerial capability requires addressing wellbeing in the workplace; workplace culture and new ways of leading people.... It is clear that more effective, empathetic leadership can materially improve productivity. (Xero, sub. 013, pp. 3-4)

Some submitters also pointed to the positive correlation between employee health and safety, and productivity (subs. 013, 025, 030). The Business Leaders' Health & Safety Forum explained that the organisational factors which support improvements in workplace safety also foster productivity.

Our experience is that there is a correlation between a business that is engaged in the health, safety and wellbeing of its workers, and productivity... [H]ealth and safety is a proxy for organisational performance – namely it is a function of leadership, management capability, organisational culture (ie, trust and resilience), workforce capability, technology and operational plant within the business. Similarly, productivity is a function of those same elements. (sub. 030, pp. 1-2)

### 5.2 Increase wages

Two submitters suggested raising the minimum wage, to improve the incentives on firms to improve their productivity (subs. 001, 026).

Inefficient firms that are trading around the margins based on keeping labour costs low, will be forced to innovate and transform or die. (Mark Fuller, sub. 026, p. 7)

The Manufacturing Alliance (sub. 033) and Kevin Sampson (sub. 001) also pointed to the reliance on cheap labour in some industries as inhibiting productivity growth.

Increasing salaries and wages and profits, through better economic performance by the owners of capital and by labour is what it is all about... to improve overall productivity policies need to be established that do not allow scope for existing industries to expand on the basis of low productivity supported by the import of cheap labour. (Kevin Sampson, sub. 001, pp. 3-5).

## 6 Supporting a culture of innovation

### 6.1 Frontier firms are continually innovating

Another important driver of productivity raised by submitters was a culture of innovation (subs. 002, 014, 024, 026). Submitters said that frontier firms value research and are continually innovating (subs. 011, 024, 025, 031). They also have ambition to grow, and to be globally competitive (subs. 014, 024, 025).

A culture of innovation combined with an aspiration to be globally competitive. These are essential if companies are to go the extra mile. (The MacDiarmid Institute, sub. 024, p. 7)

Frontier firms are ambitious and see themselves as global citizens providing solutions to clients domestically and internationally... They have established systems and processes that not only foster continuous improvement but encourage innovation. (Kirsty Reynolds and Anton Douglas, sub. 025), pp. 1-2)

They have longer horizons and they value both research and innovation. They avoid change saturation and disruption fatigue by applying innovation-consolidation cycles. They are not too busy to improve. (Stephen G. MacDonell, sub. 011, p. 3)

Frontier firms also have entrepreneurial mindsets and approaches to risk-taking (subs. 002, 009, 016, 024).

Three submitters highlighted the importance of embracing modern technology for increasing firm productivity (subs. 006, 013, 030). The Business Leaders' Health and Safety Forum noted that investment in and effective deployment of modern technologies is also fundamental to improving workplace health and safety (sub. 030).

### 6.2 Biases in government funding for innovation and R&D

Submitters raised concerns with the way research and development (R&D) and innovation funding is allocated (subs. 010, 011, 014, 016, 018, 023, 029). This includes the overly science focus of research funding and related policies, and the eligibility criteria for the R&D tax credit. Specific concerns were that government funding was biased towards scientific basic research, and against engineering, the development side of R&D, commercialisation, management research and the creative sector, and business-focused innovation.

The feedback we get from the larger firms on the RSI [research, science and innovation] ecosystem is that there is too much emphasis on research and not enough on development. The New Zealand taxpayer invests a lot on the R&D system, but much of it is at the blue-sky end of the investment spectrum. (ExportNZ sub. 029, p. 9)

Generally, there is insufficient support for business-focussed innovation in NZ versus R&D. The commercialisation and global expansion of businesses, the iterative and collaborative improvements to basic research to make them marketable products. (The Icehouse, sub. 014, p. 2)

The University of Auckland and Professor Tava Olsen called for reviews of current funding models (subs. 016, 018). And the Manufacturing Alliance argued for improved incentives for investment in green technologies eg, through accelerated depreciation (sub. 033).

### 6.3 Research institutions disconnected from industry needs

The University of Auckland highlighted the value of close collaboration between universities and industry.

By engaging with industry, universities gain a more nuanced understanding of real-world problems and pathways to application of research, thereby ensuring maximum relevance and impact. Close links also aid quicker and more effective diffusion of new ideas and encourage a

start-up culture within the University that can generate new industries. Industries benefit from access to the latest developments, cutting-edge research and talent leading to significant improvements in products and services. (The University of Auckland, sub. 016, pp. 2-3)

However they were also among the submitters who commented that universities and other research institutions are not well connected to industry needs, and/or that universities are hard to work with and too slow to deliver (subs. 016, 025, 029).

Both ExportNZ and the TEC identified underlying problems with the incentives set by the way universities are funded. Specifically, they said that the performance-based research fund (PBRF) is driven by peer review/citation incentives and is too academically-focused.

[B]usinesses can find working with academics difficult because their primary motivations are teaching and publishing, so working with industry cannot always be done promptly. Academics are not incentivised or rewarded for working with businesses and it is not easy for them to move jobs between academia and industry very easily... Institutional research can also be commercially irrelevant if not well informed by consumer needs (ExportNZ, sub. 029, pp. 9, 11)

Since its inception in 2002 the PBRF has evolved, and it works well as a capability fund and to support university research excellence. However, it is academically-oriented rather than technologically and commercially focused. There is concern internationally about the stagnating productivity and poor outcomes from much basic research driven by peer review and citation-driven outcomes. (TEC, sub. 009, p. 2)

TEC cited the US DARPA<sup>2</sup> funding model as an alternative approach that is more focused on technology creation, and can move between basic and applied research as needed.

## 6.4 Thinking broadly about innovation

Some submitters expressed concerns that the Commission's empirical analysis might not adequately capture the nature of digital technology, due to the limitations of the traditional industry categories used in official statistics (subs. 011 and 023).

The codes in ANZSIC and ANZSOC are not representative of many of our sector's industries and occupations. The more digital a creative industry, the less likely it is that either the industry or the business and people working in it will be accurately captured and counted... Equally, we are cautious of data used in relation to New Zealand's exports". (WeCreate, sub. 023, p. 2)

The MacDiarmid Institute asked the Commission to consider the ways in which different types of innovation influence productivity (eg, product vs process innovation), and to emphasise the characteristics of knowledge-based innovation (sub. 024).

We encourage further thinking about the different types of links between innovation and productivity growth, for example... [d]eep tech innovations provide stronger, longer-term competitive advantages alongside benefits such as increased economic complexity and knowledge intensity. (sub. 024, pp. 2-3)

## 6.5 Ways of thinking about frontier firms

The Issues paper indicated that, while a narrow definition is necessary for empirical international comparisons, the Commission is taking a broad and pragmatic approach to thinking about frontier firms. This includes looking at different measures of performance and various lists of top companies.

Submitters raised a number of alternative ways of thinking about frontier firms, including:

- firms leading on sustainable social or environmental practices (subs. 008, 025)

<sup>2</sup> Defense Advanced Research Projects Agency.

- portfolio companies of venture capitalists (sub. 014);
- TechNZ members (sub. 014);
- Technology Investment Network reports (sub. 024);
- recipients of support from incubators, KiwiNet, Callaghan Innovation and other institutions (sub. 024);
- winners and finalists of awards such as the Hi-Tech Awards and those organised by ExportNZ (sub. 014); and
- publicly listed firms with a top 10% productivity rating (sub. 022).

Two submitters were also keen that the Commission's approach captures nascent or future frontier firms.

What is the point in increasing productivity of today's leading firm/s if they're a "Kodak" and the world is changing around them? (Chris Boxall, sub. 004, p. 1)

## 7 Challenges with expanding overseas

Several submitters described the challenges facing New Zealand firms trying to expand overseas. Four submitters raised the problem of trade barriers (tariff and non-tariff) (subs. 028, 029, 031, 033). Other challenges include small scale (subs. 025, 029) and distance from markets (subs. 014, 029).

However, Kevin Sampson suggested the causality of distance works the other way:

Geographic isolation is not the reason for low productivity but low general productivity means most firms are not productive enough to overcome physical isolation. (sub. 001, p1).

Submitters described the types of international connections that can make the biggest difference for firms' productivity:

- "smart money" – ie, investors with the right connections (subs. 014, 024), including external direct investment (sub. 025);
- experienced talent from overseas (subs. 014, 024);
- dedicated "boots on the ground" in overseas markets (subs. 002, 025); and
- customer/partner connections (subs. 014).

Kirsty Reynolds and Anton Douglas pointed to the scope for greater collaboration amongst New Zealand firms, to assist them in expanding offshore (subs. 025).

We need to foster a culture of collaboration between our NZ firms that are exporting, to share resources, reduce barriers and costs to entry. (Kirsty Reynolds and Anton Douglas, sub. 025, p. 5)

## 8 Māori frontier firms

### 8.1 Features of Māori frontier firms

Submitters identified a range of features that distinguish Māori frontier firms:

- values-led/clarity of purpose (sub. 011);
- a focus on sustainability (sub. 024); and
- long time horizons/stewardship (sub. 011).

Stephen G. MacDonell submitted that “Māori frontier enterprises are values-led and have clarity of purpose. They are also very far-sighted, concerned with stewardship more than ownership” (sub. 011, p. 4).

The MacDiarmid Institute commented that Māori firms may find internationalisation less challenging than non-Māori firms “as the idea of national borders is not so constraining, and there are strong and direct connections with first-nations peoples elsewhere (sub. 024, p. 14). They also noted “a current enthusiasm among deep tech investors for distinctive offerings from the Māori economy” (p. 15).

## 8.2 Ways to better support Māori firms

The MacDiarmid Institute made suggestions for mitigating barriers for Māori firms, including: clarity around intellectual property (IP) (noting that the outcomes of the Wai 262 report<sup>3</sup> will have a significant impact on Māori innovation); providing dedicated R&D funds; and improving the cultural competence of non-Māori research staff in CRIs and universities.

The Institute described the value of Māori clusters in supporting diffusion amongst Māori firms.

We have found umbrella or sector clusters to be very effective for driving innovation within the Māori economy. Examples include Nuku ki te puku, Wakatū, FOMA Innovation, and Poutama Trust. These groups are likely to support activities recognized as “Innovative and entrepreneurial”, to have an outlook dominated by international market, and to enhance knowledge diffusion and promotion of people and ideas. (sub. 024, p. 15)

In terms of diffusion from Māori to non-Māori firms, the Institute said

[d]iffusion to non-Māori firms is more difficult but could be improved by sharing values-led success stories from the Māori economy, by increasing diversity on Boards, and by explicit inclusion of Māori when building innovation clusters. (sub. 024, p. 16)

Two submitters said that Māori firms can find the science and innovation system difficult to engage with or hard to navigate (subs. 011, 024). To assist Māori firms in this regard, Stephen G. MacDonell suggested “trusted brokers to bring partners together, to build partnerships and co-design research and innovation programmes” (sub. 011, p. 5).

# 9 Support for a clusters-based approach

Several submitters commented specifically on the paper by David Skilling commissioned for the inquiry – *Frontier firms: A small advanced economy perspective*. In his paper, Skilling advocates for a concerted focus on internationally-oriented sectorial clusters, to materially lift New Zealand’s productivity performance.

Submitters spoke in various ways about the merits of a clusters-based approach to firm and industry development (subs. 012, 019, 020, 023, 024, 025, 029).

There is already extensive evidence going back three decades to Porter’s work, on the link between strong clusters and productivity, and with internationalisation. The evidence particularly confirms that strong clusters provide a nurturing ecosystem for start-ups, and more importantly help ground scale-ups within the region [which become] tomorrow’s Frontier Firms... What NZ is short of is... proactive cluster development as a deliberate, long-term intervention to upgrade competitiveness. (Cluster Navigators, sub. 020, pp. 2, 4)

There should be an emphasis on fostering more New Zealand clusters and promoting them domestically and internationally. Small advanced economies that do clusters well... tend to have a deliberate economic policy of facilitating cluster development and putting resources behind them. (ExportNZ, sub. 029, p. 5)

<sup>3</sup> The Wai 262 claim considered issues of Māori IP rights around indigenous flora and fauna, and associated cultural and customary heritage rights in relation to these taonga. The laws, policies and practices relating to these rights are being considered as part of a whole-of-government response.

Clusters might not be based on a vertical industry/sector, but could span several sectors/share skills and inputs, or involve a cross-cutting technology platform (such as the Xero ecosystem). Stephen G. MacDonell submitted that a sector-only view would be too narrow:

Seeing and supporting innovation through a sector lens can be useful in terms of enhancing focus, and delivering a shared (and therefore commonly understood) context; however, it can also mean that innovation efforts and outcomes are siloed and not shared across sectors. New digital technologies and tools that are useful in one sector may well be useful in others, so mechanisms to enhance shared learning within and across sectors are necessary. (Stephen G. MacDonell, sub. 011, p 2)

Submitters thought such support would need to be provided at scale and be industry-led. Cluster Navigators advocated for

[f]acilitating regional ecosystems that accelerate the development of frontier firms... through a clear commitment to cluster development and adequately resourcing regions to engage around their strengths. (sub. 020, p. 8)

Based on international best practice, Tony Caughey and Cluster Navigators recommended a competitive bidding process to help identify and build the focus areas of the clusters (ie, the source of competitive advantage to be fostered) (subs. 019, 020).

## Appendix A List of submitters

Formal written submissions are published on the Commission's [website](#), unless requested otherwise by the submitter. The following table lists the published submissions.

**Table A.1 List of submitters**

Number	Submission name	Number	Submission name
001	Kevin Sampson	018	Professor Tava Olsen
002	John Turner	019	Tony Caughey
003	Unpublished	020	Cluster Navigators
004	Chris Boxall	021	Productivity People Ltd.
005	Kevin Yiwei Huang	022	NZX
006	Mike Styles	023	We Create Inc.
007	Jonathan Mason	024	The MacDiarmid Institute for Advanced Materials and Nanotechnology
008	Ministry for Business, Innovation and Employment	025	Kirsty Reynolds and Anton Douglas
009	Tertiary Education Commission	026	Mark Fuller
010	HYDRA Software Ltd.	027	NZ Air Line Pilots' Association
011	Stephen G. MacDonell	028	NZ International Business Forum
012	Doug Galwey	029	ExportNZ
013	Xero	030	Business Leaders' Health & Safety Forum
014	The Icehouse	031	Chartered Accountants Australia and NZ
015	Rosebank Business Association	032	Unpublished
016	The University of Auckland	033	Manufacturing Alliance
017	Ian Lockie		