

# SME Technology Spotlight: Capturing G-Readiness and sustainability innovation in NZ's powerhouse

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## ABSTRACT

The Applied Research Project proposes to capture the G-Readiness of NZ SMEs and the uptake of innovation through technology sustainability. It offers a unique perspective into taking an important component of sustainability (technology) and flips it into a real source of innovation and competitive advantage. The literature review details sustainability and IT, also the NZ SME context. Two underpinning theoretical perspectives are identified, Molla et al's G-Readiness Framework and Willard's 5 business stages of organization sustainability adoption. A survey based on the G-Readiness Framework and case study is the primary research method. The 3 month timeline, realistic budget based on open source software and researcher funding, ethical considerations of consent and correct protocol and limitations like a small sample size and amending the G-Readiness framework to suit SMEs are described. This research offers a valuable contribution to the NZ economy and literature around sustainability and technology.

**Keywords:** technology, sustainability, Green IT, innovation, SME

## 1. INTRODUCTION

Businesses and support structures like the government are constantly searching to find a new avenue in which SMEs can increase profit and competitive advantage. Spotlighting sustainability with an IT focus could offer a significant and different way to look at a business that may ultimately result in bigger stable cash flow and an innovation spark. The published findings could indicate what the readiness is on NZ SMEs to incorporate IT sustainability and if it is a viable path for SMEs to follow if wanting to inject a different source of innovation. The aim of this study is to explore how ready the NZ SME powerhouse is to utilize innovation through technology sustainability.

This research is significant as the potential for a collective, more sustainability focused economy, could be proven in the report findings. The potential is big as SMEs make up 97% of NZ businesses ("SMEs crucial for business growth", 2014). Big picture thinking means tapping into a source of innovation through sustainability and could lift the NZ economy as a whole. The findings could offer a gauge to determine how ready companies are to incorporate sustainability into their business practice.

## 2. RESEARCH QUESTIONS

The overarching key question the research seeks to answer is; "How ready is the New Zealand (NZ) Small-to-medium size enterprise (SME) powerhouse to utilize innovation through technology sustainability?"

This question can be split into two sub questions which create a framework in which this research will be based on:

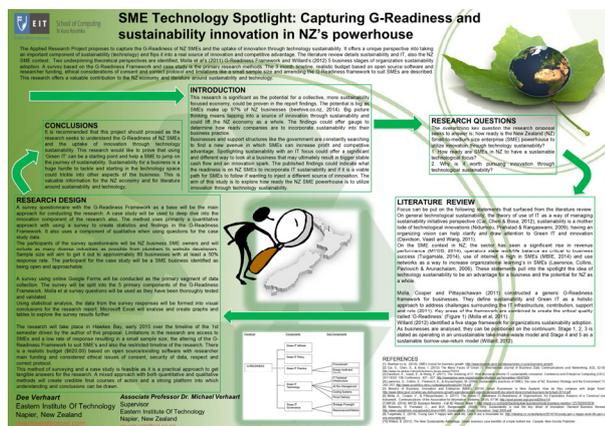
1. How ready are SMEs in NZ to have a sustainable technological focus?
2. Why is it worth pursuing innovation through technological sustainability?

## 2. LITERATURE REVIEW

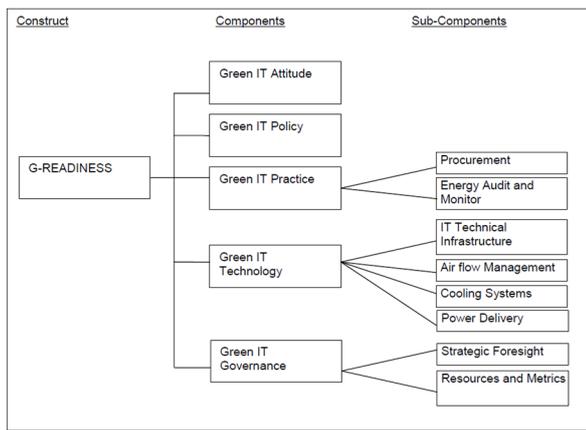
Focus can be put on the following statements that surfaced from the literature review. On general technological sustainability; the theory of use of IT as a way of managing sustainability initiatives perspective (Cai, Chen & Bose, 2012), sustainability is a mother lode of technological innovations (Nidumolu, Prahalad & Rangaswami, 2009), having an organizing vision can help clarify and draw attention to Green IT and innovation (Davidson, Vaast & Wang, 2011).

On the SME context in NZ; the sector has seen a significant rise in revenue performance (MYOB, 2014), operators state work/life balance as critical to business success (Tuigamala, 2014), use of internet is high in SMEs (MBIE, 2014) and use networks as a way to increase organizational learning's in SMEs (Lawrence, Collins, Pavlovich & Arunachalam, 2006). These statements put into the spotlight the idea of technology sustainability to be an advantage for a business and the potential for NZ as a whole.

Molla, Cooper and Pittayachawan (2011) constructed a generic G-Readiness framework for businesses. They define sustainability and Green IT as a holistic approach to address challenges surrounding the IT infrastructure, contribution, support and role. The authors state the importance of having a G-Readiness framework, as it offers a way to succeed in the low carbon green economy. Key areas of the framework are combined to create the critical quality called 'G-Readiness' see Figure 1 (Molla et al., 2011).



This poster appeared at the 6<sup>th</sup> annual conference of Computing and Information Technology Research and Education New Zealand (CITRENZ2015) and the 28<sup>th</sup> Annual Conference of the National Advisory Committee on Computing Qualifications, Queenstown, New Zealand, October 6-9, 2015. Michael Verhaart, Amit Sarkar, Rosemarie Tomlinson and Emre Erturk (Eds).



**Figure 1: The G-Readiness Framework**

Willard (2012) identified a five stage framework for an organizations sustainability adoption. As businesses are analysed, they can be positioned on the continuum. Stage 1, 2, 3 is stated as operating in an unsustainable take-make-waste model and Stage 4 and 5 as a sustainable borrow-use-return model (Willard, 2012). In the early stages, business owners mind-sets label sustainability as, “Expensive and bureaucratic impediments to success,” but then evolve in the later stages to recognize the initiatives as imperative to better competitive advantage (Willard, 2012).

### 3. RESEARCH DESIGN

A survey questionnaire with the G-Readiness Framework as a base will be the main approach for conducting the research. A case study will be used to deep dive into the innovation component of the research also. The method uses primarily a quantitative approach with using a survey to create statistics and findings in the G-Readiness Framework. It also uses a component of qualitative when using questions for the case study data.

The participants of the survey questionnaire will be NZ business SME owners and will include as many diverse industries as possible from plumbers to website developers. Sample size will aim to get it out to approximately 80 businesses with at least a 50% response rate. The participant for the case study will be a SME business identified as being open and approachable.

A survey using online Google Forms will be conducted as the primary segment of data collection. The survey will be split into the 5 primary components of the G-Readiness Framework. Molla, et al. (2011) survey questions will be used as they have been thoroughly tested and validated.

Using statistical analysis, the data from the survey responses will be formed into visual conclusions for the research report. Data collected will be analysed and graphs and tables used to explore the survey results further.

The research will take place in Hawke’s Bay, early 2015 over the timeline of the 1st semester driven by the author of this proposal. Limitations in the research are access to SMEs and a possible low rate of response resulting in a small sample size, the altering of the G-Readiness Framework to suit SME’s and also the restricted timeline of the research. There is a realistic budget (\$620.00) based on open source/existing software with researcher main funding and considered ethical issues of consent, security of data, respect and correct protocol.

This method of surveying and a case study is feasible as it is a practical approach to get tangible answers for the research. A

mixed approach with both quantitative and qualitative methods will create credible final courses of action and a strong platform into which understanding and conclusions can be drawn.

### 4. CONCLUSIONS

It is recommended that this project should proceed as the research seeks to understand the G-Readiness of NZ SMEs and the uptake of innovation through technology sustainability. This research would like to prove that using ‘Green IT’ can be a starting point and help a SME to jump on the journey of sustainability. Sustainability for a business is a huge hurdle to tackle and starting in the technology space could trickle into other aspects of the business. This is valuable information for the NZ economy and for literature around sustainability and technology.

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