



Submission for the NZ Productivity Commission on Frontier Firms

The need for NZ frontier firms to manage relations with their innovative supply base.

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Dear Madam / Sir,

It is with great interest that we have studied the Commissions draft report with findings and recommendations on frontier firms. We like to add that procurement and supply chain management in frontier firms are a key for their success. This needs changes in their business processes and supplier business models. Procurement is more than securing goods or services at a good price/quality ratio. This business function also creates and leverages value from supply chains. However, we lack a set of validated procurement best-practices & easy-to-use tools to assist frontier firms.

Current focus on customers & markets

It is our understanding that entrepreneurial companies, and probably also frontier firms, often focus on their customers and markets and less on aligning or creating capacities (operations) or capabilities (innovations) with their upstream supply chains. This is for example demonstrated by the popular Business Model Canvas (BMC) handbook by Osterwalder & Pigneur (2010). This handbook and their Strategyzer website spend time and effort on defining customer value propositions towards their customer segments. At the same time, their handbook only spends 2 pages on working with key partners. In a supply chain perspective, such suppliers would also try to align a value proposition with customers. The BMC model does not accommodate such perspective and fails to create

Supply chains create value

However, there is solid research (as e.g. summarized by McKinsey (2020) and Johnson n.a.a (2019)) that shows that most of the customer value is not created within focal companies but in their supply chains or ecosystems / networks. Traditional industries are often dominated by suppliers (Pavitt, 1981; Som 2013; Zabala, 2012). The Boston Consultancy Group (Vollmer, 2021) found that 65% of

innovations are acquired externally. Successful companies leverage the capabilities of their suppliers or partners. However, critical and often innovative suppliers have the luxurious position to select their customers (Schiele, 2010; Schiele ea, 2012). This is contrary to the common opinion, that companies can leverage their procurement power toward their supply base. Early or good supplier selection and involvement is critical (Wynstra, 2000; Van Echtelt, 2004; Le Dain ea, 2020).

Some NZ supply chain research (Basnet ea, 2003; Bohme ea, 2014; Childerhouse ea, 2011) indicate that NZ SMEs lack procurement and supply management skills, and have a lower maturity on procurement and supply chain integration than SMEs in other countries (Thailand, UK). Although we have no hard quantitative data available, this also seems the case with innovation procurement and sustainable procurement in NZ.

Very limited knowledge on procurement in SMEs

There is a raft of robust procurement research and best- practices available for large public and private organisations. CIPS and universities in NZ and elsewhere teach such best-practices to professionals. Their procurement experience is mostly based on operations management, instead of combining that with entrepreneurship (Giunipero ea, 2005; Trehan, 2019; Neessen, 2020) or innovation management (Picaud ea, 2015, Calvi ea, 2011; Michelsen & Johnsen, 2012). Additionally, such procurement professionals often seem to focus more on management than on *leadership*, and would have difficulties in stimulating growth in frontier firms.

A small business is not a little big business (Welsh & White, 1981). We know much about procurement in large organisations. However, we do not know much about procurement in SMEs (EU definition: < 250 staff). Research indicates that SME procurement is different (Ramsay, 2008; Ellegaard, 2006, 2009; Morrissey & Knight, 2011; James ea, 2011, 2012; Paik 2009, 2011; Adams, 2016). Similarly, our knowledge on inbound (open) innovation in SMEs is limited (Spithoven ea 2013; Inauen & Schenker. 2012; Som ea, 2013; Brunswicker& Vanhaverbeke, 2015).

Most of this research focuses on operations management or at best on incremental innovations, and not so much on radical performance improvements with suppliers in growth-oriented companies.

Management tools and models help SMEs

Management tools with codified best-practices are useful instruments to discuss, assess and improve procurement and hence procurement performance (Tontini ea, 2016; Schiele 2007). There is some literature on developing tools for SMEs, but again only limited research on SME innovation tools (for NZ: De Waal, 2011), or procurement or supplier management tools (Le Dain ea. 2008, Staal ea. 2016, for NZ: Bohme ea 2014). We also know that SMEs will benefit from using tools, provided they are contextualised and made fit-for-purpose.

However:

We lack a set of validated procurement best-practices & easy-to-use tools to assist frontier firms. That is why four senior researchers (Victoria University Wellington, Hanze University from the Netherlands, and Auckland University of Technology) plan a research project geared to developing such tools. We have applied for funding via the MBIE Endeavour Programme.

The tools help SMEs in their innovation and their sustainable procurement. Frontier firms are relevant for NZ, and therefore part of our project focuses on developing procurement tools for such companies. We plan to develop a maturity assessment tool that helps frontier firms in assessing and improving their procurement strengths and weaknesses when managing innovative suppliers.

Firms and NZ will benefit from the outcomes of our research. At the same time, we know that MBIE Endeavour funding is highly competitive. We are confident we can realise the project outcomes but are also modest in our hopes of obtaining funding via that route. Therefore we also pursue other avenues.

Please find the attached Appendix with our remarks related to your Questions, Findings and Recommendations. Via this [link](#) you can find more information on our research project.

We would appreciate the Commission's opinion on our submission, and welcome your feedback or suggestions on our research project.

On behalf of all four researchers,

sincerely yours,

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My research focuses on value chains, more specifically on innovation and sustainable procurement in SMEs.



Appendix with Submission for the NZ Productivity Commission on Frontier Firms
The need for NZ frontier firms to manage relations with their innovative supply base.

This appendix provides remarks on the Report’s questions, findings and recommendation.

[Due to time constraints we only added a limited number of sources. We can provide a list of references.]

<p>Q4.1</p>	<p>Yes.</p> <p>European procurement research indicates that public procurement can stimulate innovation and entrepreneurial success with start-ups (Uyarra ea 2020), and also with small (Flynn ea 2018) or indigenous suppliers. The same would hold true for Māori Frontier Firms. This would need adequate processes, best-practices and preferably also clear policy rules and some additional regulation. It would probably need 3 – 5 year (!) programmes to create stability and results in the contracting organisations and also in the supply market. It would need some training and upskilling in the public procurement organisation.</p> <p>The contracting authority should formulate its Request for Proposal in such a way that this document describes ambitions or at least functional specifications, instead of specific technical solutions.</p> <p>An early market consultation can also help to ‘test the water’ with potential suppliers, and can create opportunities for Māori firms to learn more about the authority’s organisation, their issues, problems, plans, objectives and ambitions, budgets (!), and timelines.</p> <p>Internationally, several <i>Start-up in Residence</i> public procurement programmes (e.g. in Toronto, 2019) seem to be successful. However the tendering authority should avoid ‘pampering’ such suppliers, stimulate a level of competition, and agree on clear processes and commercial terms, for procurement pilots and (subsequent) more substantial procurement. Intellectual property and possibilities of follow-up contracts need to be discussed upfront.</p> <p>The current NZ Public Procurement Rules (4th Ed, 2019) give some guidelines, but may need amendment. Possibly, Auckland Council has some good case-studies on (co-)creating innovative solutions and experimenting with novel (brief & simple) procurement processes.</p> <p>Bidding on potential public procurement contracts differs from negotiating and contracting with potential private customers. Māori frontier firms may benefit from upfront training, online best-practices & processes and also coaching.</p>
<p>Q5.1</p>	<p>Additional remark.</p> <p>Several countries / regions have active policies on attracting MNCs, sometimes with mixed results. MNC can be ‘footloose’ and it may not only need a substantial welcome package, but also good negotiation skills of regional councils. What such MNCs may miss in NZ is an ecosystem of trusted suppliers/companies (on capacity) and of high-tech or knowledge-intensive companies (on capabilities) they are can cooperate with.</p> <p>When trying to convince a MNC to establish a subsidiary in NZ, the local bid team should assess the potential of creating or improving such ecosystems. Alternatively, the local team can assess existing eco systems / clusters, and then try to attract an MNC (or more likely smaller overseas companies) that would create synergy with existing NZ eco-systems.</p> <p>Although MNCs will keep using global supply chains, several European regions have been successful in creating complex regional ecosystems with knowledge-intensive companies. For example, the technology cluster near Eindhoven, which was deliberately but slowly established from several Philips carveouts. This cluster has several hundred smaller and specialised suppliers</p>

	in the same region. Their triple helix approach seems to work well.
Q7.1	Additional remark. Attract leaders in procurement and supply chain management with entrepreneurial skills (Giunipero et al., 2005; Trehan, 2019; Neessen, 2020) and who are experienced in managing uncertainty & risk, growth, innovations and technology via the supply base.
F2.2	Some supply chain research (e.g. Bohme, 2014) found that NZ business owners prefer to work independently and do not want to integrate their key processes with other businesses. This body of research also suggests lack of supply chain management skills. In part it can also be a difference in mindset: supply chain people think in processes; SME owners think in (ad hoc) activities and react on opportunities or threats. There is also some debate whether SMEs will always benefit from working in supply chain settings (Arend & Wisner, 2004). When frontier firms want to ramp-up (scale-up) their supply chains, such aspects need to be considered in the partner selection.
F2.4	These points seem valid. Additional remark. Traditionally, the argument was that NZ is a thin and long country with high barriers to efficient logistics. While that may be true on a national scale, the country is also highly urbanised and costs of domestic transport has probably decreased over the past decades. Likewise, costs of container shipping (before COVID19) for exports has been relatively low over the last two – three decades. Additionally, means of internet communication and software (ERP, CRM, Skype, email, etc) have hugely increased over the past two decades. Other countries, for example Sweden, Norway and Finland have a similar geography: long and small population, and also harsh winters. They probably export more innovative goods & services than we do, and not only because their proximity to other European countries. Our geography is indeed <i>not</i> our destiny but does pose certain challenges.
F2.6	Good point; see our remarks with Q5.1
F2.7	Remark 1. One of the aspects of Industry 4.0 and use of new technologies could be that the effects of manufacturing economies-of-scale or unit-costs are decreasing for innovative products. (Innovative services need less economies-of-scale anyway). (See also below with F5.2). NZ frontier firms are probably keener to adopt and adapt innovative technologies than average NZ firms. These inbound (open) innovations need good supplier markets insights, and good sourcing and implementation skills. They need a different perspectives on business models and value chains. Remark 2. Traditionally, some companies sourcing technology scanned patent applications or visited technology or trade fairs. However, research suggests that apps may soon become available to better find & select potential innovative partners. Based on user profiles and key words, such apps will not only browse the internet 24/7, but may use artificial intelligence to refine search results and start interaction with such companies on a long or shortlist. (AUT was involved in research with a start-up that develops such an app for Dutch SMEs).
F2.8	Agree.
F2.9	Agree. Note that frontier firms also need to develop such dynamic capabilities on (1) developing and managing specific supplier eco-systems to drive supplier innovations and collaboration, and (2) on managing ramping-up production capacities in their supply chains. Fraunhofer (2016), KPMG (2016), Accenture (2019) and Choi & Handfield (2019) see key role for digitalisation and new technologies such as additive manufacturing, AI, (e.g. blockchain, negotiation bots) in supply chains. This will lead to transparent pricing (!), shorter cycle times

	<p>and better quality.</p> <p>The roles of B2B sales and procurement professionals change, technology creates new types of procurement consultancy companies, and different supplier business models. The reality however is that most supply chains executives lag in adoption of such digital technologies.</p>
R2.1	<p>Agree.</p> <p>With good metrics on input, output, outcome and impact on a company and macro level</p>
F3.3	<p>Probably both, that NZ frontier firms have slow growth rates, and that NZ non-frontier firms find it easier to catch up.</p> <p>Remark 1.</p> <p>We have no data to support this, but the general NZ SME value proposition could be more geared to operational excellence, instead of product leadership a/o customer intimacy These different value propositions would need different supplier strategies in frontier firms. (Based on Staal, 2019).</p> <p>Remark 2.</p> <p>Some German and Scandinavian research (2016) generally found a shallow uptake of IT in SMEs. Wood ea (2014) and Glass ea (2014) suggest an overall shallow uptake of new technologies in NZ. De Waal (2011) found a low and superficial adoption of NPD tools in NZ high-tech companies. Hence not only the adoption as such, but the application and integration in business could be key.</p>
F3.6	<p>Battisti ea (2010; 189) indicated that innovative micro firms in NZ have less capabilities for growth.</p>
F3.7	<p>Battisti ea (2010; 188) found that innovative NZ SMEs are more likely to export than solely rely on domestic markets. They also found a larger group of innovative SMEs that were not exporting.</p>
F4.10	<p>Common values such as kaitiakitanga, kōtahitanga and whanaungatanga seem to help Māori businesses to thrive. (See F4.7).</p> <p>It would be worth investigating how public procurement would benefit from incorporating such Māori cultural values in their values and daily practices both with Māori frontier suppliers and other frontier suppliers. This such values could support achieving broader outcomes as mentioned in the NZ Public Procurement Rules (4th Ed, 2019).</p>
F5.2	<p>Remark 1.</p> <p>Additional to traditional exporting models that develops physical distribution networks and supply chains, the frontier firm could try and find overseas intermediaries / partners and use B2B e-commerce channels (such as Amazon business) to increase overseas sales.</p> <p>Remark 2.</p> <p>It could be worthwhile to analyse to what extent frontier firms could benefit from flexible lease contracts or products-as-a-service business models instead of traditional investments in plants and machinery. Again, partnering with suppliers could be key to spread risk and costs.</p>
F5.3	<p>(See also Q5.1)</p>
R5.1	
F6.1	<p>Agree.</p>
F6.4	<p>Agree.</p>
F6.5	<p>Indeed, recombining value propositions of existing firms can generate innovations.</p> <p>Supplier innovations may come from other industries or from other supply chains, and can be applied in several downstream industries or supply chains.</p>
