E-business adoption in micro business in NSW, Australia: does the government tick the right boxes? A qualitative multiple case study

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E-Business Adoption in Micro Business in NSW, Australia: Does the Government Tick the Right Boxes?  
A Qualitative Multiple Case Study
Declaration of Originality

I certify that the work presented in this thesis is, to the best of my knowledge and belief, original, except as acknowledged in the text, and that the material has not been submitted, either in whole or in part, for a degree at this or any other university.

I acknowledge that I have read and understood the University's rules, requirements, procedures and policy relating to my higher degree research award and to my thesis. I certify that I have complied with the rules, requirements, procedures and policy of the University (as they may be from time to time).

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[Candidate's signature]

Kevin Tran
ACKNOWLEDGEMENT

It has been an extremely long journey for me to complete this thesis. As people say, when you drive on a long journey, your mental concentration will wane after a long period of time. I have encountered many false start and many personal problems, I almost thought that I would give up. For me personally, education is a journey; not a destination. But after a long period of time, I had doubts about my journey and wondered if I would reach my destination at all.

I would not have persevered if it had not been for the constant support and guidance from my supervisor Dr. Peter W. Wong. I owe him a deep sense of gratitude, without his support and encouragement I would not have been able to complete this thesis.

This thesis would not be completed without the support of my parents Tam and Ngoc, my wife Tracy and our beloved daughter Victoria. I also thank Craig Wyman who accompanied me to the interviews to ensure that I stayed on course, to Jennifer Mai who worked tirelessly to transcribe the audio tapes to documents and to Daniel Anson who proof read the thesis.

And I stand ready for my next journey in search of new knowledge.
ABSTRACT

This research aims to gain a deeper understanding of the adoption factors behind New South Wales (NSW) micro enterprises owners’ decision to implement e-business and their perception of the government induced factors that may influence them to adopt the technology.

The overarching factors that influence the adoption of e-business are examined through the technology diffusion theory proposed by Rogers (2003), and then further enhanced through the conceptual Technological-Organisation-Environment (TOE) framework developed by Tornatsky and Fleischer (1990). This framework together with the Institutional Theory, Task Technology Fit and User resistance theory were used to study three aspects of business that could influence the adoption of technology: technological, organisational and environmental. The research focused on the external factors of the framework, then identified and examined the internal organisational factors being stimulated by a number of government induced factors through the Government Support e-business model proposed by Jutla, Bodorik, and Dhaliwal (2002).

Five research questions were formulated to help focus the collection of data for this research. Question 1 examined relevant factors that affect the decision of micro businesses to adopt e-business. Question 2 investigated the leadership role of the government’s e-government initiatives. Questions 3 to 5 examined the regulatory framework, financial, human and information and communications technology infrastructure to support micro businesses in adopting e-business.

A multiple single-case studies methodology was used to conduct this research. Eleven micro business entrepreneurs in NSW were interviewed. An interview with a government official was also conducted to verify if the key determining factors of micro businesses were similar to those of the government.

The research confirmed that the perception of benefits of e-business, the industry-type of the business and the IT skill of the owner are significant adopting factors. The research also found that the government is a trusted source for information; however, it
found that government messages in promulgating the benefits of e-business to micro enterprises will need to be industry-specific and easy to understand. Furthermore, the research found that an unsophisticated supply chain remains the most significant barrier to the adoption of e-business. It also showed that there is no significant linkage between the government support services and the rate of adoption in Australia and NSW in particular. The research also found that stages of adoption have an insignificant influence on the adoption of technology.

The research detected a measured support of micro businesses for e-government and a positive relationship between the “perceived industry standards” (Alzougool & Kurnia, 2008, p. 7) by business owners and the intention to adopt e-business. The research also yielded a surprising finding from the interview participants that instead of the government spending funds and expanding effort to help small business, the government should use that funding and effort to address the disconnectedness of government systems, as well as fund and monitor industry peak bodies to define common standards and best practice in their own industry.

As far as human infrastructure was concerned, the research found that skilled resources in IT, vocational and trade sectors are diminishing and the education system is no longer providing training for these skills. The research indicated that the capability of the government’s telecommunications infrastructure and the availability of its information systems have a negligible impact on the adoption of e-business. The research also found that the state government’s activities have a less significant impact on adoption compared to those of the federal government. This finding suggested the need for a stronger emphasis on inter-governmental communication between the State and the Commonwealth government.

The outcome of this research will help fill the knowledge gap needed for future research on the effectiveness or the impact of government induced factors on the adoption of technology. This research can be used as a foundation to conduct future quantitative and qualitative research on a nation-wide basis or abroad, given each jurisdiction may have its own idiosyncratic environment and regulations.
Keywords: e-business, small and medium sized enterprises, micro enterprises, e-government, Australia, NSW, adoption factors.
TABLE OF CONTENTS

LIST OF ABBREVIATIONS ........................................................................................................... 1

1. INTRODUCTION ...................................................................................................................... 2

2. LITERATURE REVIEW ............................................................................................................... 11
   2.1 CHARACTERISTICS OF ENTREPRENEURS OF MICRO ENTERPRISES ............................................. 12
      2.1.1 Composition of an Australian micro business ..................................................................... 12
      2.1.2 Characteristics of micro business entrepreneurs .................................................................. 14
   2.2 E-BUSINESS ........................................................................................................................... 17
   2.3 THEORIES ON ADOPTION OF TECHNOLOGY ......................................................................... 21
      2.3.1 Theory of innovation ......................................................................................................... 23
      2.3.2 Institutional theory ............................................................................................................ 25
      2.3.3 Task-technology fit theory .................................................................................................. 26
      2.3.4 User resistance theory ...................................................................................................... 26
   2.4 FACTORS AFFECTING THE ADOPTION OF TECHNOLOGY .................................................... 27
      2.4.1 Technical-organisation-environment framework .................................................................... 27
      2.4.2 Internet adoption model .................................................................................................... 28
      2.4.3 Perceived benefits ............................................................................................................. 29
      2.4.4 Organisation readiness ........................................................................................................ 31
      2.4.5 External pressures .............................................................................................................. 32
   2.5 AUSTRALIAN GOVERNMENT POLICIES, INITIATIVES AND FUNDING ON E-BUSINESS .............. 36
   2.6 AUSTRALIAN REGULATORY FRAMEWORK AND STANDARDS .................................................. 39
   2.7 GOVERNMENT FACTORS AFFECTING ADOPTION OF E-BUSINESS ....................................... 43
   2.8 E-GOVERNMENT ................................................................................................................... 49
   2.9 MEASUREMENT OF PROGRAM EFFECTIVENESS ..................................................................... 53

3. RESEARCH METHODOLOGY .................................................................................................... 54
   3.1 SELECTION OF THEORETICAL PARADIGM ............................................................................ 54
      3.1.1 Positivism ............................................................................................................................ 55
      3.1.2 Constructivism .................................................................................................................... 56
      3.1.3 Critical Theory .................................................................................................................... 56
      3.1.4 Realism ............................................................................................................................... 57
   3.2 SELECTION OF METHODOLOGY WITHIN THE REALISM PARADIGM ........................................ 57
   3.3 JUSTIFICATION FOR A CASE STUDY METHODOLOGY .............................................................. 59
      3.3.1 Definition of a Case Study .................................................................................................. 59
      3.3.2 Justifications for a Case Study Research ............................................................................ 59
   3.4 CRITERIA FOR JUDGING QUALITY OF CASE STUDY RESEARCH DESIGN .................................. 61
      3.4.1 Construct validity ................................................................................................................. 61
      3.4.2 Internal validity .................................................................................................................... 63
      3.4.3 External validity .................................................................................................................. 63
      3.4.4 Reliability ........................................................................................................................... 64
   3.5 FRAMEWORK FOR CASE STUDY RESEARCH ......................................................................... 65
      3.5.1 Research design for case selection ...................................................................................... 65
      3.5.2 Data collection procedures ................................................................................................ 70
   3.6 ETHICAL ISSUES .................................................................................................................... 73
   3.7 LIMITATIONS OF CASE STUDY RESEARCH ............................................................................ 74
   3.8 DELIMITATIONS OF SCOPE AND KEY ASSUMPTIONS ............................................................ 75

4. FINDINGS AND ANALYSIS ...................................................................................................... 76
   4.1 WHAT ARE THE ADOPTION FACTORS THAT AFFECT THE DECISION OF MICRO ENTERPRISES’
     OWNERS TO ADOPT E-BUSINESS? ........................................................................................... 76
      4.1.1 Time and cost ....................................................................................................................... 77
      4.1.2 Lack of trusted advice ......................................................................................................... 79
      4.1.3 Lack of demand from customers ......................................................................................... 79
4.2 How are Government Support and Services in E-Business Perceived by Micro Business? ................................................................. 81
  4.2.1 Interactions with government .............................................................................. 81
  4.2.2 E-government ........................................................................................................ 89
4.3 To what Degree Does Australian Government’s Regulatory Framework, Trust and Financial Infrastructure Influence Micro Business’ Owners in Adopting E-Business? .... 90
  4.3.1 Regulatory framework ............................................................................................ 90
  4.3.2 Remediation and dispute handling mechanism ................................................. 92
  4.3.3 Policing policies ..................................................................................................... 95
4.4 How Do Australian Government’s Human Infrastructure Programs Foster the Adoption and Sustainability of the E-Business Within Micro Business? ............................... 100
4.5 How do Public Telecommunications and Information Systems Infrastructure Encourage the Investment and Building of IT Infrastructure of Micro Business? .......... 103
4.6 Analysis ....................................................................................................................... 106
5. Conclusion .................................................................................................................... 117
6. Impact ............................................................................................................................ 122
7. References ..................................................................................................................... 126
8. Appendices .................................................................................................................... 146
  8.1 Appendix A – List of Interviewees ............................................................................. 146
  8.2 Appendix B: Information Sheet .............................................................................. 148
  8.3 Appendix C: Interview Guide .................................................................................. 150
  8.4 Appendix D – Analysis of Interviews ..................................................................... 156
  8.5 Appendix E – Consent Form ................................................................................... 166

LIST OF TABLES

Table 1: Count of Australian and NSW Businesses ......................................................... 14
Table 2: Philosophical Assumptions for Alternative Research Paradigms ......................... 54
Table 3: Research Framework ......................................................................................... 65

LIST OF FIGURES

Figure 1: Government induced Factors (Source developed for this research) .................... 8
Figure 2: Literature Research Framework ........................................................................ 11
Figure 3: Three Stages of Research ............................................................................... 67
**LIST OF ABBREVIATIONS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ABS</td>
<td>Australian Bureau of Statistics</td>
</tr>
<tr>
<td>AGIMO</td>
<td>Australian Government Information Management Office</td>
</tr>
<tr>
<td>ASIC</td>
<td>Australian Securities and Investments Commission</td>
</tr>
<tr>
<td>ATO</td>
<td>Australian Taxation Office</td>
</tr>
<tr>
<td>B2B</td>
<td>Business to Business</td>
</tr>
<tr>
<td>B2G</td>
<td>Business to Government</td>
</tr>
<tr>
<td>CRM</td>
<td>Customer Relationship Management</td>
</tr>
<tr>
<td>DIISRRT</td>
<td>Department of Industry, Innovation, Science, Research and Tertiary</td>
</tr>
<tr>
<td>DTI</td>
<td>Department of Trade and Industry (UK)</td>
</tr>
<tr>
<td>DVS</td>
<td>Document Verification Service</td>
</tr>
<tr>
<td>EDI</td>
<td>Electronic Data Interchange</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>HTTP</td>
<td>Hyper Text Transfer Protocol</td>
</tr>
<tr>
<td>HTTPS</td>
<td>Hyper Text Transfer Protocol Secure</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communications Technologies</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>KPI</td>
<td>Key Performance Indicator</td>
</tr>
<tr>
<td>MYOB</td>
<td>Mind Your Own Business (an Australian developed accounting software)</td>
</tr>
<tr>
<td>NBN</td>
<td>National Broadband Network</td>
</tr>
<tr>
<td>NOIE</td>
<td>National Office for the Information Economy</td>
</tr>
<tr>
<td>NSW</td>
<td>New South Wales</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>SME</td>
<td>Small and Medium Enterprises</td>
</tr>
<tr>
<td>SOLX</td>
<td>Online Solutions Exchange</td>
</tr>
<tr>
<td>TAFE</td>
<td>Tertiary and Further Education</td>
</tr>
<tr>
<td>TAM</td>
<td>Technology Acceptance Model</td>
</tr>
<tr>
<td>TPB</td>
<td>Theory of Planned Behaviour</td>
</tr>
<tr>
<td>TOE</td>
<td>Technological - Organisational and Environment</td>
</tr>
<tr>
<td>TPB</td>
<td>Theory of Planned Behaviour</td>
</tr>
<tr>
<td>XML</td>
<td>Extensible Mark-up Language</td>
</tr>
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<td>WWW</td>
<td>World Wide Web</td>
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1. INTRODUCTION

The Internet has progressively become pervasive in all aspects of business and social activities of people around the world. At the end of 2013, according to the Australian Bureau of Statistics (ABS, 2014b) the number of Internet users in Australia grew to 13 million, over 98 per cent of these are broadband connections. The number of household subscribers has increased steadily by two per cent every year to 2.7 million in December 2013. In contrast, the number of government and business subscribers fluctuates at around 9.7 million users (ABS, 2014c).

According to the federal Department of Industry (previously known as Department of Innovation, Science, Research and Tertiary of Education (DIISRT), Australian micro enterprises, businesses with less than five employees (ABS, 2012), currently contribute around 20 per cent of the Gross Domestic Product (GDP) and employ approximately 50 per cent of the private sector workforce (DIISRT, 2012). Micro enterprises represent 85.1 per cent of the total number of Australian businesses and this composition has remained steady since 2009 (DIISRT, 2012), confirming the important role of micro enterprises in the economy.

The number of micro businesses in NSW, the most populous state in Australia, accounted for 33.2 per cent of SMEs in the country (DIISRT, 2012). Significantly, NSW has the highest percentage of micro business in the service industry (33.8 per cent nation-wide), followed by manufacturing (31 per cent) and then agriculture, forestry and fishing (29.9 per cent). The National Bank’s Quarterly SME Review - June Quarter 2014 reported that SMEs in construction, transport and professional services performed better than their counterparts in medium and larger firms (National Bank Australia, 2014).

A typical Australian micro business is characterised by limited number of services or products, limited number of customers, and a relatively low profit margin (Griffith& Wilkinson, 2012). Being small in size, micro businesses can react quickly to changes in market conditions, competition or government policies. However, they have limited physical and financial resources, a lack of technical expertise and organisational
planning, and typically have a high reliance on their business trading partners (Duan, Deng, & Corbitt, 2012). Stockdale and Standing (2006, p. 391) reported that an enterprise responds well to technology adoption if the owner or manager of the firm is perceived as a “technology champion”. The survival rate of these micro businesses was reported at 59.7 per cent (DIISRT, 2012) and this rate is slightly lower than the survival rate of 60.4 per cent of all businesses in Australia, highlighting the intrinsic ad-hoc nature of micro and small enterprises.

Small enterprises are a major source of employment in Australia, and its synergistic physical and knowledge resources power the national economy. The success and survival of micro and small enterprises are paramount to the economic performance of the country (NSW Small Business Commission, 2015). Adoption of technology is seen by a business owner as a way to expand a firm’s customer base, improve profit margins or enhance customer service; and consequently allow the business to remain viable and competitive (Duan et al., 2012; Xu et al., 2007). Furthermore, e-business is regarded as an innovative approach to address the issue of business survivability by extending customer reach or establishing a new market, enhancing productivity and reducing cost for the business. In the context of this research, the NSW government’s definition of e-business was used to refer to business activities that are assisted by the Internet (NSW Small Business Commission, 2015). As Internet technologies develop, various applications have been deployed and utilised by businesses, government agencies and consumers. These applications will be explored and discussed in more detail in Chapter 2.

As the popularity and ubiquity of the Internet grows, the use of the Internet has evolved from simply accessing information on websites and emailing, to running applications online, listening to or downloading music, or even executing financial transactions online. The Internet has become a major conduit for the distribution of data and knowledge across the world and the buying and selling of products and services. These electronic activities are collectively known as e-business. This term was coined by IBM in 1999 to describe “all forms of automated and computer-aided data exchanges carried out within companies and between business partners or electronic networks like the
Web or the Internet” (Unland, 2012, p. 130). E-commerce is a specialised form of e-business where the buying and selling of service and products using Internet technologies is performed (Unland, 2012).

According to the OECD’s Electronic Commerce Policy Brief (2001), e-business is considered a key component in promoting trade between nations of the world, fostering economic growth and creating more jobs. The OECD therefore recognises e-commerce as a vehicle to deliver economy growth and create job opportunities for the global economy. In Australia, e-commerce is considered a means to allow business to close the gap with its competitors (regardless of the business size), expand their market reach and become less independent on the local customer base (DIISRT, 2012). It facilitates trans-border transactions and allows business to be independent of locality and time (DIISRT, 2012).

As the bandwidth of the Internet improves and access to Internet-based applications becomes more widespread, it is expected that businesses will recognise the potential of using the Internet. Subsequently, it is likely that businesses will implement the technology to maintain the competitive edge of their enterprises in order to foster customer growth, improve productivity and efficiency, and reduce their operational costs. In Australia, the number of micro enterprises that have adopted e-business has grown at a steady two per cent rate, per year, in the past eight to nine years (DIISRT, 2012). In 2011, the implementation or procurement of e-commerce solutions in micro enterprises had increased from 3.5 per cent in 2010, to 24.4 per cent (DIISRT, 2012). This low percentage indicates that the adoption of e-commerce in micro enterprises in Australia is still in its infancy (Duan et al., 2012; Fellenstein & Wood, 2000; Xu et al., 2007).

Several quantitative studies on SME’s technology adoption factors found that there was a positive linkage between government induced factors and the adoption of e-business (Chong, Lin, Oii, & Raman, 2009a; Clark, 2003; Duan et al., 2012; Pollard, 2003). Research results are inconclusive as to whether direct funding from the government (Chong et al., 2009a); or indirect help via the SME’s business network (Stockdale &
Standing, 2006) are effective. Pollard (2003, p. 61), in her research of a government-sponsored programme on e-business adoption in small farms in Tasmania, concluded “the inconsistency between perception of government-sponsored programme and the low level of e-service use is perplexing and warrants further investigation”.

Successive federal and state governments have recognised that micro enterprises in particular, as well as SMEs on a broader scale, play a vital role in the economy and contribute to social prosperity of the nation. The federal and state governments have been implementing policies and programs to increase the micro enterprises’ awareness of e-business and encourage the adoption of e-business amongst micro and small enterprises. This strategic view is shared by many governments in the Organisation for Economic and Cooperation and Development (OECD) countries, especially in the top ten e-business ready nations. Australia’s ranking in the worldwide e-readiness scale has fluctuated within the top ten countries, indicating that world governments, especially in the developed countries, are continuously leapfrogging each other by introducing new initiatives and programmes to support the growth of e-business. The ranking also highlighted the maturity of e-business, and subsequently new scoring criteria have been introduced to address the social, legal and political aspects of the framework of e-business (The Economist Intelligence Unit, 2010).

Past Australian governments have injected massive funding with a view to induce mass adoption of e-business within the small enterprise sector (Stockdale & Standing, 2006). However, as discussed by several authors (Goode, 2002; Jutla et al., 2002; Stockdale & Standing, 2006), the adoption of e-commerce remains low. Stockdale and Standing concluded that “the motivation of business to adopt e-business was often underestimated or overlooked”. Their research suggested that “a targeted approach would be more effective” (Stockdale & Standing, 2006, p. 382).

Sensis, the Australian publisher of Yellow Pages and White Pages, conducted annual surveys of SMEs on the use of e-business in Australia. They reported a flat two per cent annual adoption growth rate of e-business for micro enterprises which indicated that while the overall digital economy is on the rise, the digital evolution has not occurred
within small businesses. The survey in 2012 highlighted that the gestation period has been taking too long for e-business to be considered as a key means to help micro enterprises survive, grow and compete in an increasingly globalised market (Sensis, 2012). There is evidence that e-business can bring more benefits to SMEs than their larger counterparts (OECD, 2004). Stockdale and Standing (2006, p. 386) used the metaphor of swimming to explain varying degrees of willingness to adopt e-business. They suggested three distinct groups of businesses that are neither convinced of the benefits of e-business, nor do they perceive the need to implement it any time soon. These three groups are: the “landlubbers”, the group of business owners that have no intention of growing their business, are content with the status quo and have no plan to adopt new technology; the “toe dippers”, who “show little ambition to grow beyond their current size and have an innate trust of the IT industry”; and the “paddlers”, who implement e-commerce but do not perform business transactions electronically.

The Federal government and some states including NSW established a Small Business Commission in each jurisdiction to provide focus on this important sector of the economy. The NSW government has moved away from the funding of case studies and a centralised approach, to face-to-face interactions and a decentralised approach, to examine whether it can improve the adoption rate. It has contracted a number of providers where each provider has a physical centre, but their staff and advisors are fundamentally mobile. The local teams are responsible for the design of specific programs around local current activities to coincide with the Federal government’s agenda such as the rollout of the National Broadband Network (NBN) in certain areas. Staff at the Commission are tasked with providing advice to business owners on matters and processes that need to be considered prior to the implementation of e-business. The government aims to put a great emphasis on the practicality and feasibility of each case to ensure that micro businesses receive the assistance that is required (NSW Small Business Commission, 2015).

The literature review identified a number of gaps in the current literature. The review found that literature is inconclusive about the role of the government in the adoption of e-business within micro businesses. Government support is often mentioned in literature
as a factor, but there is little literature that provides a detailed examination of the degree of effectiveness of the role of government in the decision-making process of micro business in adopting e-business.

The literature review identified that there is potential disconnectedness or misalignment between the factors that pressured or encouraged micro business entrepreneurs to adopt e-business, and the programs and services that governments provide in this aspect (including the e-government leadership, communication, building and infrastructure and the enabling regulatory environment) (Al-Qirim, 2006). Within this context, the research focuses on key parameters that are used to assess the effectiveness and success of government effort in inducing the decision to adopt e-business. The parameters used as metrics to assess the government’s effort were adopted from the Government support e-business model proposed by Jutla et al. (2002). The six components in the Jutla et al. model: knowledge and innovation process-based; e-government leadership; regulatory, trust and financial structure; content infrastructure human infrastructure; and communications and information systems infrastructure are grouped into four major functional blocks: e-government and support services which includes knowledge and innovation process based and contents, information and technology infrastructure, regulatory framework, and lastly financial structure and trust. However, there is little literature discussing the multitude of influence of these government induced factors on the organisational factors which exist within micro enterprises. As outlined by Alzougoool and Kurnia (2008), organisational factors include but are not limited to these determinants: cost, organisational size, industry type, business age, staff acceptance, IT knowledge of the organisation, and time. Alzougoool and Kurnia (2008) also cited conflicting literature supporting and rejecting the role of government support in the adoption of technology in SMEs.

This research aims to examine the extent that government induced factors stimulate the inter-organisational factors within the micro enterprises which culminate in the adoption of e-business. Considering the broad research problem, this research addresses five specific questions to support the research.
The five research questions are as follows:

1. What are the adoption factors that affect the decision of micro enterprises owners to adopt e-business?
2. How are government support and services in e-business perceived by micro business?
3. To what degree does Australian government’s regulatory framework, trust and financial infrastructure influence micro business’ owners in adopting e-business?
4. How do the Australian government's human infrastructure programs foster the adoption and sustainability of the e-business within micro business?
5. How do public communications and information systems infrastructure encourage the investment and building of IT infrastructure of micro business?
The research seeks to identify adoption factors that the NSW state government should continue to develop, foster or focus with the federal government. It also seeks to highlight inducing factors that have negligible or adverse effect on the adoption of e-business. Of equal importance is that the findings of this research will be beneficial to state and federal governments’ policy developers in developing new policies or refining existing policies, regulations and programs in order to bring better outcomes to the micro enterprise sector and the SMEs as a whole.

The research also aims to help policy makers and administrators to gain a better understanding of the dynamism of micro enterprises from their perspectives. This will help improve their communication to the business community at large, streamline the bureaucratic processes and enhance governance and performance of current policies and programs. Furthermore, the findings of the research can be used to develop a key indicators framework to measure the success of these programs. This research can also be used to inform future research on a nation-wide basis given each jurisdiction may have its own idiosyncratic environment and regulations. As past studies were inconclusive in identifying a positive, direct link between the adoption of technology in micro businesses and government interventions and incentives (Constand & Gilbert, 2011), it is expected that the outcomes of this research will contribute to the body of knowledge exploring the link between the government’s e-business agenda, and the intention of business owners to implement new technology. A number of studies confirmed the positive correlation between adoption of technology and government support services. Nevertheless, other researchers found that e-business suppressed local business activities especially in rural and regional areas since customers are shifting their purchasing activities to elsewhere (Cumming & Johan, 2010). This outcome of this research also will add to the scarcity of research on this issue in Australia and NSW on small and micro businesses. The research will help inform policy makers, and highlight the changing role of government e-business from “controllers of information and services to facilitators of information” (Potnis & Pardo, 2011, p.45).
There are six chapters in this thesis. The first chapter provides some background information about this thesis and paints an overall structure of business in Australia and in NSW. It introduces the broad research question and the objectives of the research. Chapter 2 provides the overall context and extant literature concerning the broad research questions using the literature research framework outlined in the chapter. It identifies gaps in the literature and proposes five research questions to be addressed in this thesis. Chapter 3 discusses the broad research methodology topic and outlines the rationale and justification for the selection of an appropriate research methodology for the thesis. It presents the scope, research framework and research design, data collection procedures developed for this thesis and discusses its limitations. Chapter 4 presents the findings for each research question and provides an in-depth analysis of the results collected from the study. Chapter 5 concludes the thesis and summarises the research outcomes from the findings in chapter 4. Chapter 6 discusses the impact and contribution of this research to the existing body of knowledge and suggest future research questions that may be conducted. The next chapter discusses relevant literature pertaining to the research problem, identifies knowledge gaps in the literature and outlines the research questions for this study.
2. LITERATURE REVIEW

This chapter reviews available literature on the characteristics of micro enterprises in Australia and specifically in New South Wales, identifying the parent theories that provide the foundation and the framework for the adoption of technology in general and e-business in particular within a firm. The review focuses on holistic factors that affect the adoption of technology and explores literature that discusses government-induced factors that influence the adoption decision.

It also aims to provide a snapshot of current federal and state government policies on e-business. Within the context of these environmental and endogenous factors that could influence the decision to adopt e-business, the review attempts to explore literature on perceptions of entrepreneurs of micro business in Australia towards these government-induced factors that may impact on their businesses in the course of adopting e-business within their businesses.

A literature research framework is proposed below.

![Figure 2: Literature Research Framework](image-url)
2.1 Characteristics of Entrepreneurs of Micro Enterprises

In this section, the characteristics of the micro businesses in Australia are described, commonalities and differences with their NSW counterparts are discussed, and factors that influenced business entrepreneurs’ decision to adopt technology are reviewed.

2.1.1 Composition of an Australian micro business

According to the ABS’ (2012) definition, small and medium enterprises (SME) are segmented into three sub-categories: micro enterprises, with up to four employees; small enterprises, with five to 19 employees; and medium enterprises, with between 19 and 199 employees. Micro enterprises include businesses which are non-employing or with one to four employees (DIISRT, 2012). Generally, statistics pertaining to micro enterprises often include information reported under small enterprises, unless there are specific issues related to micro enterprises, such as those discussed in this thesis. The term “micro business” is often used as a synonym for small enterprise (ABS, 2012). In the Key Facts – Small business (2012) report released by the Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRT), micro enterprises currently contribute around 20 per cent of the Gross Domestic Product (GDP) and employ approximately 50 per cent of the private sector workforce (DIISRT, 2012). MacGregor and Vrazalic (2006, p. 25) pointed out that “although size is a major distinguishing factor, small businesses have a number of unique features that set them apart from larger businesses”; Campin et al. (2013) reported similar findings. Sixty five percent of the 5-19 employee SMEs are family businesses. These businesses are independently owned or operated and the proprietor contributes most of the operating capital. The average firm size of an Australian SME is six employees, and the survival rate of micro enterprises in Australia is about 59.7 per cent (DIISRT, 2012).

This research specifically concentrates on micro enterprises since this sector accounts for around 85 per cent of businesses in Australia (DIISRT, 2012). Schaper (2006) identified that, internationally, the proportion of SMEs accounted for at least 95 per cent of all businesses. Schaper also pointed out that the number of micro and small enterprises means that they make up the base of an inverse pyramid-type structure, with
a handful of multi-national corporations concentrated at the peak of the structure. In addition, Schaper (2006) commented that SMEs in most developed countries may inherit some intrinsic and fundamental characteristics that shape the distribution of firms in each country. Since the behaviour and characteristics displayed by micro enterprises is similar to those of the SMEs, where literature on micro enterprises is lacking, recourse has been made to literature on e-business in SMEs.

In 2012, key statistics released by DIISRT reported that the number of non-employing business in Australia accounted for 61.2 per cent, while business with one to four employees accounted for 23.9 per cent of the total number of businesses in Australia. (DIISRT, 2012). Together, micro enterprises in Australia represented 85.1 per cent of the total number of Australian businesses. The ratio of micro business to the total number of businesses has remained constant since 2009 (DIISRT, 2012) thus confirming the important role of micro enterprises in the economy as well as showing that the ratio of micro business to the total of all business is similar in several developed countries around the world (DIISRT, 2012; Schaper, 2006). In Australia, businesses within the SME sector are grouped along 19 industries as categorised by the ABS (2012).

NSW, the most populous state in Australia, has the largest share of all micro businesses in Australia, accounting for 33.2 per cent of SMEs in the country (DIISRT, 2012). The top nine ranked industries of NSW’s small enterprises are similar in percentage to the top nine ranked industries nation-wide; with the exception of Wholesale Trade, which came ninth in NSW in the place of manufacturing nation-wide. There are more small enterprises providing professional, scientific and technical services businesses in NSW than their counterparts nationwide. The number of small enterprises in rental and real estate services and financial services is also higher than national percentage of similar industries, thus indicating the strength of the service based nature of the NSW economy. In terms of industry value added to the economy; finance, manufacturing, professional, scientific and technical services, and construction made up the top five ranking industries in NSW in 2009-2010 (NSW Government, Trade & Investments, 2013). The National Bank’s Quarterly SME Review, June Quarter 2014 reported that SMEs in
transport and professional services performed better than medium and larger firms (National Australia Bank, 2014).

<table>
<thead>
<tr>
<th>ABS Grouping</th>
<th>Percentage of Total Businesses (nation-wide)</th>
<th>% of Small Business out of total businesses in NSW</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Agriculture, Forestry and Fishing</td>
<td>9.6</td>
<td>8.7</td>
</tr>
<tr>
<td>2 Mining</td>
<td>0.37</td>
<td>0.2</td>
</tr>
<tr>
<td>3 Manufacturing</td>
<td>4.3</td>
<td>3.8</td>
</tr>
<tr>
<td>4 Electricity, Gas, Water and Waste service</td>
<td>0.27</td>
<td>0.2</td>
</tr>
<tr>
<td>5 Construction</td>
<td>16.5</td>
<td>15.5</td>
</tr>
<tr>
<td>6 Business Wholesale Trade</td>
<td>3.71</td>
<td>3.9</td>
</tr>
<tr>
<td>7 Retail Trade</td>
<td>6.8</td>
<td>6.7</td>
</tr>
<tr>
<td>8 Accommodation and Food Services</td>
<td>3.8</td>
<td>3.4</td>
</tr>
<tr>
<td>9 Transport, Postal and warehousing</td>
<td>6.4</td>
<td>6.4</td>
</tr>
<tr>
<td>10 Information Media and Telecommunications</td>
<td>0.9</td>
<td>1.1</td>
</tr>
<tr>
<td>11 Financial and Insurance Services</td>
<td>7.6</td>
<td>7.8</td>
</tr>
<tr>
<td>12 Rental, Hiring and Real Estate Services</td>
<td>10.6</td>
<td>11</td>
</tr>
<tr>
<td>13 Professional, Scientific and Technical Service</td>
<td>11.6</td>
<td>12.8</td>
</tr>
<tr>
<td>14 Administrative and Support Services</td>
<td>3.8</td>
<td>4</td>
</tr>
<tr>
<td>15 Public Administration and Safety</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>16 Education and Training</td>
<td>0.12</td>
<td>1.3</td>
</tr>
<tr>
<td>17 Health Care and Social Assistance</td>
<td>4.6</td>
<td>4.9</td>
</tr>
<tr>
<td>18 Art and Recreation Services</td>
<td>1.3</td>
<td>1.4</td>
</tr>
<tr>
<td>19 Other Services and Unknown</td>
<td>7.4</td>
<td>6.4</td>
</tr>
</tbody>
</table>

Source: Adapted from Count of Australian Businesses 8165.0 (ABS, 2012) and (Griffith & Wilkinson, 2012).

Table 1: Count of Australian and NSW Businesses

2.1.2 Characteristics of micro business entrepreneurs

Campin et al. (2013), as well as MacGregor and Vrazalic (2006), reported that micro businesses broadly exhibit specific characteristics that distinguish them from their medium and large business counterparts. They reported that males are the single decision maker in over 90 per cent of SMEs and that approximately one third of these proprietors/directors possess tertiary education (ABS, 2014a). A review of unique
characteristics of small business by MacGregor and Vrazalic (2006) found that a small business is more reluctant to spend on technology projects owing to shortages of funding and technical knowledge when compared to its larger counterparts.

To understand the impact and influence of any factor on the dynamics of a micro enterprise, it is essential to examine the internal attributes and the external forces that may shape the decision-making process of an individual entrepreneur. It is the focus of this research to provide an in-depth understanding of the perceptual aspects of the individual entrepreneur in NSW on these adoption factors prior to making the decision to adopt e-business. It is commonly reported that the process leading to the adoption of e-business decision by the micro business owner is mostly reactive, short-term, ad-hoc (Billi & Raymond, 1993), or for personal reasons (Campin et al., 2013), and is usually carried out predominantly by the proprietor or manager (Stockdale & Standing, 2006) of the enterprise with inadequate planning and documentation (MacGregor & Vrazalic, 2006). Despite the fact that less than half of the medium size firms, and less than one fifth of small firms have a business plan, the strategic direction or the corporate governance of the firm are formulated or strongly influenced by the owners of these enterprises (Karami et al, 2008; MacGregor & Vrazalic, 2006). Decision making plays an essential role in the adoption process of new technologies by SMEs, and especially small enterprises (Harfield, Driver & Beukman, 2001), although Wiesner and Millet (2012) found that Australian SMEs tend to shy away from implementing cutting-edge or complex technology. Harfield et al. (2001), together with Macgregor and Vrazalic (2006), found that most SMEs’ owners and managers use intuition to make decisions, and that they are more risk avoidant than their larger counterparts. Wiesner and Millet (2012) also reported that Australian SMEs are more oriented towards conducting a short-term financial analysis than a long-term business strategy.

There has been a wealth of literature confirming the dominant role of the SME’s owner in any implementation of technology (Goode, 2002; Pollard, 2003; Stockdale & Standing, 2006; Thong and Yap, 1995). Given the vital role of the business owner, the adoption of any technology such as e-business is subject to the attitudes of the proprietors toward technology projects (Fillis, Johannson, & Wagner, 2003; Stockdale
& Standing, 2006); the entrepreneurs’ perceptions of the external environment; the competition in the market; and the perceived hostility (if any) from its peers and rivals (Lefebvre, Harvey, & Lefebvre, 1997,); or pressure to retain contracts with larger firms (Stockdale & Standing, 2006). These perceptions have a moderating effect on the relationships between determinants of technology policy and technology policy itself, and between technology policy and success of the enterprise (Lefebvre et al., 1997).

Winston and Dologite (2002) conducted qualitative research on the SME owners’ attitude towards IT and their management style. The research found that there is a link between entrepreneurship and the successful implementation of new technologies. Entrepreneurial owners with a positive attitude towards IT have a tendency to embrace new technology and they genuinely believe that implementing new technologies will improve the efficiency and effectiveness of their business. Similarly, Pollard (2003) found evidence that the managerial skills of owners are the best predictor of e-business in small agricultural enterprises in Tasmania, Australia. Interestingly, while resisting the adoption of technology, entrepreneurial owners with a negative attitude will take action to minimise any risks involved with the implementation of technology, thereby ensuring a high-quality implementation plan. Traditional owners want to maintain status quo and do not feel the need to implement or expand their current technology beyond what it can do.

Nevertheless, possessing entrepreneurial flair and making intuitive decisions may not be sufficient to encourage businesses to adopt e-business. The implementation of technology may require higher levels of decision making as Schoemaker and Russo (1994) suggested in their decision-making hierarchy framework, in which intuitive judgment requires the least amount of time and effort, followed by rules and shortcuts, importance weighting and value analysis. Making an effective business decision is time consuming because a large amount of time needs to be spent on analysis and implementation. This research aims to further add to the extant literature of the role of the governments as the highest echelons of the decision-making hierarchy in Australia on policies and regulations.
In a survey of more than 8,000 SMEs in the United Kingdom (UK), conducted for the UK Federation of Small Business (FSB), Pickernell et al. (2013) found that small businesses in tourism and industries with high knowledge service were more proactive in the adoption of e-business; however there was no correlation between primary and construction industries and the adoption of technology. The survey also reported that SMEs with more face-to-face relationships with its customers have fewer tendencies to implement e-business.

Micro businesses in NSW, while being the smallest in size, are the ‘powerhouse’ of the economy in NSW and Australia. The business owners hold the key to the implementation of any new technology in the organisation. The owner’s perception of the new technology and the benefits that it brings to the business are the decisive factors in adopting technology in a micro business setting. The OECD (2001) identified that e-business has the potential to be used as a key driver to foster economic growth and create more job opportunities. The Australian government has initiated several programmes to encourage businesses as a whole to adopt e-business. The next section will provide a thorough review of literature on e-business and its benefits to business.

2.2 E-business

Since its inception in 1969 as a project of the Advanced Research Projects Agency (ARPA) of the U.S. Department of Defense, the Internet has evolved from a small research military-based application to a world-wide adopted application and technology. Much of this success is largely based on self-regulation, non-profit, global and consensus-driven approach managed by the Internet Corporation For Assigned Names and Numbers (ICANN, 2015).

Today, the Internet has become a major conduit for the distribution of data and knowledge across the world (Ryan, 2010). In March 1972, the world experienced the first Internet application: e-mail (Rayport & Jaworski, 2001). Using the Internet as the underlying network, a stream of new applications emerged such as websites, intranet, electronic bulletin boards, electronic payment and social media platforms and applications. These applications and systems are collectively referred as e-business.
There are numerous definitions of e-business and these definitions are broadly based on system services such as communication, information searching and gathering, transaction processing and data interchange (Featherman & Pavlou, 2002) or along technology innovation stages: email, websites, online ordering and payment processing (Daniel et al., 2002); or a combination of both.

Fillis et al. (2004) defined e-business as e-technology that firms use in their business operations, excluding e-mails. The National Office for the Information Economy (NOIE), now part of the Australian Government Information Management Office (AGIMO), defines e-business as conducting business using Internet technology. This definition appears to be in line with other developed countries in the world (Ryan, 2010). The Irish Department of Enterprise, Trade and Employment defined e-business as “the application of information and communication technologies to business processes” (2004, p. 9).

The NSW government states “e-business can be as simple as using the Internet to send emails between staff or communicate with suppliers. A business can be considered an e-business even if it doesn't buy and sell products over the Internet, as the term refers to business activities that are assisted by the Internet” (NSW Small Business Commissioner, 2015).

E-commerce is a subset of e-business. It refers specifically to the ordering, buying, selling and paying for products and services using the Internet. E-commerce can be implemented to “cover all aspects of the business or be used alongside existing, traditional business models. E-commerce uses the Internet to market, sell and conduct transactions with customers without face-to-face contact between the buyer and seller. Many e-businesses now conduct all of their operations online and have no physical store that customers are able to visit” (NSW Small Business Commissioner, 2015).

The OECD defines e-commerce as “the sale or purchase of goods or services, whether between businesses, households, individuals, governments, and other public or private organisations, conducted over computer-mediated networks. The goods and services are
ordered over those networks, but the payment and the ultimate delivery of the goods or services may be conducted on or off-line” (OECD, 2005). E-commerce is defined as “technology-mediated exchanges between parties (individuals, organisations, or both) as well as the electronically based intra- or inter-organisational activities that facilitate such exchanges” (Rayport & Jaworski, 2001, p. 3). Another simpler, and narrower, definition of e-commerce is “trading electronically” (Fellenstein & Wood, 2000, p. 27). E-commerce is often considered as a collection of a number of communication technologies such as email, fax, online services, web based, electronic funds transfer (EFT), Electronic Funds Transfer at Point of Sales (EFTPOS) and Electronic Data Exchange (EDI) (Pollard, 2003). E-commerce applications are broadly grouped into a number of categories:

- Business-to-business (B2B), e.g. order entries, invoices and electronic payments etc.;
- Business-to-consumer (B2C), e.g. invoices, marketing materials, catalogues, websites etc.;
- Consumer-to-consumer (C2C), e.g. transactions like feedback forums, personal blogs etc.; and
- Consumer-to-business (C2B), customers generate value for a business such as written reviews that may increase sales for a business (Rayport & Jaworski, 2001).

A number of new categories have emerged recently including c-commerce (collaborative commerce) (Chong et al., 2009a), government to business (G2B), social media technology such as Facebook, Twitter, LinkedIn and YouTube (Sensis, 2013) and user-generated content such as blogging (Burgess et al., 2011). New technology platforms were introduced to mass markets such as smart phones and tablets to enhance mobility for the users. Sensis (2013) reported that four per cent of SMEs own tablet devices and 68 per cent own smart phones. However, the report did not make clear whether these devices are used to full effect for business purposes. In most instances of pertinent literature on this subject, the terms ‘e-business’, ‘e-commerce’, ‘E-services’, and ‘Internet commerce’ or ‘i-commerce’ are often used interchangeably (Pollard, 2003). In Australia, in the year 2009-2010, the percentage of micro enterprises with the Internet rose by 0.8 per cent to 89.1 per cent (DIISRTE, 2012). In 2003, the adoption rate
of e-business in small enterprises increased by two per cent in 2003, preceded by a four per cent increase in 2002, which were quite small compared with a 15 per cent increase in 2001 and a 12 per cent in 2000 (Yellow Pages, 2002, 2003).

Governments in the OECD countries, especially those in the top ten e-business ready nations, recognised the importance of governments’ policies in encouraging SMEs to adopt e-business. Their efforts and successes have been measured through the e-readiness rankings conducted by the Economist Intelligence Unit of the IBM Institute for Business Value. Australia was ranked ninth in 2010, sixth in 2009, ninth in 2003 and second in 2001. (The Economist Intelligence Unit, July 2002, 2009, 2010). Particularly noteworthy is that in 2010 the Australian government’s policy and vision on e-business was given a score of 8.85 out of ten, ahead of New Zealand (8.5); but was behind countries like the United States (9.25), South Korea (9.2), Hong Kong (9.18) and Singapore (9.15) (The Economist Intelligence Unit, 2010). Australia’s policy and vision score was below that of the United States, Hong Kong and South Korea, thereby indicating a slow response, at least to a degree, from Australian governments at all levels to introduce strategies and policies to develop and foster an environment conducive for all businesses to adopt technologies. Australia’s legal framework and policies to facilitate e-business was scored 8.50, trailing behind New Zealand (8.60), Hong Kong (8.7) and Singapore (9.0). In Australia, business’ willingness to adopt e-business was scored at 8.18, which was behind numerous countries including Sweden, the US, Hong Kong and Singapore (The Economist Intelligence Unit, 2010). The fluctuation of Australia’s e-business ranking over the past five years indicated that many countries, especially those in the developed world, are increasingly embracing the digital world and are introducing new regulations or services to reduce cost of entry or compliance cost for businesses, and increasing collaboration between government agencies and across multiple jurisdictions (Mazzarol, 2014). Developed countries are leap-frogging each other by introducing innovative approaches and effective regulations to stimulate the adoption of e-business in SMEs and the expansion of government programs is among these policies.

The Sensis’ e-business Report (2013) reported that the proportion of SMEs intending to implement e-commerce in their businesses remained unchanged at 6 per cent in 2013.
Some 36 per cent of businesses reported that their business has no intention to introduce e-commerce. In 2003, 81 per cent of SMEs implemented some forms of e-business (Yellow Pages, 2003). In 2013, this number had increased to over 90 per cent. According to Sensis (2012), 91 per cent of Australians use the Internet to search for information on products and services, yet only 66 per cent of SMEs have a website highlighting that the rise of the national digital economy so far has outgrown the rise of the digital SMEs.

E-business is continuing to evolve and its pervasive applications are getting easier to use and the portability of e-business applications to small and personal platforms such as smart phones and blogs will play an important role in the adoption of technology for micro business. Nevertheless, the increasing popularity of these platforms will need to be supported by an appropriate level of legal and social obligations overseen by government agencies. From the inception of the Internet, the concept of e-business and its applications have grown and evolved rapidly. Consideration was given to select a broad definition of e-business to be used for this research and given that this research focuses on small business in NSW, the definition of e-business described by the Small Business of NSW Commission is used. The Commission stated that e-business is business activities that are assisted by the Internet (NSW Small Business Commission, 2015). In order to understand the government influencing factors on the adoption of e-business in small enterprises, a number of theories of technology adoption have been proposed by several scholars, academics and theorists. The next section will explore some relevant theories that have been used to explain or argue the factors that can influence the decision of the proprietors to adopt e-business in their own business.

2.3 Theories on Adoption of Technology

Micro businesses are facing several challenges and opportunities from competition, globalisation, internationalisation of markets to the changing nature of the worldwide economy through the advances of technology (Alexander, 2006; Raymond, 2003). To address these challenges successfully, it has been suggested that business ought to innovate from both technological and organisational perspectives (Alexander, 2006;
Dutta & Evrard, 1998) to remain viable. The adoption of e-business requires a review of literature on technology adoption models and related publications.

There are numerous technology adoption theories and models that have been proposed or used by several researchers. These theories and models attempted to examine the dynamism of small enterprises from different perspectives such as innovation, resources, business processes, social science, psychology, technology, organisational building, marketing and finance. There are a plethora number of theories employed by researchers to investigate the drivers required to encourage or coerce business entrepreneurs to implement e-business. However, a review of current literature suggests theories that are based on technology adoption or innovation, institutional or process-based appeared to be relevant to this research.

The growing body of qualitative research literature investigating the influencing factors from government agencies’ skill in managing business (Pollard, 2003), finance and human resources to consistencies and frequencies of advice and trust and commitment (Chaston & Baker, 1998) can be grouped into at least three prime theories. The first is the theory of innovation, that is, the business owner’s decision, opinions and attitudes adoption is influenced by individual expectations, peer pressure, perceived risks and the external environment in which the business operates (Gary, 2003; Mackay et al., 2003; Rogers, 2014; Xu et al., 2007). The second theory refers to institutional theory, according to which mimetic pressures from governmental regulations, competitors or their peers to implement new practices impacted upon the business. The third theory uses the task-technology fit theory to explain the degree of success of a new implementation of technology in a business (Pai, 2012). While these theories discuss the enabling factors and user acceptance (Klaus & Blanton, 2010), the theory of user resistance is also used by researchers to focus on the owners’ resistance to technology and to investigate the reasons for the avoidance or delay in adopting new practices or technology in businesses. There are other theories that have been used or proposed by researchers such as the theory of utilisation (de Lancer-Julnes & Holzer, 2001) or the classification model of SME (Stockdale & Standing, 2006); however, these theories do not appear to be frequently referenced in the literature.
2.3.1 Theory of innovation

The theory of diffusion of innovation, proposed by Everett Rogers in 1962 (2014), has been used by a majority of researchers to explain the deployment or implementation of technology in businesses. The theory has a primary focus on diffusion of innovations among individuals; with respect to this research, on the entrepreneurs rather than the business itself. Rogers (2014) proposed that the parametric requirements for the business owner to adopt a technology depends on: the perceived attribute of the technology to be introduced in the business, how the decision is derived, communications channels between businesses, their network peers, different levels of governments, the promotion efforts, and the operating environment surrounding the business. This theory is seminal to a large body of literature and theoretical frameworks which examines factors that influence the adoption of e-business in a firm (Duan et al., 2012; Kraemer & Xu, 2003; Nguyen, 2009; Ononiuwu, 2013; Tan et al., 2006; Tornatzky and Fleischer, 1990; Zhu et al., 2003).

However, the frameworks that are based on the diffusion of innovation theory did not address adequately the availability and skill of resources in the firms, the type and degree of complexity of e-business technology that the firm seeks to implement. These frameworks tend to overlook the coercive forces or perceived pressures that influence the decision to adopt technology (Mackay et al., 2003). Looi (2005) pointed out that research outcomes are inconclusive as to whether innovation influences micro and small enterprises to adopt e-business or not. A research project conducted by Chong et al. (2009a) of 400 organisations in Malaysia concluded that technological innovation has negligible influence on the adoption of e-business. However, a study of the adoption of e-commerce in the textile industry in China found that innovation has a positive impact on the decision to adopt e-business (Chong et al., 2009b). The theory has also been criticised for assuming that inhibitors to adoption are common across all enterprises (Ononiuwu, 2013).

To address the inadequacy of the theory and to react to the emergence of new e-business technology, a number of specific and hybrid e-business growth/adoption models have
been proposed and published. The technological-organisation-environment (TOE) framework, developed by Tornatsky and Fleischer (1990) based on the technology diffusion theorem’s variables outlined by Rogers (2014), has been used by a large number of researchers to appraise the adoption of technology in SME (Chong et al., 2009; Duan et al., 2012; Kuan & Chau, 2001; Nguyen, 2009; Thong, 1999; Zhu et al., 2003). The theory enables researchers to identify external environmental factors that may impact on small businesses and provides a theoretical foundation for researchers to can explain their research outcomes.

Other adaptations of the diffusion of innovation are the Technology Acceptance Model (TAM), proposed by Davis, Bagozzi and Warshaw (1989), or the hybrid Unified Theory of Acceptance and Use of Technology (UTAUT), by Venkatesh, Morris, Davis and Davis (2003). In the Theory of Technology Acceptance Model, Davis et al. (1989) suggested that the intention to implement technology is influenced by the perceived usefulness of the technology and the perceived ease of use of the technology. Venkatesh et al. (2003) observed that when the proprietor has limited or no IT skills and given the small size of the small enterprise, perception plays an influencing role in the mind of the owner. It is the perception on the perceived benefits of e-business, the perceived kudos received from their peers, or the perceived threat or concerns from e-business that drive the decision to adopt e-business.

The resource-based theory DTI argued that the adoption of technology is largely based on the availability and skills of the employees in the firm (Bruque-Camara et al. 2004; Taylor & Murphy, 2004). The DTI’s e-business adoption ladder was largely modelled on the Stage theory which examined the ability of the firm to adopt e-business based on the maturity of the IT capability of the firm. The theory suggested that e-business would be quickly adapted into the firm if the business has already implemented some sort of technology platforms or systems. From the e-business perspective, in the DTI adoption ladder, the email was used as a starting point to communicate electronically and efficiently, and followed by the implementation of a website, which is in turn followed by using e-commerce to facilitate ordering and payment online. As the business model grows in complexity and sophistication, the business will consider implementing e-
business to streamline its supply chain and minimise wastage in financial and physical resources. The higher the degree of complexity of the IT systems already in place in the business, the more willing the business is to adopt e-business (DTI, 2001; Taylor & Murphy, 2004). The theory was used by many researchers in this space to explain the progressive nature of the implementation of technology in small businesses.

Other researchers use an institutional based theory to explain how business owners adopt a practice such as the implementation of technology to gain competitive advantage based on the business’ core competencies such as business strategy, relationships, technology and their IT capabilities.

2.3.2 Institutional theory

The institutional theory suggests that the behaviour of a firm to implement a new business practice can be viewed through institutional implements, processes or structures (Hillebrand et al., 2011; Teo et al., 2003). Researchers argued that the theory places less emphasis on the technical prowess of the current management of the firm, and more on to the social and environmental pressures such as the business’ competitors, their industry peers or governments through the coercive pressure of government regulations. Researchers suggested that these appeared to yield a significant impact on the practice of businesses (Coffey et al, 2013).

Researchers found that regulations coupled with education and incentives played a useful role in the encouragement of business management to adopt technology. However, small businesses, due to their size, do not have the financial resources nor the knowledge to take on a leadership role, and any decision may need to wait for a consensus to emerge or decisions being largely driven by governments, larger businesses or consumers (Coffey et al., 2013; Hillebrand et al., 2011).

The theory argued that a business will adopt a new practice because of mimetic pressures from governments, its competitors or its peers (Coffey et al., 2013). However, a number of studies has reported that the adoption of new practice was based on outcomes rather frequency. This finding has a significant ramification for this research.
since business owners may adopt a new practice because similar practices yielded good outcomes in a similar business, rather than adopting a practice that has been implemented by many businesses with unknown outcomes. The next section discusses the task-technology fit theory.

2.3.3 Task-technology fit theory

This theory helps explain the degree to which a technology can assist an individual in performing their task (Pai, 2012). Researchers have found that there is a positive and directional link between the IT knowledge of business owners and the adoption for e-business. Researchers also found that the theory can be used to identify and investigate critical organisational capability in order to adapt technology. Studies found that an incompatibility of any technology in the business to the skills of its employees will result in a poorly performed business (Onaniwu, 2013). However, researchers have also found that other important organisational factors, such as the lack of continuous improvement strategy, poor communication, poor vendor support and lack of motivation amongst employees, have a major significant impact on the success of any adoption of new technology (Soja & Palidowa-Pekosz, 2009).

2.3.4 User resistance theory

The User Resistance theory identified the negative behavioural reaction of an individual towards a present situation or future consideration (Meissonier & Houze, 2010). In the context of this research, often the avoidance or delay in adoption of technology from the business owner can be viewed as a passive or active resistance towards the adoption of e-business. Research found that effective communication and adequate training in the early stages of the implementation may lead to better implementation outcomes (Klaus & Blanton, 2010). Often, concentrating on the negative aspects of the human behaviour and addressing them in a timely manner will positively affect the implementation of technology.
2.4 Factors Affecting the Adoption of Technology

2.4.1 Technical-organisation-environment framework

There are copious studies (Chong et al., 2009; Duan et al., 2012; Kuan & Chau, 2001; Nguyen, 2009; Thong, 1999; Zhu et al., 2003) discussing the use of the technological-organisation-environment (TOE) framework developed by Tornatzky and Fleischer (1990) to appraise the adoption of technology in SME. The framework was based on the technology diffusion theorem’s variables outlined by Rogers (2003). This framework identified three aspects of a business that could influence the adoption of technology: technological, organisational and environmental. Technological context describes the technology related to the business. Organisational context defines the internal aspects of the firm such as formalisation, managerial structure, skills and processes. Environmental context refers to the surrounding arena that a firm conducts its business such as government policies and regulations, network peers and its competitors. External factors such as globalisation, government policies, competitive pressure and cultural attitudes to change can be considered macro factors that can influence the decision-making process (Gengatharen & Standing, 2005; Pollard, 2003; Tan et al., 2006). These macro factors in turn exert pressure on the business’ internal factors, which include organisational readiness, demographic details and skills of the entrepreneur. Organisational readiness refers to the IT readiness and the financial readiness of the business (Duan et al., 2012) and the level of computing infrastructure of a business (Mackay et al., 2004). Together, these factors shape the attitude of the entrepreneur towards the adoption of e-business. Duan et al. (2013) reported in their research that there is a strong relationship between management support and the adoption of e-business in micro businesses.

Since 1990, there have been separate studies investigating the three components of the TOE framework. The appropriateness of this theoretical framework in measuring the progress of e-business adoption has been validated by several scholars (Duan et al., 2012; Kuan & Chau, 2001; Thong, 1999; Zhu, Kraemer, & Xu, 2003). These studies focus on the relative competitiveness of the SMEs, the business strategy, managerial
skills and leadership of the business owners, as well as staff training and skills demands (Cosh, Duncan, & Hughes, 1998; MacGregor & Vrazalic, 2008; McLarty, 2000; Raymond, 2003; Sadler-Smith, Sargeant, & Dawson, 1998), entrepreneurship of the proprietor (Ibrahim & Soufani, 2002), the business model and the competitive strategy (Kleindl, 2000), and physical, human and financial resources (Entrialgo, Fernandez, & Vazquez, 2001).

In particular, the TOE framework was used by a number of researchers to study the adoption of technology, namely the adoption of information systems in micro business (Thong, 1999); the perception-based model for the implementation of Electronic Data Interchange in micro business (Kuan & Chau, 2001); the facilitators and inhibitors of technology adoption in a number of electronic firms across Europe (Zhu et al., 2003); the adoption of e-market in Australian SMEs (Duan et al., 2012); and the interrelationships between organisational support, perceived usefulness, compatibility, external pressure and organisational pressure of the 100 top Ghanaian companies (Saffu et al., 2008). Mackay et al. (2004) applied the TOE model to observe the link between the organisational readiness, the perceived social risk of not proceeding with the implementation of technology and the perceived benefits, which include efficiency, information sharing, and marketing and revenue generation in non-profit organisations. Bakker et al. (2008) also used the framework to examine the external pressure and the internal readiness of SMEs across the UK health sector. Tan et al. (2007) used the Perceived eReadiness Model, an adaptation of the TOE model, to survey 134 SMEs in China and found that the organisational readiness of a business was more significant than the external readiness which included the government eReadiness.

### 2.4.2 Internet adoption model

It has been suggested that the adoption of e-business will be similar to the adoption of any information and communications technology (Levy & Powell, 2008). Nevertheless, in line with the emergence of the Internet technology and e-business applications and systems, Mehrten, Cragg, and Mills (2001) proposed the Internet Adoption Model (IAM), based on the TOE framework, to be used specifically for the evaluation of the adoption of Internet technology by SME.
The IAM model is used to examine three key factors of adoption: perceived benefits, organisation readiness and external pressure from government regulations, suppliers and customers. The importance of these adoption factors were confirmed from the research on the adoption of e-business in Brunei (Looi, 2005). The perceived benefits factor was identified as one of the five important adoption factors. The other four factors were competitive pressure, IT knowledge, security, and government support. Zhu et al. (2003) in recognition of the importance of the macro factors that can impact on the decision making, added more emphasis on macro factor such as environmental impact to the model.

In the IAM model, perceived benefits are derived from three key elements: efficiency gained by the Internet over traditional methods such as telephone, fax or postal service; effective information sharing for employees to gather information via the Internet; and lastly, e-business can be used as a business tool or marketing tool. The framework considers e-business a business tool that can be used to enhance the firm’s value chain in all operational, logistical and commercial aspects of the business (Porter, 1985).

### 2.4.3 Perceived benefits

There is a wealth of extant literature examining the perceived benefits of e-business on the operations of the business (Bakker, Zheng, Knight, & Harland, 2008; Chong et al., 2009a; Duan et al., 2012; Levy & Powell, 2008; Looi, 2005; Nguyen, 2009; Poon & Swatman, 1999; Saffu et al., 2008; Xu, Rohatgu & Duan, 2007). The information gathered from the literature supports the notion that an effective and timely implementation of e-business will deliver many pertinent benefits to the firm. It allows businesses to extend their customer base, maximise operational efficiencies; generate additional revenue (NSW Small Business Commission, 2015) or reduce cost (Xu et al., 2007), increase business values (Breznik, 2012; Bunker & Yin, 2005; Fellenstein & Wood, 2000), or improve marketing and communications (Xu et al., 2007). Since its inception, e-business has been identified as a key enabler in the drive for more innovative ideas in the firm so that productivity can be enhanced and a competitive advantage can be achieved (Breznik, 2012; Canada e-business Opportunities
A survey of Irish businesses identified e-business as “a tool to drive supply chain efficiencies…and to unlock the value for the buyer…at the expense of the seller” (Department of Enterprise, Trade and Employment, 2004, p. 24). There is also a trend towards e-societies whereby many societies become electronically linked (Aghamirian et al., 2015; Fellenstein & Wood, 2000). The Canadian E-business Opportunities Roundtable (2002) argued that, despite the failures of the “dot-coms” in late nineties and the cooling off of over-heated technology markets, technology is still driving much of the wealth creation in the world. There is considerable evidence suggesting that e-business provides a competitive advantage for businesses (Beheshti, Salehi-Sangari & Engstrom, 2006; Fellenstein & Wood, 2000; Thatte, Rao & Ragu-Nathan, 2013; Thompson & Strickland, 2001). Some of the key industry sectors that have made significant progress in the adoption of e-commerce are telecommunications, computer software and hardware manufacturers, and aerospace (Fellenstein & Wood, 2000).

Despite extensive coverage of the benefits of e-business in professional publications, newspapers and websites, it was found that “more information about e-commerce and what it can do” specifically for a business is what business owners need (Pollard, 2003, p. 59). The capacity to promulgate the benefits of e-business, especially the benefits of pioneering or disruptive technology such as mobile technology, cloud computing and information intensive technologies, still remain the most important factor in influencing the firm’s decision to adopt e-business (Doolin & Ali, 2008) since business owners are still uncertain of the benefits that their business can obtain (Goode, 2002). Duan et al. (2012) found that the penetration of the Internet in Australian SMEs reduces the barrier to the adoption since SMEs can now afford to implement e-business with lesser cost than the traditional server-based solution.

However, factors that impede the adoption of e-business appear to be of the external factors such as security, fear of being hacked, or perception driven factors such as feeling that customers are not ready; customers not being prepared to perform electronic transactions over the Internet; the fear that customers can quickly and easily compare similar products or firm/managerial endogenous factors such as the organisational
readiness of the firm (Gengatharen & Standing, 2005). A survey of 392 retailers in the US concluded that the rapid growth of the market due to e-commerce did not pressure retailers to adopt e-business. It also found that increasing advertising expenditures in the online buying and selling business deters new businesses to enter the market, however as the market grows, the impact of advertising gradually dissipates (Ralitza, 2006). Support activities, such as the enterprise’s existing physical and capital infrastructure, procurement and human resource management, as well as technology development and capability, are critical to the decision to adopt e-business and these critical elements are discussed in the organisational readiness of small business (Mehrtens et al., 2001).

### 2.4.4 Organisation readiness

Results from research on organisational readiness, which refers to the IT and financial readiness of the business received, are mixed (Duan et al., 2012). Chong et al. (2009a) concluded that organisational readiness played an important role in their research of 400 Malaysian businesses. Organisational readiness encompasses primarily the IT infrastructure and computer systems of the business, and secondly the level of Internet knowledge among the owner-manager and other non-IT staff. The authors found that the firm size is not an important adopting factor since there is no evidence to suggest that a larger company implements e-business before a small firm (Mehrtens et al., 2001). This observation was also supported by a study of 700 SMEs in the United Kingdom by Daniel et al. (2002). However, the level of IT knowledge among managers and non-IT staff was identified as a significant factor for the adoption (Chong et al., 2009a; Mehrtens et al., 2001; Sensis, 2008). Surprisingly, the level of IT knowledge of the IT staff did not greatly influence the decision to adopt e-business. In China, Tan et al. (2007) found that the cultural factor was the most significant factor in the adoption of e-business.

Further research on literature on the vital role of the IT knowledge and capability within a firm was confirmed by Hadaya and Pellerin (2008) from a survey of 498 senior managers of Canadian manufacturing firms. The research’s findings indicated that the organisational readiness of the firm and its exposure to e-business play a significant role in its decision to implement any future e-business systems. This assessment is congruent
with the outcome of a multiple case study investigation on the adoption of mobile technology. The organisational readiness, its observability and top management support were cited as important factors for the adoption of e-business (Doolin & Ali, 2008). However, the level of IT knowledge of the IT staff did not greatly influence the decision to adopt e-business as suggested in the Electronic Data Interchange (EDI) Adoption model proposed by Iacovou, Benbasat, and Dexter (1995). While the IAM model did not consider financial resources an important factor, the development of a firm’s infrastructure and systems is a direct consequence of the investment of the firm over a period of time, as confirmed by Mackay et al. (2004) in their subsequent research using the IAM model.

The DTI e-business adoption ladder (DTI, 2001), based on the Stage theory, examined the ability of the firm to adopt e-business based on the maturity of the IT capability of the firm. The theory suggested that e-business would be quickly integrated into the firm if the business already has implemented some sort of technology platforms or systems. The higher the degree of complexity of the IT systems already in place in the business, the more readiness the business will be willingly to adopt e-business. Poon and Swatman (1997) argued that the high cost of investment, concerns over security aspects of the systems, inadequate IT systems and infrastructure, and a lack of awareness of benefits of the technology were seen as barriers to the adoption of e-business. This assessment was reinforced with the recent e-business survey of SME on adoption of e-business, which found that the high investment and recurrent cost of technology, and the perceived security risk of the information systems operated within the business remain the most concerning issue for small business owners (Sensis, 2012).

2.4.5 External pressures

Since 1990, there have been a steady number of studies concentrating on the technological and organisational aspects of the framework (Thong, 1999). However, contemporary literature suggests that the adoption of e-business was also responsive to external pressure (Ralitza, 2006) that emanates from customers (Doolin & Ali, 2008; Iacovou et al., 1995), suppliers and the supply chain (Bakker et al., 2008), industry partners (Iacovou et al., 1995), potential employees, and government policies and
regulation (Chitura, Mupemhi, Dube, & Bolongkikit, 2008; Pollard, 2003; Zhu et al., 200).

Most literature reports that external influences (Chong et al., 2009, Chong et al., 2009b; Duan et al., 2012; Ralitza, 2006) are significant factors affecting the adoption of e-business in micro and small businesses. Mehrtens et al. (2001) reported that businesses experience more external pressure from customers rather than their trading partners and suppliers. Bruque-Camara, Vargas-Sanchez, and Hernandez-Ortiz (2004) further commented that customer loyalty to a firm may pressure a business into introducing new technology to improve client service and retain its existing customer base. MacKay et al. (2004) highlighted a perceived social risk factor that did not emerge from the Mehrtens et al. (2001) study, and they argued that voluntary or non-profit organisations are more concerned with meeting social needs than pursuing profits from their commercial activities.

It has also been argued that government policies and regulation play a much more important role in developing countries than in developed countries such as Australia (Chong et al., 2009; Zhu et al., 200). There may be trade-off decisions on the adoption of e-business between the internal readiness of the organisation and the external pressure from the supply chain context (Bakker et al., 2008). In the external environment, brakes act as barriers that impede enterprises in the implementation of e-business and accelerators influence the deployment of technology in the business dynamism over which an enterprise has little or no control of (Begin & Boisvert, 2002).

In businesses that implement leading edge or disruptive technologies, environmental factors, such as competition within the industry or business partner influence, are largely insignificant (Doolin & Ali, 2008). Likewise, accelerators represent opportunities or avenues that favour the adoption of e-business. Chong and Pervan, (2007) in their quantitative research of 115 small businesses in Australia, concluded that government incentives are appreciated by small business in the early stages of adoption; however, government support becomes less relevant when e-business is implemented.

External pressure mainly originates from the supply chain of the business, recently referred to as the value chain, which describes how a business receives raw materials as input, adds value to the input materials through various processes, and sells finished
products to customers (Porter, 1985). Primary activities identified by Porter (1985) include: inbound and outbound logistics, operations, marketing and sales, and services. The support activities include human resource management; technology development, support and procurement. Chong at al. (2009a, p. 13) suggested that “an effective and efficient supply chain will increase the competitiveness and the survival or organisations”. Walters and Lancaster (2000, p. 162) emphasised the intrinsic characteristics of the chain by describing it as “a business system which creates end user satisfaction (that is, value) and realises the objectives of other member stakeholders”. Cook et al. (2001) suggested that the chain needs to be viewed in a holistic manner, not limited to its immediate suppliers but it instead extended to all external suppliers and their channels (Cook et al., 2001, Cooper et al., 1997). Andraski (1998) highlighted the link between each effort made to each of the process along the supply chain. More importantly, the contemporary definition of the supply chain encompasses the flow of information (Cooper et al., 1997) and funds (Metz, 1998) throughout the entire chain.

Iacovou et al. (1995) suggested that partner imposition is one of the essential adoption factors in the context of small businesses. Customer demand and pressure emerged as one of the significant factor affecting the adoption of e-business. It is argued that the adoption was more likely to be higher when business perceived the pressure exerted from their customers to be high (Chong & Pervan, 2007). There are opposite views and inconclusive evidence on how pressure from competitors impacts on the decision-making process. Reich and Benbasat (1990) suggested that under a higher competitive pressure, businesses are forced to assess and implement innovative solutions to gain competitive and strategic advantages over their competitors. In contrast, Chong and Pervan (2007, p. 19) argued that competitive pressure might not influence the adoption decision from a survey sample of 115 micro businesses in Australia once the “inertia to adopt has been overcome”.

The plethora of e-business adoption models is an indication that no model can be accurately used to explain the decision to adopt e-business. The inhibitive factors and barriers on the adoption of e-business have been well documented (Chitura et al., 2008) especially on Australian small business (MacGregor & Vrazalic, 2006). Government
support is considered a facilitating factor; however complicated government regulations are seen as barriers to adoption (Hadjimanolis, 1999). MacGregor and Vrazalic (2006) cited a number of internal and external barriers to adoption, such as limited knowledge of e-business, lack of planning, lack of time, lack of information, lack of finance and resources to hire skilled IT staff, lack of strategic vision, inability to keep up with technology change, and lack of understanding of government regulations. Scupola (2003) found that excessive junk mail, reluctance to alter business processes and workflow, reaction to external access and change of regulations with each change of government are distracting business owners from focusing on their main business.

There is a scarcity of literature on the relationship between micro enterprises and government on the adoption of e-business. As discussed in the diffusion of technology theory (Rogers, 2003), government can be considered a critical component of a social system that surrounds small enterprises. However, as argued by Lundblad (2003), Rogers’s theory of diffusion of innovation fell short of fully describing the interaction between the innovation (i.e. e-business), the adopter (the entrepreneur), the social system (government and the small enterprise peer network), and other influencers of adoption; especially how these units of the theory relate to diffusion of innovation within small business. Lundblad (2003) also identified a gap in the research literature on the need to study how diffusion of technology is spread across small enterprises by the government acted as a change agent and the effectiveness of the government interventions on the adoption of technology by the business proprietors.

Metcalfe (1997) identified the need to learn from the duplication of effort and failure of many technology experiments and the lessons learned to be communicated as necessary components of an effective diffusion process. He further stressed the need for government support at different stages of the diffusion of innovation process. Chong and Pervan (2007, p. 1) conducted a multiple regression analysis on 115 small business in Australia and found seven positive influencing factors: “perceived relative advantage, competitive pressure, trialability of the technology solution, observable benefits to the enterprise, variety of information sources available to business, communication and external non-trading institutional influences”. Chong and Pervan (2007, p. 7) also
analysed the “national factor” in which government assistance and support in funding infrastructure projects and adoption schemes were examined and found it has an inverse relationship with the extent that e-business is deployed. The early adopter appreciated government support more than those businesses that have mature systems already operating in their business. They also found that businesses that are being pressured to implement e-business may tend to deploy e-business limited only to the areas that they are being pressured to. The organisational readiness of a business is the most significant internal factor in influencing business owners to adopt new technologies. External to the business, customers’ demand or competitive pressure are reported to be the two most important factors that may influence the adoption of technology. Despite this, the pressure to adopt may just be transient, depending on the level of technology in the business. The net impact of the support from government on micro business to adopt technology is inconclusive and literature of this external factor on micro business is still scarce. The next section will explore available literature in more detail on the relationship between the role of government and factors that influence the decision to adopt e-business.

2.5 Australian Government Policies, Initiatives and Funding on E-Business

Australian micro enterprises currently contribute to around 20 per cent of the Gross Domestic Product (GDP) and employ approximately 50 per cent of the private sector employment (DIISRT, 2012). Micro enterprises represent 85.1 per cent of the total number of Australian businesses and this composition has remained steady since 2009 (DIISRT, 2012) confirming the important role of micro enterprises in the economy. New South Wales (NSW), the most populous state in Australia, accounted for 33.2 per cent, the largest share of all micro businesses in Australia (DIISRT, 2012).

Micro and small enterprises are a major source of employment in Australia and their synergistic physical and knowledge resources power the national economy and contribute to the social and economic prosperity of the nation. The success and survival of micro and small enterprises are paramount to the economic performance of the country. Adoption of technology is considered one of several measures to expand a
firm’s customer base, improve profit margins or enhance customer service and consequently remain viable and competitive.

Recognising that small enterprises are vital cogs to the economic and social prosperity of Australia, the Australian government initiated several policies and initiatives. The Australian government is not alone in doing this (DIISRT, 2012). In fact, the governments of several developed and developing countries have introduced similar initiatives, noticeably in Canada (Canadian e-business opportunities roundtable, 2002), the United Kingdom (M2 PressWire, 2003), the United States, Singapore and Hong Kong. This strategic view is shared by many governments in Organisation for Economic and Cooperation and Development (OECD) countries especially, in the top ten e-business ready nations. Australia’s ranking has been volatile: it was ranked second in 2001, dropped back to ninth in 2003, then rose to sixth in 2009 and then dropped back to ninth in 2010 (The Economist Intelligence Unit, July 2002, 2009, 2010). Sweden was ranked first in the 2010 survey. According to the 2010 e-ready survey (The Economist Intelligence Unit), Australia’s legal framework and policies to facilitate e-business were considered better than countries such as the United States and Sweden, but they lagged behind those of Hong Kong and Singapore. However, adoption of e-business by enterprises in Australia was trailing behind all those countries.

The Department of Innovation, Industry, Science and Research (DIISRT), now known as AGIMO, has the overall responsibility to formulate strategies to support SMEs including small businesses at the federal level (DIISRT, 2012). The Federal government and some states including NSW have now created a Small Business Commission in each jurisdiction to provide focus on this important sector of the economy. In his research, Clark (2003) reported that the Australian governments’ effort to implement the required infrastructure for the digital economy was quite advanced, in particular, his research mentioned that the Government Business Entry Point, the E-procurement, e-health and e-government initiatives have been successfully implemented and these projects are showing sign of system maturity. The Federal Liberal-National government, in the opposition government in 2013, commissioned the report “The Coalition’s Policy for e-government and the Digital Economy”. The report ascertained that “governments
contribute most by providing the unexciting but essential fundamentals that favour economic growth, robust institutions, macro-economic stability, open and competitive markets, infrastructure and research” (Department of Finance, 2013, p. 6). The next four sections discussed the regulatory framework, funding, standards relevant to e-business and e-government initiatives in Australia and NSW in the context of the National Digital Economy Strategy (NDES). The government recognised two important factors: that micro business owners are usually time poor and money thrift. In NSW, the Small Business Commission has decentralised its advisory business centres to major regional centres with providers that are based along large business centres or universities. The placement of key advisory centres closer to urban and regional business hubs is seen as a positive move by the state government to address the time-poor factor of business owners. However, the challenge remains for government to structure its communication to micro business owners to promote e-business and explain how e-business is relevant to their business (Small Business NSW Commissioner, 2015)

The government has indicated that helping business to reduce the implementation and on-going cost of e-business is one of the main objectives of the Small Business Commission. The government believes in providing accurate, timely, up-to-date information and best case studies will assist micro business in selecting the best solution for their business. All participants in this research nominated information from government agencies is the most trusted source of information and advice. The challenge for government is to advertise and promote the availability of advisory resources widely to the micro business community. The government finds it difficult to locate micro businesses because there is no national database or state database on the nature and location of these micro businesses. ASIC has such a registry of businesses but it is not free to access for businesses and consumers. Businesses may have an entry in the Yellow Pages; however the inclusion of a business name and its details in Sensis’s Yellow Pages, which is now subscription-based, may become less relevant in time as businesses will find other means to publish their business name online. Even though the basic information of a business is maintained free of charge by Sensis at the moment, there is no guarantee that the information will be maintained free of charge in the future.
Stockdale and Standing (2006) discussed in their research the need to support those SMEs which want to be ‘e-enabled’ on a more targeted basis by local, state and federal governments. In 1996, the government initiated the Information Technology Online (ITOL) program which was aimed at raising the e-business knowledge and awareness across several industries and businesses, driving collaboration and encouraging growth in e-business capabilities. In 2001, the government provided funding to accelerate the adoption of e-business by micro and small businesses and to facilitate online access to Government e-purchasing. Software tools and information sources for businesses that wish to embrace e-commerce were procured or developed from this fund. However, the effectiveness of this model of funding was questionable since the rate of adoption of e-business has remained unchanged.

The National Broadband Network (NBN) is the largest government initiative so far to roll out the fibre network to provide faster access and better connectivity to all Internet users. According to the Coalition’s Policy for e-government and the Digital Economy (2003), $5.4 billion has been spent and the 33,600 users it currently serves is excessively costly to the government (Liberal Party, 2013, p. 24).

2.6 Australian Regulatory Framework and Standards

Government policies on encouraging the development of a digital economy are diverse. In some countries, direct intervention from governments is vital (Chong et al., 2009; Zhang and Okoroafo, 2014) but in other economies, success has been mixed (Duan et al., 2012; Pickernell et al. 2012; Pollard, 2003). In Australia, several Acts have been introduced by the Federal government to facilitate the implementation of e-commerce in all industry sectors. In 2011, the then Labor government released the National Digital Economy Strategy and nominated a number of quantitative targets on broadband accessibility, online activities with government through e-government, and implementation of e-business and e-Health (Department of Finance, 2013).
Increasingly, business transactions are exchanged electronically and their legality is required to be upheld in Court. The Electronic Transaction Act (ETA) was introduced in 2000 to encourage and facilitate the use of electronic communications between government agencies and businesses and the community. The ETA granted legal status to electronic transactions, making them equivalent to paper-based transactions. To ensure a national approach and consensus to electronic transactions nation-wide, the federal government worked closely with the State and Territory governments to develop the uniform Electronic Transactions Bill 2000. In April 2000, the Attorney-General announced that all jurisdictions nation-wide had endorsed the uniform Bill (Australian Government, 2015a).

Cybersecurity has been identified by a report on National Strategies and Policies for Digital Identity Management in OECD countries as one of the two key strategies for Identity management for all OECD countries (Bernat, 2011). The report explained that Australia is in the final stage of development of a national identity management system which covers registration, technical interoperability and security, as well as privacy matters (Australian Government, 2015b).

Some other relevant Acts have either been amended or introduced. In 2008, the National E-Authentication Framework was developed to promote the use of electronic credentials in business to governments and e-government (Bernat, 2011). As more personal information is solicited and captured by websites, and information can be kept without the consumer’s consent or knowledge, the government has introduced the Privacy Amendment (Private Sector) Act 2000. It stipulated that private organisations with an annual turnover of more than three million dollars will need to comply with ten National Privacy Principles which regulate the way these businesses collect, store, process and disclose personal information of their clients to other parties. This Act complements the Privacy Act 1988 which applies only to commonwealth departments and Australian Capital Territory (ACT) government agencies. Other Acts that are relevant to e-commerce are the Copyright Act 1968, the Trade Practices Act 1974 and the Australian Securities and Investments Commission Act 1989. The NSW government has

One of the major concerns of the consumer as well as of the small business’s proprietor/manager is the security aspects of the computer system (Sensis, 2012). The Cybercrime Act 2001 makes it an offence for people to use a computer to hack, spread computer viruses, vandalise websites or generate denial of service attacks. In 2003, Australia was the first country to introduce a tough anti-spam legislation (Australian Government, 2015a). The Spam Bill 2003 was designed to provide clear guidelines on online marketing activities while at the same time announcing heavy fines for spammers originating in Australia (Australian Government, 2015b). In 2013, the Australian Cyber Security centre was established to act as a sole agency to investigate and coordinate cyber issues relating to government and industry (Business Monitor International, 2013).

Cloud computing is gaining momentum over the traditional dedicated data processing centres where data servers are hosted. Increasingly, government and businesses are no longer required to host their data and processes locally but can utilise cloud computing to share data processing and storage with other organisations with the help of the Internet. The federal government is implementing a six-year plan to migrate government agencies’ computing infrastructure and processing capability to a cloud-based environment. In 2013, the Australian Communications and Media Authority (ACMA) released an option paper discussing the need to introduce regulations on security, privacy and access to data with the introduction of cloud-based computing. Nevertheless, the issue is still under consideration by the agency (Business Monitor International, 2013).

Enacting new and amended Acts is necessary to allow business to operate confidently in the digital age. However, the Internet has no physical boundary and laws can be circumvented to avoid prosecution. One also questions the effectiveness of these laws if the perpetrator is not an Australian citizen and the offence is committed overseas, such as hackers logging on to an Australian website from places where Australian laws have
no jurisdiction, or non-delivered goods that are purchased from an overseas-based seller. One notable legal case was the Gutnick vs Dow Jones defamation case in which the High Court of Australia upheld the decision for Gutnick to sue the New York’s based Dow Jones for defamation through their Internet-based publication of the Barron’s magazine in 2002. The High Court's ruling has significant legal ramifications since it effectively allows defamed plaintiffs in Australia to sue for Internet-based defamation against any person or organisation, irrespective of their location (High Court of Australia, 2012).

The adoption of e-business has opened opportunities for all business to expand their global reach. Trade is no longer restricted to location, which is especially important for micro businesses. Consequently, regulations are required to be implemented and enforced worldwide and across a number of nations. Zapinta (2007) highlighted the degree of complication when online providers are no longer based domestically. Since 2012, Australia, the United States and the European Union are collaboratively working on a services-only free trade agreement known as the Trade in Services Agreement (TiSA) (DFAT, 2014). The TiSA, when in place, covers financial, air and maritime transport, professional and ICT services (including telecommunications and e-commerce), immigration, government procurement, and new rules on domestic regulation to remove regulatory settings that may operate as a barrier to trade in services.

Dibakar, Umesh, Shefali, and Gupta (2011) highlighted the importance of software and integration standards in the diffusion of technology. Also, Alzougool and Kurnia (2008) have focused on the readiness and availability of industry standards and their importance in boosting business owners’ confidence in adopting e-business. Currently, the Australian government is developing or implementing standards for registration, enrolment, security for Proof of Identity documents, implementing the National Document Verification Service (VDs), maintaining the integrity of identity data, and ensuring the interoperability between the Electronic Authentication and Biometric data (Bernat, 2011).
Recognising the importance of technical interoperability between systems of different agencies, the Federal government, along with its State and Territory counterparts, have recommended the use of open standards such as the OBI (Open Buying on the Internet) for data exchange between suppliers; the ABN (Australian Business Number) for Australian organisation identification; the DUNS (Dunn and Bradstreet Data Universal Numbering System) for international company identification; UN/SPSC (Universal Standard Products and Services Code) for detailed product and service classification; and the EAN (European Article Number)/UCC Barcode for article identification (the Australian Procurement and Construction Council, 2002); XML: Extensible Markup Language and ebXML: (electronic business Extensible Markup language) for consistency and access between suppliers’ catalogues. Work is well underway to define a standardised web accessibility through the National Transition Strategy across all government websites (AGIMO, 2012).

In a commercial context, the primary role of government is to establish the legal framework outlining the responsibilities and rights of business owners, to provide advisory service and to introduce measures to help reduce the risks involved in starting a new business. These government interventions can be two-fold. On one hand, the government procures resources (Doutriaux, 1988; Pollard, 2003), reduces tax burden or introduces tax incentives (Harrison & Mason, 1988), provides business development assistance and opportunities (Phillips, 1993; Pollard, 2003) and sponsors export assistance programs (Reynolds, 1997) to encourage business owners to adopt e-business. On the other hand, burdensome procedural requirements or over-regulation may impede entrepreneurial activity (Dana, 1990) and cyclic changes in government policies may reduce entrepreneurs’ interest in developing long-term growth strategies for the business (Tan, 1996). Terlaak (2002) found that excessive pressure to adopt standards could diminish any value that standards may bring. The next section discusses the leadership of the federal and the state governments on e-government initiatives.

2.7 Government Factors Affecting Adoption of e-Business
Based on factors outlined in the theory of diffusion of innovation in Section 2.3.1, there has been a small but increasing amount of academic literature mentioning the role of government in influencing the adoption of e-business in SMEs (Chen & Holsapple, 2013; Chong et al., 2009; Clark, 2003; Duan et al., 2012; Pollard, 2003). All governments in the OECD recognise the vital role that micro enterprises play in the dynamic growth of the national economy and they have made SMEs a central element in the nation’s economic policies in the digital age. In particular, there is literature that points out the fact that government policies and regulations have positive impacts on promoting and facilitating the innovation diffusion process within small enterprises in Australia and abroad (Chong, 2008, Stockdale & Standing, 2006; Zhang & Okorafo, 2014). Pollard (2003) and Chong et al. (2009a) reported that government intervention does not play a significant role in the adoption of e-business within small enterprises. AGIMO reported a decline in B2G activities from 38% to 35% between 2009 and 2011 (AGIMO, 2011).

In the literature prior to 2001, government pressure or polices had not been mentioned as an accelerator or a brake to the adoption process. Sandy Chong’s longitudinal study of the impact of government in Australia on adoption of e-business in 2001 and again in 2008 (Chong, 2008) revealed that SMEs, and in particular small businesses, have expressed an overall disappointment on all government initiatives and policies with respect to the encouragement of owners to adopt e-business (Chong, 2008). Nevertheless, Pollard (2003) reported a limited success of government sponsored programme. In fact, the majority of the responding firms in the study were unaware of the existence of these schemes. Chong argued that firms that have already acquired a high level of e-business adoption may have done independently without the support of the government. Her 2001 study reported that those firms which seek governmental support are clearly not the innovators or self-starters and are at the lower state of the e-business adoption ladder; and according to Stockdale and Standing (2006) these SMEs are either content to maintain the status quo, or demonstrate a lack of confidence and commitment to adopt technology. In 2008, it was subsequently found that the adoption of technology in Australian small businesses is influenced by the degree of support from governments, communication methods and the external pressure exerted from customers.
and suppliers (Chong, 2008). In the same study, Chong (2008) also discovered that they were different attitudes towards adoption of technology from Australian small businesses compared to their Singaporean counterparts (Chong, 2008). Some firms in Australia are more likely to adopt e-business when experiencing competitive pressure exerted upon them by their trading partners, or when attaining assistance from the Government; this finding appears to be in line with the Institutional Theory discussed in Section 2.3.2. Chong (2008) argued that firms in Australia tend to experiment or implement new business practices independently of government assistance. Nevertheless, governments could do more to advance the adoption of e-business (Chong, 2008). It was also found in New Zealand that the role played by the government is increasingly important since small enterprises themselves may not be aware or have the exposure to the type of e-business technology that is relevant for their business (Al-Qirim, 2006).

In 2005, Gengatharen and Standing (2005) studied a small number of government-supported SMEs in Western Australia and concluded that the positive effects of government in supporting small business were inconclusive. Through their theoretical framework, significant factors affecting the success or failure of SMEs were investigated, but their findings did not answer the question of how success of a government-supported SME can be measured. However, their study outlined a number of factors that are useful for consideration: motivation and focus of small business owners, financial resources, competence of the management team and their staff; needs and pressure from consumers, business partners and industry, government support and incentives, size of the business, and readiness of the firm.

Bunker and Yin (2005) further added that the government is exerting minimal influence in the process of small businesses’ e-business adoption. Their study did not find any evidence to suggest that the government plays or could potentially play a role in the adoption of e-business by small businesses. This finding highlighted what other researchers have observed using institutional theory: that is, that a business will only adopt a new practice when there is evidence that this new practice brings about positive changes for the organisation, not because of government pressures. However, they
believed this aberration from the literature may be caused by the small number of cases investigated in their study. However, Looi (2005) found through his survey of 184 SMEs in Brunei that government support and security of the Internet are the 5th and 6th most important factors in the adoption of e-business process. Ronil (2002) argued otherwise, claiming that the identification of the actual barriers to small business e-business adoption will lead to better methods to overcoming the adoption barriers. He found that economic, not technological barriers are the most important impediments to small business’ e-business adoption. Therefore he suggested that most government policies should be redirected to overcome economic barriers rather than technological barriers.

Al-Qirim (2006) identified a number of adoption factors in his research of 324 small enterprises’ in Auckland, New Zealand. He proposed that governments should fulfil three main roles: leadership and communication, building capacity and enabling regulatory environment. These roles include the establishment of the regulatory framework, the promotion of the small business’s awareness of the perceived benefits of e-business, encouragement and fostering the small enterprises’ spirit of innovation, and addressing the performance of technology vendors. He found that there is a gap between the service and published contribution by the government, and the desire of small business to adopt e-business.

Current literature recognises the role of governments in the diffusion of e-business process, however, there has been little formal research on the topic that examines holistic factors that impact or impede the adoption process. Government support is often mentioned in literature but it often lacks of the detailed scrutiny that can deliver a clearer picture of the decision-making process. In Chong and Pervan’s (2007) research, perception of government support was limited to the amount of training and seminars, advisory service, financial and human resources. Interestingly, Ramsey and Bond (2007) proposed a model using a projective technique to evaluate the degree of success of government policies. The model was used to assess attitudes of micro business of Northern Ireland, the Republic of Ireland and New Zealand with respect to government e-business policy. However, their research concluded that further assessment of the

Jutla et al. (2002) proposed a more comprehensive government support e-business (GSE) model with six categories of e-business metrics and measures to assess a positive e-business readiness climate. The six components are: knowledge and innovation-based processes; e-government leadership; regulatory, trust and financial structure; content infrastructure, human infrastructure; and communications and information systems infrastructure. Each of these components will have defined metrics and measures. Jutla et al. (2002) explicated that the e-government metric represents governments’ effort in showing SMEs and the nation that governments are also adopters and leaders of e-business. All levels of governments are encouraged to go online providing government-to-citizen and government-to-government services but they need to put in place an interoperability framework to achieve a higher level of automation and integration of heterogeneous systems used by different governmental agencies.

According to Jutla et al. (2002), regulatory, trust and financial structure refer to the common regulatory and legislation framework and policies that are designed to support micro businesses in conducting e-business. This finding is consistent with the institutional theory mentioned in Section 2.3.2, which suggests that government regulations are amongst the key and common drivers in encouraging businesses to adopt new practices. The Internet has significantly increased customer reach for the SMEs, however, it is borderless and several issues need to be addressed such as taxation, security of data transmission, authentication, privacy, insurance and local legal jurisdiction. Micro businesses are often more trusting than their larger counterparts and this trust can sometimes lead to undesirable outcomes for business owners. Contractual arrangements between trading partners, non-disclosure agreements for employees and partners, and effective and more cost effective dispute resolution mechanisms are some of the key issues that governments have to address. Jutla et al. (2002) suggests a role for
governments to establish a financial structure as the mechanism to conduct B2B transactions, public key infrastructure, digital certificates and electronic signatures. Governments should also address uniformity and consistency of government regulations nation-wide, between states and between different countries.

Content infrastructure refers to the aggregated on-line and off-line resources that are published by the government and are available to support the authentication of a business and the promotion of its business’s products or services. It also deals with easier access to information, better use and retention of knowledge, and standards that come with these resources. Burgess et al. (2009) found that consumers tend to trust information from government-backed websites more than social networking websites such as Facebook.

Human infrastructure deals with programs aiming at creating a skilful workforce. These efforts include national and state education programs that train government’s Tertiary and Further Education (TAFE) colleges and universities students on ICT skills and provide more places for tertiary and post-graduate studies. The inclusion of this parameter in the research helps to address any concern that a business may be facing (this parameter is discussed in the task-technology fit theory in Section 2.3.3). Communications and information systems refer to the rollout of network and telecommunication infrastructure such as broadband and wireless technologies and services. It also covers the availability of Internet Service Providers (ISP), the speed and cost of Internet access, the applications that SMEs use such as Customer Relationship Management (CRM), knowledge management applications, security applications and others. Chong (2008) found that in any case, increasing governmental support could have a significant impact and it could lead to greater business confidence in the adoption and implementation of technology. He reported that educational support was found to be the most useful form of government support and business owners have high expectations that governmental assistance would also be provided in the form of governmental advisory support. This finding further emphasises the role of communication and staff training in a business to counter and addresses any resistance
to the implementation of technology (as discussed in the User-resistance theory mentioned Section 2.3.4).

The literature is still inconclusive about the effectiveness of the role that government plays in the adoption of e-business. Alzougoool and Kurnia (2008) cited inconclusive findings on the impact of support from government and technology vendors on the adoption of e-business, while at the same time confirming significant influence on adoption due to proactive government’s role national infrastructure, regulatory framework and public administration. Research in Canada (Infinedo, 2011) found that government support was insignificant; in contrast, Zakaria and Janom (2011) found that government support affected the smooth implementation of SMEs in Malaysia. Alshamaila et al. (2013) did not find evidence of government influence on the adoption of cloud-based technology in SMEs in the north east of England. Given the inconclusive and highly variable results of research outcomes concerning the role of government as the inducer and the enforcer of the adoption of e-business, a more in-depth review of literature on the role of government as change agents (Rogers, 2003) is now warranted.

2.8 E-government

E-government is a government’s effort and tools to transform, overhaul and revitalise government bureaucracy and public management to deliver higher productivity, integrity, transparency and accountability to its citizens’ civil services (UN Economic and Social Affairs, 2010). E-government is also the government’s effort and priority (Bernat, 2011) in demonstrating to SMEs and the nation that governments lead by example and adopt e-business. All levels of governments have gone online to provide government-to-citizen and government-to-government services and information sharing. Implementing e-government will be a difficult task, and considerable effort from the government as a whole will be required. A similar transformation of business processes at a much larger scale for government agencies will take place in order to implement e-business. For example, government agencies and institutions must acquire or upgrade their ICT infrastructure, purchase or develop Internet-enabled business applications, software and redesign the work flow to support new processes (Clark, 2003). New applications will have to integrate and interface with existing legacy systems and work
seamlessly as a fully integrated system to support the government agenda in response to ongoing changes. Clark (2003, p. 389) stated that “e-government is not a destination, but an on-going process” and governments at all levels should be proactive at all times to seek opportunities to improve their business workflow processes and enhance their computer systems.

There are other endogenous and external issues that must be considered, such as human resources issues, budget, resource, equity, legal and political issues. Since 2003, some developed countries, including Australia, have progressed e-government to another level, which included the deployment of government e-services to mobile platforms in conjunction with the deployment of high speed broadband services. This initiative shifted the government’s focus from improving ICT services and connectivity between government systems and its users to a more citizen-centric practice (UN Economic and Social Affairs, 2010). Countries like Australia are addressing the disconnection between disparate government supply and procurement systems, as well as between governments and their citizens, and are promoting and facilitating e-participation, which encourages its citizens to provide feedback through online polls and forums (UN Economic and Social Affairs, 2010). Oni et al. (2014) highlighted the potential benefits of e-participation in fostering e-democracy as civil services managed by governments to facilitate greater participation of their citizens in government activities through a digital or electronic means.

It was found that trust and relative advantage are pertinent factors in implementing e-government (Carter & Weerakkody, 2008). Governments need to put in place an interoperability framework to support a higher level of automation and integration of heterogeneous systems of different agencies, harmonising appropriate organisational culture across all government agencies and re-engineering its business processes (Clark, 2003). It was also reported, in the UN’s E-government Survey (UN Economic and Social Affairs, 2010), that the degree of success of the implementation of e-government hinges on the emphasis governments place on the importance of innovation over its risk mitigation strategies.
The federal and state governments have been running awareness campaigns at different points of time, and the NSW government published an ‘e-business guide’ to help NSW businesses doing business online. The federal government is also active in encouraging suppliers to trade electronically with Commonwealth agencies. Australia is also formulating its identity management system to combat theft or misuse of identities for terrorist or fraudulent activities, and the use of citizen digital credentials in the decentralised citizen registration policy (Bernat, 2011).

The government has set up a single log-on for all government agencies (Bernat, 2011), the Online Solutions Exchange (SOLX) to allow businesses to register their products and services that may support Commonwealth Government’s agencies in meeting their electronic service delivery and other online needs. The Commonwealth Electronic Tender System (CETS) enables potential suppliers to access selected Commonwealth Government bidding opportunities, downloading associated documentation and submitting tender responses (NOIE, 2002). The government also introduced “invoiceless trading” to streamline the business procurement process. The Australian Tax Office (ATO) has made several rulings with regards to the Recipient Created Tax Invoices (RCTIs) to allow governments agencies to deal with some suppliers. The government also stopped the use of cheque for payment of invoices in 2000; instead, payment is electronically credited to a supplier’s nominated bank account.

It was suggested that implementing e-government will showcase the perceived benefits of e-business to micro enterprises owners and, at the same time, steer them towards the adoption of e-business if they wish to participate in the government procurement cycle and trade with government agencies (Duan et al., 2012). Obviously, this imitative is likely to influence the owner/manager to adopt e-business. At the same time, the decision to adopt e-business by micro businesses may propagate the use of e-business to other external stakeholders such as their partners, distributors and suppliers. Clark (2003) believed that a successful implementation of e-business will lead to the implementation of i-government (intelligent-government) in which application systems are intelligently designed, adaptively and seamlessly integrated across all government agencies’ websites. K-government, or knowledge-government, is the ultimate form of
government, whereby the whole-of-government’s application systems are developed as complex adaptive systems to encompass almost all interactions between the government and its citizens. A k-government will also facilitate e-participation with a view to promoting e-democracy, a form of democracy realised via the internet such as voting online, online feedback from citizens and all civil services that governments provide via the Internet (Oni et al., 2014). Clark (2003) suggested that leading countries in e-government share a number of common attributes which include: effective relevant e-business and e-government policies, citizen-centric design of systems and portals, and sufficient physical and financial resources to support their e-government initiatives.

The current Liberal government projected a different view and its ideology has been against “policy intervention to build technology-intensive economies” (Liberal Party, 2013, p. 6). In the Coalition’s Policy for e-government and the Digital economy, the government described its role as: “contribute most by providing the unexciting but essential fundamentals that favour economic growth – be supportive by grasping some recurrent features of digital markets – such as strong network effects, high switching cost or the challenge of verifying identity” (Liberal Party, 2013, p. 6). The report acknowledged “a preference for private rather public ownership and provision and competitive markets”. Nevertheless, the report highlighted the aggressive drive in e-government by the US and UK governments in contrast to the more unobtrusive style of Scandinavian governments.

A key milestone in developing Australia’s e-government strategy was the establishment in 1997 of the National Office for the Information Economy (NOIE), now AGIMO, to develop, coordinate, and oversee broad policies relating to the development of a regulatory and legal framework to support electronic commerce and the creation of a physical infrastructure environment for online activities. AGIMO’s role is to oversee and facilitate the implementation of new technology in government agencies to ensure a consistent approach in domestic and international forums, and to influence the emerging international standards for electronic commerce (Clark, 2003). In the UN’s survey of e-government in 2010 (UN Economic and Social Affairs, 2010), it was reported that the federal government has introduced new features on the government’s website to include
a Government Search option to retrieve information from all states and local
governments, together with smart electronic forms for Australians to enrol to vote
online and make real-time complaints about their governments.

While it is not conclusive that government resources and effort have actually influenced
the adoption of e-business within small business, extant literature suggests that there is
evidence that governments across the world, especially in developed and developing
countries, are implementing or working towards the implementation of an e-
business/on-line framework to encourage small businesses to adopt e-business. Already,
federal and state governments have been leading the charge in the implementation of e-
government (Clark, 2003). The next section will explore in more detailed factors that
affect the adoption of e-business in micro business.

2.9 Measurement of Program Effectiveness

Fostering the adoption of e-business amongst micro enterprises can be seen as
implementing a program. The program performance is defined as the resources used in
the program, its activities, the outcome and impacts of program activities (Wholey,
1983). An effective program is a program in which the policy makers and the managers
agree on “a set of realistic, outcome-oriented program objectives, performance
indicators and performance targets” (Wholey, 1983, p. 10). Stimulating high
performance via pilot projects and timely feedback on performance, on-going
communicating performance and value, introducing individual or group incentives to
award high performance are some key activities to maintain credibility and
effectiveness of a government program (Wholey & Newcomer, 1989).
3. RESEARCH METHODOLOGY

This section examines the relevance of four key research methodologies, positivism, constructivism, critical theory and realism paradigms, which are utilised by this research. In this study, realism is identified as the most appropriate paradigm to be used to guide this research and its relevance and rationale for its selection is discussed below.

3.1 Selection of Theoretical Paradigm

Positivism, constructivism, critical theory and realism are four fundamental belief systems embodying philosophical assumptions that can be utilised by researchers to explore their research matter (Guba & Lincoln, 1994). These assumptions comprise of three key elements: ontology or the perceived reality, epistemology or relationship between the researcher and the reality, and the methodologies used by the researchers. The philosophical assumptions for these alternative research paradigms are summarised in Table 2 below.

<table>
<thead>
<tr>
<th>Philosophical Assumptions for Alternative Research Paradigms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ontology</strong></td>
</tr>
<tr>
<td>Reality is ‘real’</td>
</tr>
<tr>
<td>Reality is a single apprehensible external entity which can be measured, assessed and classified</td>
</tr>
<tr>
<td><strong>Epistemology</strong></td>
</tr>
<tr>
<td>Researcher is separate from the reality</td>
</tr>
<tr>
<td>Can obtain hard, objective knowledge on the reality</td>
</tr>
<tr>
<td>Findings are true</td>
</tr>
<tr>
<td><strong>Methodologies</strong></td>
</tr>
<tr>
<td>Experiments or surveys</td>
</tr>
<tr>
<td>Mainly through dialogues and consensus</td>
</tr>
</tbody>
</table>

Table 2: Philosophical Assumptions for Alternative Research Paradigms
Source adapted from Guba and Lincoln (1994, p. 109); Perry, Riege, and Brown, (1997, p. 4) and Carson et al. (2001, p. 6)
The next section will discuss the advantages and disadvantages, as well as the relevance of each paradigm, with respect to this research.

### 3.1.1 Positivism

Positivism (Table 2, column 1) asserts that reality in natural and social sciences is composed of discrete variables that can be quantified, measured and classified using objective methods (Guba & Lincoln, 1994; Neuman, 1994). In this paradigm, information and accumulating facts are the sole mean to establish an explanation (Baker, 1999) of the reality in which variables operate according to natural laws as those used in scientific domains. The primary role of the research enquiry is used for deductive theory testing. The epistemology of this paradigm requires researchers to observe, collect, measure, classify and analyse data at a distance in a totally value-free and theory-free mode, so that of the social world that is the object of study is seen through a “one way mirror” (Guba & Lincoln, 1994, p. 110). In this paradigm, researchers use well-structured experiments and surveys as instruments to verify theoretical hypotheses.

While this paradigm focuses on measurement and analysis of causal relationships between multiple variables within the studied phenomenon (Easterby-Smith et al., 1991; Perry et al., 1999; Ticehurst & Veal, 2000), using a positivist paradigm for this research is not ideal since the dynamism within a micro enterprise means that the object of study diverse, complex and chaotic at times. The relationship between the key adoption factors and the government’s key stimulators cannot be modelled adequately in a linear, systematic and deterministic manner (Bygrave, 1989). Moreover, micro businesses’ entrepreneurs or managers who were interviewed for this research would reflect their own perception or belief (Robson, 1993) as part of their reality. These perceptions are considered as non-observable phenomena which constitute a significant source of data for this research, and cannot be handled by positivist methodologies since they require the research to be directly observable and quantifiable (Guba & Lincoln, 1994). Finally, in conducting the study, the interaction between the researcher and the entrepreneurs/managers of the SMEs makes it hard to assume that the researcher is undertaking observation of the issue with a value-free manner; staying remote in a
totally value-free mode in this research may not be practically possible (Guba & Lincoln, 1994).

3.1.2 Constructivism

Constructivism (Table 2, column 2) infers that there are multiples realities which are based on beliefs, feelings and experience of individuals (Guba & Lincoln, 1994; Perry et al., 1997). The researcher in this paradigm is a keen participant and findings are essentially created by constructing interactions between the researcher and the respondents (Guba & Lincoln, 1994; Perry et al., 1997). In this paradigm, qualitative techniques such as dialogues and consensus are mainly used to investigate the beliefs of the individual respondent (Batonda & Perry, 2003; Guba & Lincoln, 1994).

This paradigm is largely unsuitable for this research since the perception of Australian micro business on government-induced factors influencing the decision to adopt e-business within their business can only be carried out if the researcher remains as objective and remote as possible during the course of this research and the multitude of variables will not be adequately captured as data variables in qualitative methodologies. Perry et al. (1999, p. 18) also suggested that this methodology “is rarely appropriate for business research because the approach excludes concerns about the clearly real economic and technological dimensions of business”, the very two factors that are pivotal in the adoption of e-business.

3.1.3 Critical Theory

Critical Theory (column 3, Table 2) assumes that reality is based on “historical routines” and is shaped by “social, political, cultural, economic, cultural, ethnic and gender values” (Perry et al., 1999, p. 17). Researchers become actively involved with those being researched. In this paradigm, researchers use their interpretative ability to create a connection between the researcher and the subject, with the aim to “transform ignorance and misapprehensions (of the respondents) into a more informed consciousness” (Guba & Lincoln, 1994, p. 105). This paradigm is not suitable for this
research since the aim of this research is to examine current perceptions of micro business on the adoption of technology.

3.1.4 Realism

Realism (Table 2, column 4) combines elements of both positivism and constructivism. This research paradigm is suitable for “searching albeit necessarily imperfectly, towards an understanding of the common reality of an economic system which many people operate independently” (Perry et al., 1999, p. 18). Realism in this research represents a single world in which market forces, customers, suppliers and other external forces fuse into a single environment in which micro business operate.

Realists acknowledge that there is likely a difference between the real world (positivist) and the perceptions (constructivist) held by the small business entrepreneurs. Researchers who select the realist methodology accept that businesses operate in a single economic, social and technological environment but they also acknowledge that this environment is imperfectly seen and experienced by entrepreneurs who make up that reality. This paradigm allows the researcher to explore and discover this imperfect environment, and to uncover the perception of micro enterprises on government-induced factors that impact upon the dynamism of a business; which ultimately leads to their adoption of e-business. In this paradigm, the researcher conducts the research process in an objective manner although the researcher can be completely “value-dependent but not value-free” (Perry et al., 1999, p. 18).

3.2 Selection of Methodology within the Realism Paradigm

Within the realism paradigm, a research study can be conducted using either qualitative or quantitative methodologies (Guba & Lincoln, 1994) or a methodology like case studies that are based on a combination of both (Yin, 2014). Using quantitative methodologies alone was deemed to be less appropriate for this research for several reasons. Firstly, data to be captured are principally more verbal rather than numerical (Leedy, 1993, p. 145) since the object of study cannot be fully captured as discrete data and it will have “many more variables of interests than data points” (Yin, 2014, p. 17).
Secondly, micro enterprises and the internal and external forces impacting upon their environment is a complex dynamism. Using a quantitative methodology in this case cannot adequately model and capture the complexity of the micro business’ dynamism (Carson & Coviello, 1996; Perry et al., 1997). Thirdly, in this case, a quantitative methodology assumes that the dependent variable, the adoption of e-business is known with zero measurement error (Perry et al., 1997, p. 6), a condition which is not achievable in this study.

Yet qualitative methodologies are suitable to examine a subject characterised by two attributes. Firstly, there is a high degree of diversity and complexity of the subject, which in turn cannot be adequately modelled by pure mathematical and statistical techniques (Parkhe, 1993; Perry & Coote, 1994). It deals with subjectively constructed rather than objectively determined subjects of study. Secondly, the subject has a relatively under-developed theoretical base, in which neither phenomena nor relationships between them are well understood (Bonoma, 1985; Parkhe, 1993; Perry & Coote, 1994). The methodology is relevant because it supports the belief that it is more valuable to a researcher to examine an organisation through a few individuals’ in-depth experiences and situations, however unrepresentative it may be; rather than trying to understand the organisation through a limited understanding of a larger representative group (Ticehurst & Veal, 2000).

Unlike the statistical outcomes of quantitative methodologies that are used to test a theory, the findings of research using qualitative methodologies are used to build a theory, or to identify a phenomena for further research. In this research, qualitative methodologies were found to be appropriate to explore this complex issue in depth, in order to gauge micro business owners’ perceptions when faced with a decision to adopt e-business. A multiple-case studies methodology was used to conduct this research. The following section set out the justification for this selection.
3.3 Justification for a Case Study Methodology

3.3.1 Definition of a Case Study

Case study is defined as a “research strategy that focuses on understanding the dynamics present within single settings” (Eisenhardt, 1989, p. 534). It describes a situation or phenomena over time and provides a comprehensive description of the phenomena.

Yin (2014) defined case study as

an empirical study that investigates a contemporary phenomenon in depth and within to real world context, especially when the boundaries between phenomenon and context may not be clearly evident. (p. 16).

A case study methodology is predominantly a qualitative methodology because this methodology provides researchers with research techniques to examine various social science situations. The examination of complex and dynamic social situations can be more effectively observed and researched using a qualitative methodology, since the qualitative research process offers an open, flexible and experimental approach, and is suitable to situations where the subject of research is interpretative, being field-focused (Eisner, 1991).

3.3.2 Justifications for a Case Study Research

In this research, a case study methodology offers an opportunity to explain causal links between real-life phenomena that are too complex for survey or experimental methodologies (Yin, 2014) which can lead to inconclusive results (Bonomo, 1985; Parkhe, 1993). Research on the perception of micro business owners that impacts on the decision to adopt e-business satisfies the two conditions required for case study to be selected as discussed by Yin (2014), it requires an in-depth investigation to be conducted to record viewpoints of the micro business entrepreneurs (Feagin, Orum, & Sjoberg, 1991); and it allows the researcher to be selective, focusing on one or two issues that are fundamental to understanding the system being examined (Tellis, 1997). Case study research also appears to satisfy the three tenets of the qualitative method:
describing the phenomenon, understanding it and explaining it (Tellis, 1997). Case study enables the researcher to explain the phenomenon rather than measure and evaluate it.

Yin (2014) also notes that case studies are appropriate when the research seek answers to “how” and “why” questions. Case study research is the best methodology to use for this research since it allows for the investigation of the broad research questions with a view to identify external perceptive forces that exist and interact within a micro enterprise. These combining forces will shape the decision making process of business owners to adopt e-business as a critical tool for the business.

Furthermore, where current theory development relevant to the research is limited, the use of case study methodology is an appropriate strategy for theory generating. The information obtained from the research could be used as the base data for theory building, which in turn that might be further examined through other methodologies such as quantitative methods. Yin listed recommendations for conducting exploratory, explanatory, and descriptive or meta-evaluation case studies using single or multiple-case studies (2014).

To undertake descriptive case studies, the researcher is required to use a descriptive theory (Tellis, 1997), or describe an intervention or phenomenon in a real-life context in which the phenomenon occurred (Yin, 2014). The use of a case study methodology was not appropriate for this type of research since the focus of the research is on the perception of micro business entrepreneurs towards the adoption of e-business, this phenomenon is complex and not easily described by a clear set of theories. Meta-evaluation study was considered inappropriate for this research since it is used to study an evaluation study. Explanatory case study methodology was deemed suitable for this research since it aims to understand and explain the presumed causal links, and does not attempt to prove or disprove a theory’s propositions. Stiles (2003) argued that the use of a realist perspective allows the researcher to establish a clear understanding of the research questions due to the use of both deductive and inductive considerations and existing theory to prove the propositions.
3.4 Criteria for Judging Quality of Case Study Research Design

It is important in any research that the integrity and the validity of the research are upheld. To ensure the quality of the study, Yin proposes four tests: construct validity, internal validity, external validity and reliability (2014). The following section outlines measures taken in response to each of the four tests proposed by Yin.

3.4.1 Construct validity

Construct validity is the establishment of “correct operational measures for the concept being studied” (Yin, 2014, p. 46). This test ensures that constructs and audit trails are properly developed and all elements of research from research problem, research questions to data gathering and analysis are closely linked together. Construct validity has been a source of criticism of case study research because of potential investigator subjectivity. Yin (2014) proposed three remedies to increase the validity of the construct: using multiple sources of evidence, establishing a chain of evidence, and having a “draft case study report reviewed by key informants” (Yin, 2014, p. 47).

In this research, constructs were developed based on the literature review and, where available, data was collected from multiple sources to validate data. Besides the interviews with micro enterprises entrepreneurs or managers, and a government representative; secondary data was also obtained from documentation published by the ABS, public information on various government websites on e-business and Sensis to cross-check with the primary data. To ensure the construct validity of this research, a two-step test was developed, as suggested by Yin (2014):

1. Identifying specific variables of this research – in this context, understanding the perceptions of Australian micro business on government-induced factors influencing the decision to adopt e-business were specified;
2. Demonstrating changes in the selected variables by using four major key metrics framework proposed by Jutla et al. (2002) in the government support e-business (GSE) model mentioned in the literature review section.
Chain of evidence was maintained to ensure that data presented in the case study report can be traced back to the data collection process. It was maintained by ensuring that:

- Sufficient citations were made to the relevant portions of the case study database;
- Circumstances under which the evidence was collected were recorded including time and place of the interviews;
- Consistency of these circumstances with the specific procedures and questions contained in the case study protocol was always observed;
- Links between the content of the protocol and research questions were maintained.

Patton (2002), as well as Healy and Perry (2000), advocates the use of triangulation to strengthen the validity of the research design. The process for triangulation as proposed by Yin (2014) was used to:

- Achieve data triangulation by obtaining data from several sources, for example: interviews with the business owners, information published by different levels of governments, and an interview with a government representative;
- Ensure investigator triangulation by having an external consultant present in the interviews and read transcripts of interviews; and
- Ensure that the research questions were investigated from several perspectives, for example, qualitative and quantitative methods.

Normally, a focus group should be conducted after data is collected from the interviews to provide an opportunity for the researcher to verify that key outcomes of the interviews and reports from the focus group are generally in support of each other. Burt (2005) argued that depending on circumstances, opinions from different sources may not necessarily be independent of each other but they may merely echo one opinion. Fielding (2012) commented that triangulation does not necessarily enhance validity but it may extend the scope of understanding. Fielding (2012) cited a successful research project in the UK where the researcher attempted to investigate the causal link between applicants of a tribunal and its success in court. He examined data collected by a survey of all tribunal applicants and the result was triangulated with an interview of the tribunal
members. In this research, an interview with a senior officer of the NSW Small Business Commission was conducted and the researcher was able to collect more in-depth and relevant data normally not available on the Commission’s website or in publications.

3.4.2 Internal validity

Internal validity is the measure to ensure that a relationship between two sets of conditions is a plausible one (Yin, 2014). It also ensures that the findings make sense to the researchers and the readers (Miles & Huberman, 1994). In causal explanatory cases, ensuring internal validity is a concern for the researcher. To achieve internal validity for the research, units of analysis are specified, a chain of evidence is maintained from the research problem to conclusions, and interviewees must understand the research topic and have their responses accurately recorded. Measures to achieve chain of evidence were already discussed in the preceding section. Internal validity is also achieved through good interviewing techniques, such as proper probing during the interview and employing the attentive, in-depth listening skills of the interviewer. The interview questions were carefully designed based on a set of constructed specifications extrapolated from the literature review to ensure the validity of the research is upheld.

3.4.3 External validity

External validity is the extent to which research findings can be replicated beyond the current research and be extrapolated or generalised to a particular theory (Yin, 2014). Theoretical replication logic which involves selecting some cases that support the theory and other cases that provide contrast to the theory (Perry & Coote, 1994) was used in this research to achieve external validity. Cases with different stages of e-business adoption were selected to provide broadest possible evidence to aid theory building on the adoption of e-business within the micro business sector. Recommendations are made for further research to be conducted in other states, regions or countries to generalise the findings of this research.
The dependence on a single case study, rendering it incapable of reaching a generalised conclusion, has been a frequent criticism of the methodology. Yin (2014) argued strongly against views that considered case study methodology microscopic because it lacked a sufficient number of cases to make the results statistically meaningful. Yin (2014) and Hamel et al. (1993) argued strongly that the relative size of the sample whether two, ten, or one hundred cases are used, is irrelevant. They added that, as long as the goal and objectives of the research are established and the research parameters are properly defined, even a single case could be considered acceptable.

3.4.4 Reliability

Reliability refers to the ability of another researcher to follow similar procedures and use similar case studies to arrive to the same findings and conclusions as the original researcher (Yin, 2014). To improve reliability and reduce bias, a case study protocol and a set of interviewing questions were developed based on the research questions to guide data collection. A external consultant was engaged to conduct an audit of the interview instrument and two pilot interviews were conducted to ensure that the interviewees understood the questions, questions were refined and responses were accurately recorded by the researcher and the interview process was conducted free of bias. The consultant played the strict role of an observer to ensure that the data collection process and the interviews were conducted in line with the research protocol. Data collected from the research will be kept for seven years for ethical reasons and to ensure the reliability of the study.

As the research’s main objective was to take a snapshot of the perspectives of micro business entrepreneurs towards the adoption of technology, as opposed to seeking a longitudinal view, the need for selecting a single case study methodology was not relevant (Yin, 2014). The next section outlines the rationale used to select a multiple single-case study methodology and describes its protocols and research instruments. It also describes the research design and the data collection procedures used in the research.
3.5 Framework for Case Study Research

The framework proposed for this research is as follows:

<table>
<thead>
<tr>
<th>3.5.1 Research Design for case selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5.1.1 Selecting a Case Study Approach</td>
</tr>
<tr>
<td>3.5.1.2 Determining the Number of cases studies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.5.2 Data Collection procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5.2.1 Case Study Protocol</td>
</tr>
<tr>
<td>3.5.2.2 Research Instrument Using Semi-structured Interviews</td>
</tr>
<tr>
<td>3.5.2.3 Interview Process</td>
</tr>
</tbody>
</table>

3.5.3 Analysing the data

Source: adapted from Carson et al. (2001); Perry et al. (1999); and Yin (2014)

Table 3: Research Framework

3.5.1 Research design for case selection

According to Eisenhardt (1989), the main purpose of case study research is to describe a phenomenon in depth, to test a theory or to generate a theory. Perry et al. (1999) argued that case study research can combine elements of theory building and theory testing, however there have been opposing viewpoints about how much theory-building or induction, compared to theory-testing or deduction, should occur in the research. Yin (2003) favoured the deductive theory testing approach. Eisenhardt (1989) advocated the development of a priori specification to assist in shaping the research questions based on the literature review.

While theory-building from case study research is largely an inductive process (Perry et al., 1999), in this research, it is argued that a balance of inductive and deductive process can be used, although induction remains a prominent process. This balance recognises that pure inductive grounded theory, which emphasises that the theory is generated from a case study alone, may be extremely difficult and does not take into account prior theory already in literature (Strauss, 1987). After all, theory advancement is a continual work in progress, arising from a combination of inductive and deductive processes (Perry et al., 1999).

Carson, Gilmore, Perry and Gronhaug (2000) suggested that an overlapping three-stage approach can be undertaken. Prior to the data collection stage, a search was conducted
on existing literature to identify any a priori theory that was relevant to the research (Nair & Riege, 1995). The literature review exercise highlighted the knowledge gap in literature and provided the initial data to inform on the perception of the effectiveness of government policies on the adoption of e-business within the SMEs. Relevant data identified by the literature review was synthesised and research questions were formulated. These research questions formed the basis to select an appropriate case study methodology and to formulate the interviewing questions. Two pilot interviews with business owners were conducted to assist the preparation of the interview instruments and to guide the data collection in the exploratory stage (Perry & Coote, 1994). The objective of the two pilot interviews was to ensure that: research questions were correctly understood by the interviewees, appropriate and relevant questions were asked, that the duration of the interviews fell within the time limits, and answers collected from the interviews addressed the research questions. Feedback from two pilot interviews was incorporated into the research design. However, the outcomes of these two pilot interviews were not included in the analysis and the two business owners who participated in the pilot interviews were not reinvited to participate in subsequent interviews.

In exploratory stage two (Figure 3), secondary data on government policies and programs, type of e-business, general information of micro and small business enterprises in NSW and Australia and the general status and progress of e-business in NSW were collected from publicly available government reports, journals and other sources. In this phase, data from interviews of eight business owners were collected. Eight business owners were selected from representative industries that constitute 84% of small businesses in NSW: Real Estate, Retail, Professional Services, Engineering, Healthcare, and Technical Services. Out of this eight, three participants from the Professional Services industry were invited since micro businesses in this industry sector occupy the majority of small businesses in NSW. The key instrument used in this stage is the interview, with the interview process guided by a case study protocol. A semi-structured interview was conducted with each participant, with each interview taking between 60 to 90 minutes.
In the explanatory phase, given that the majority of micro businesses in NSW are in the professional and technical services sector, three business owners from information technology, healthcare and transport were selected to validate data collected from the exploratory stage; as well to detect any particular issues that had not been raised by their peers in the same industry in the previous stage. An interview with a staff member of the NSW Small Business Commission was also conducted to confirm or disprove the outcomes of the data collected from the interviews. A list of participants, the industry sector that each participant belongs to, and the technology used in their business, are detailed in Appendix A.

Figure 3: Three Stages of Research
Source: adapted from Yin (2014) and Perry et al., (1999)

Selecting a case study methodology requires resolution of certain case selection issues, including a decision on whether to opt for a multiple rather than a single case approach, determination of case selection logic, and the number of cases to be selected for the research. The next section outlines the reasons for adopting a multiple single-case study and describes the embedded unit of analysis.
3.5.1.1 Selecting case study approach

A single case study is used when it provides the critical test for a well formulated and developed theory or where it represents an extreme, unique or rare phenomenon. Neither of these two criteria clearly applies to this research since there still is no well-developed theory or conclusive findings explaining the relationship between government policies and adoption factors of e-business in micro business, and the adoption of technology is not considered to be a unique event. Multiple single-case studies were used instead of a single case study since the researched topic is not a rare or extreme case. The primary purpose for this research is to understand the causal links, it does not attempt to prove or disprove a theory’s propositions. The research intends to take a snapshot of the phenomenon studied rather than seeking a longitudinal view, hence the need for a single case study is not relevant (Yin, 2014).

The research was conducted using qualitative methods and the rationale was explained in Section 3.4.3. Eisenhardt (1989, p. 537) highlighted that the number of cases selected for the research is based on theoretical sampling, which is different from statistical sampling as used in the quantitative research method. Thomas (2011) elucidated that the aim of case study research is not statistical research, and its objective is not to produce outcomes that are generalisable to all populations. Performing a comparison between a qualitative case study and a typical quantitative statistical research will do little to promote the merit of the qualitative approach, and fail to recognise its inherent value, which can be better understood from the realist or social constructionist viewpoint of other researchers (Kenny & Dickson-Swift, 2014).

The selection of a multiple case studies in this research also allows for the triangulation of evidence (Eisenhardt, 1989; Yin, 2014) and offers greater potential for generalisability (Bonoma, 1985). A multiple case studies approach using theoretical replication also provides a sound basis for theory development since theoretical replication allows the researcher to select cases with different stages of adoption (already implemented e-business, planned, and no plan to adopt) to produce the widest possible range of evidence (Yin, 2014). For this research, the multiple single-case
studies approach was selected with each enterprise considered an embedded unit of analysis, given that the decision making to adopt e-business rests largely with the conditions of the business itself, the entrepreneurship and management skills of the owner of the business.

### 3.5.1.2 Determining the number of cases studies

Eleven case studies were conducted in this study. There were three reasons for the selection of eleven case studies: the number of interviews fell within the range suggested by qualitative methodologists; the number of cases were similar to those used by previous high quality studies, and the number of interviews did not exceed a notional statistical threshold where data saturation was reached (Marshall, 2013). Eisenhardt (1989, p. 537) pointed out that “the sampling of cases from the chosen field is unusual” when building theories for case studies. She suggested that the number of cases selected for the research is based on theoretical sampling, which is different from statistical sampling as used in quantitative research method. She argued that while random selection of case study cases can be undertaken, this sampling technique is in fact neither necessary nor preferable. Pettigrew (1988) went further and suggested that given the limited selection of the number of case studies, it makes sense to select cases of polar types in which the researched topic to be studied is transparently observable. Miles and Huberman (1994) argued that generalisation of any theory is difficult with fewer than four cases and too complex to analyse with more than 15 cases.

Marshall et al. (2013), in their examination of 83 studies using a qualitative research methodology, found that, while there was no rigor in determining the number of interviews, there was a tendency for researchers to conduct between eleven and twenty interviews in their research. Marshall et al. (2013) also reported that saturation level is reached around 30 interviews where no further new evidence emerges. In alignment with these recommendations, eleven cases were selected to ensure that valid and meaningful data were collected. In this research, eleven case studies were selected from micro businesses that operate in NSW. Given that 84% of business are services related firms (DIISRT, 2012), and in order to maintain the same proportion of each industry relative to the total number of industries, nine micro businesses in Professional, Real
Estate and Health care services, one in Retail and one in Manufacturing were selected (refer to Appendix A). In the eleven cases, enterprises with different stages of adoption are selected as follows: two businesses which have already implemented e-business at an advanced stage which includes email, web and portal/Customer Relationship Management (CRM) system; five businesses which have email and basic website; and four businesses with only emails, were selected to produce the most transparent evidence possible upon which the research conclusions can be drawn. The next section describes the data collection processes, procedures and the research instruments developed for this research.

3.5.2 Data collection procedures

To aid the gathering of data necessary for the research, a protocol was developed to guide the process of conducting the interviews. Prior to the interview questions being used in the eleven interview sessions, two pre-test interviews were carried out to ensure the fluency of questions, that the language used was easy to understand and the questions actually answered the variables identified by the constructs. The responses of the two pilot interviews were not included in the data collection. Subsequently, the interview questions were refined based on the experience gained from the pre-test interviews.

3.5.2.1 Case study protocol

The interviewer prepared the interview well in advance. Some general steps that the interviewer followed were:

1. Contacting the interviewee, explaining the purpose of the interview, establishing date, time, location and duration of the interview, explaining interviewing protocols with regard to confidentiality, privacy and the audio recording of the interview
2. Making sure that the interviewee felt comfortable and interested in the discussion
3. Advising the interviewee that they can stop or leave the interview at any time if they do not feel comfortable with interviewing questions
4. Exploring the current situations with e-business in Australia and NSW
5. Ensuring that the interviewee answers all questions thoroughly, duly recording the responses, and asking probing questions, which require in-depth, open-ended questions.
6. Thanking the interviewee for their time and asking if they would like a copy of the research report when it is complete, or a brief of the report. The interviewer also asked the interviewee’s permission to call back the interviewee to clarify any ambiguous or unclear answers in the interview.

All of the interviews undertaken in this research adhered to the “flexible and opportunistic data collection methods that allowed additions to questions in an interview protocol during the series interviews” as suggested by Eisenhardt (1989, p. 533).

3.5.2.2 Research instrument using semi-structured interviews

Semi-structured face-to-face interviews were conducted using a sequence of prepared questions. It was also planned that, where the participant could not attend the interview session, the interviewee was to be interviewed by telephone. However, all participants were interviewed face-to-face at their business premises.

Prior to the interview taking place, the interviewer performed a number of preliminary and preparation tasks. These tasks included the introduction of the interviewers and the interview process, the suitability of the date and time, the location of the interview, asking the interviewee for their consent, explaining the research outcome, the confidentiality of the interview and the desensitising of the interview transcripts before they are presented in the research. The semi-structured interview consisted of a number of open and closed questions. Most questions were in a ‘funnel sequence’ where the interview started with a closed question to warm up and familiarise the interviewee with the research topic and questions.
During the course of the interview, the researcher asked open-ended questions that were based on a set of interview questions to probe the participants for their insightful views. When a participant might have felt uncomfortable in answering a question, the researcher would use a critical incident question which has been included to uncover the interviewee’s response. Three hypothetical critical incidents were developed for this research and were used to elicit responses from the interviewees where in-depth discussion was required on specific issues, or when the researcher felt that answers related to the questions may not be forthcoming from the participant. The first critical incident explores the barriers to adoption as well as positive adoption factors. The second critical incident elicits responses on government regulation, trust, dispute resolution and cross-border transactions. The third critical incident explores the perception of micro business owners in the ICT infrastructure and skills to adopt e-business. However, all participants answered all questions without the need to use the critical incidents.

3.5.2.3 Interviewing process

Each interview lasted, on average, between 60 to 90 minutes. The interviewees were notified that the interview sessions were audio recorded digitally; however, no personal data was to be included or discussed in the research. Prior to the commencement of the interview, the interviewer provided a confidentiality agreement document assuring the interviewee that the identity and the commercial activities of the interviewee’s business were to remain confidential.

The questions were designed as a series of closed and open questions to measure the perception of micro business owners towards governments’ initiatives and policies on e-business. These structured questions were asked to gain an understanding of the problems facing the enterprise in adopting e-business, ‘what makes the business entrepreneur tick’, what initiative the interviewees saw as helping them improve their business by embarking on e-business adoption, and what policies were hindrances or needed to be addressed before they would implement e-business. The language used in the questions was simple, clear and conversational. Leading and loaded questions were avoided since they introduced bias in the answers. Each question attempted to elicit a
response on a specific issue and double-barreled questions were not used. Answers from the interviews were recorded and transcribed into Microsoft Word documents and data entered in Microsoft Excel for pattern matching, analysis, interpretation of findings and report preparation. The Excel spreadsheet included in Appendix D was produced from data collected from the transcripts. Key ideas from the interviews questions were grouped into six categories: adoption factors, government support and e-government, regulatory framework, e-commerce, human infrastructure and information, communication infrastructure. The keywords were broadly based on the research questions and the answers from the interviewees from each column were analysed, common themes were identified and grouped, differences were highlighted, and the results of the analysis were presented.

3.6 Ethical Issues

This study is conducted purely for research purposes and data collected by the researcher is not intended to be used or made public for any other purpose. All private and confidential data was de-identified and confidentiality and anonymity of the participants was ensured and maintained by the researcher. The researcher has taken reasonable steps to ensure that this research complies with the university’s ethical research standards (Code of Research Ethics) in particular the researcher’s responsibilities (section 5, 1983), Informed consent (section 7, 1992) and Storage of data (section 9).

In conducting the research, the following ethical issues have been addressed:

1. The research was conducted in a professional manner
2. All information collected is to remain confidential, especially any commercial information given in confidence
3. The interviewees were not forced to respond to the interview questions
4. No personal information of the interviewee was collected nor solicited
5. No individual or definable groups can be identified with information provided in the report
6. Participants are to be fully briefed about the nature of the research before the interview is conducted
3.7 Limitations of Case Study Research

There are five main limitations of using a case study research methodology, namely: the ability of the researcher; the problem of overly complex theory; issues of external generalisability; typical inherent problems of conducting case study research, and lastly the over-reliance on a single methodology. In qualitative research, a researcher is the primary instrument of data collection. For this reason, the quality of data collected is limited by the ability of the researcher (Perry et al., 1998). This limitation has been addressed by ensuring that a case study protocol is drawn up before data collection takes place. This protocol describes the behaviour required of the researcher to ensure high standards of interviewing and data collection are observed. An interview audit was performed by an external researcher to ensure that the interviews address the research questions, that responses are accurately recorded during the interviews. Where practical, an external consultant was present in the interview. The issue of not generating an overly complex theory was addressed in this research by focusing on the research questions, carefully reviewing any prior theory gathered from the literature review, preparing a comprehensive case studies protocol to guide the research and, lastly, constructing an interview instrument with a set of questions that focused on data collection.

The third criticism lies in case study research only using a small number of cases to statistically represent the population. Yin (2014) defined external generalisability as the extent to which a case study’s research results provide a suitable basis for generalisation beyond the setting and scope of the study and the sample population. In statistical research, this implies that the application of the results of a study to a group can be generalised to that population (Yin, 2014). However, as discussed in Section 3.4.3, case study research does not involve in the generalisation of findings from the population but rather to the theory hypothesised by the research. The fourth criticism focuses on typical problems encountered in case study research, such as unwillingness of interviewee to co-operate and to provide truthful responses (Yin, 2014). These limitations, however, are unavoidable with any research methodology. To reduce problems in this area, interviewees were fully briefed in advance about the objectives and processes involved.
in the interview. Furthermore, a case study protocol and an interview instrument were developed to guide the interview process.

The last criticism argues against the over-reliance on a single methodology. By their nature of design, no single research methodology, be qualitative or quantitative, is sufficient for a sound theory development (Parkhe, 1993). While case study research is not without limitations, careful consideration has been given to ensure that these limitations are understood and appropriate steps were put in place to ensure that these limitations are properly addressed in the design and execution of this research.

3.8 Delimitations of scope and key assumptions

Data for the research was collected mainly through interviews with the entrepreneurs or managers of the business. It was thought that respondents may be computer illiterate which may make it hard for the interviewer to discuss e-business concepts, therefore a diagram describing the e-business concept was included in the interviewing question in case reference to e-business was required. Those business owners who do not want to embrace e-business may hide their lack of knowledge in the e-business area which in turn may give the interviewer an “untrue” answer. However, it is expected that the use of critical incident would alleviate those concerns. The next section discusses findings of the research based on five research questions outlined in Chapter 2.
4. FINDINGS and ANALYSIS

The findings of this research are presented and grouped into five sections. Each section addresses a research question. Findings and analysis of the interviews were analysed, coded and presented in line with the five research questions listed below:

1. What are the adoption factors that affect the decision of micro enterprises owners to adopt e-business?
2. How are government support and services in e-business perceived by micro business?
3. To what degree does Australian government’s regulatory framework, trust and financial infrastructure influence micro business’ owners in adopting e-business?
4. How do the Australian government’s human infrastructure programs foster the adoption and sustainability of the e-business within micro business?
5. How do public communications and information systems infrastructure encourage the investment and building of IT infrastructure of micro business?

To ensure the confidentiality and anonymity of the participants, each interviewee was given a code. A list of interviewee codes is included in Appendix A. Transcripts of the interviews were coded along these five research questions and they are included in Appendix D. The interview guide, including the interview questions, is detailed in in Appendix C. In order to gauge whether current government initiatives on encouraging micro business to adopt e-business were aligned with the need of micro business owners, an interview with a senior officer from the NSW Government’s Small Business Commission was also conducted. The officer was coded as B1.

4.1 What are the Adoption Factors that Affect the Decision of Micro Enterprises’ Owners to Adopt E-Business?

All participants indicated in the interviews that they would be willing to adopt e-business when it makes commercial sense for them to begin using technology. Regardless of the type of business, 90 per cent of all business owners that were
interviewed already had email, computers and access to the Internet. However, due to the nature and setup of micro business, [A24] and [A9] found that it was more convenient to conduct their day-to-day electronic transactions such as banking, answering emails, accessing the web or lodging of data required by government agencies at home and after business hours.

Participants in professional services including real estate and properties services recognised the term e-business; however participants in manufacturing and transport were not familiar with the term although they were comfortable with using email and accessing websites for information. When asked about e-business, more than half of the participants mentioned barriers to implementation rather than benefits of e-business to their business.

4.1.1 Time and cost

Half the number of participants [A9, A14, A27, A18, A20] cited that time and cost were the two major factors that micro business owners did not have. [A18] reported that “time is the biggest factor” impacting on the decision to implement technology. In operating a micro business, most owners performed a number of tasks within the organisation. They played the role of owner, manager of the day-to-day business, financial controller, customer service provider and business administrator. Micro business owners did not have time to consider, evaluate or appraise what technology was beneficial for their business. On the other hand, [A23] was convinced that if business owners perceived that technology would save them time they would be willing to implement it. [A23] added that if the owner was ICT or web savvy then the business would be inclined to adopt technology. Micro business in retail, community and business services with more than one permanent employee tended to install computers at their business premises to help with document sharing within the business. [A24] also commented on the additional cost to the business’s budget to employ at least one additional administrative staff member to support computerised systems. In micro business, even a modicum of saving is paramount to the successful operation of the business; incurring extra cost for intangible or little benefits to business deterred business owners from embarking on the implementation of new technologies. [A20]
noted that the level of technology required by a business was determined by the business itself. [A20] was of a view that “horses for courses”, not “one size fits all”, when it came to implementing e-business.

Some participants [A18, A21] explained that, given the cost to implement e-business, they preferred to maintain status quo. [A18] emphasised the need to “run business within your means”. [A9] argued that the cost base of some businesses is intrinsically higher than their competitors due to the implementation and operational cost of technology. Businesses that have already had basic computer infrastructure in situ, such as a basic website with a few pages, will be more inclined to further adopt technology than those that have not been exposed to or need to use technology. [A21] confessed that incurring expense on IT projects within the business was of low priority and business owners would avoid or spend as little as possible on IT. [A9] posited that some businesses have had websites but the presence of websites has delivered little benefits to the business compared to the cost spent on the website development and maintenance incurred by the business. [A18] admitted that anxiety and ambivalence have been prevalent amongst owners who were not IT savvy because of the reliance on technology within the business might expose business to downtime and other collateral risks, such as exposing a business’s confidential data to hackers. [A18] also noted that the cost of software that business has to procure in order to exchange data with government agencies might be another significant barrier. [A18] also highlighted the expensive cost of software due to the monopoly position of some software providers in certain industry sectors.

[A27] pointed out that some businesses preferred to not implement technology to expand the business, fearing that the business might not be able to cope with a larger influx of customers. This perception has been quite prevalent in engineering and servicing industries such as mechanics or manufacturing. Increasing the number of customers in the service industries required increasing the number of skilled tradesmen and technicians, but there a major shortage of skilled workers. [A14] highlighted that staff shortage has been a major problem, hindering business’ future growth.
[B1] recognised the rather extreme difficulty of the Commission staff in getting through to micro business owners. He admitted the ineffectiveness of running a ‘workshop on e-business’ because of its poor attendance and the owners not recognising or understanding it as relevant to their business. He believed that the Commission would have more success if its staff met the owners face-to-face and treated each individual business as a project on its own so that the government’s advice remains targeted.

4.1.2 Lack of trusted advice

[A21] agreed that competition was driving micro business to adopt e-business because technology helps businesses market their products faster and provide better service. Businesses would implement technology when there was a genuine need for technology. [A23] suggested that business owners needed to be made aware of the benefits of e-business, however they would need specific information relating to their own business. Generic messages or information about the benefits of implementing e-business from government agencies’ websites or brochures did not generally register interest with business owners. Most business entrepreneurs needed face-to-face meetings or to receive relevant and targeted information about the benefits of adopting technology if they are to embrace e-business. [A21], [A23] commented that businesses were generally aware of the benefits of technology so the general awareness of the benefits of technology was pervasive amongst business owners, however some business owners were not aware of the specific benefits of implementing e-business in their business until they received advice from professional or trusted sources such as government institutions. [A23] commented that “business owners might not know that they need a website until they are advised of the business reasons such as new customers or more channels to market their products”. [A23] believed that the shortage of advice or information from trusted sources about the benefits of e-business is a contributing factor in business not adopting technologies.

4.1.3 Lack of demand from customers

[A24], [A5] identified that in retail or services (IT, finance, real estate, or health care providers) most of the customer bases were living within a ten kilometre radius, so the
need for and presence of a website was not of significance to the business. Most micro businesses believed that an entry in Sensis’s Yellow Pages about their business was adequate and were uncommitted to develop and front a comprehensive website. [A9] had previously fielded a comprehensive website which included online ordering had decommissioned their website to reduce operational cost. [A9] admitted that the website was neither used by their customers nor brought significant benefits to the business despite the presence and sophisticated capability of their website.

[A14] commented that the implementation or use of e-business alone in each business might not bring about its perceived benefits. Unless all or the majority of business in the supply chain implemented technology, [A14] believed that compartmentalised implementation of technology in each individual business might incur additional overheads in terms of time and physical resources resulting from the manual transfer of data from one system to another system. [A18] recognised the push from government agencies to implement software to facilitate the exchange of data between the business and the governments, and commented that some businesses have had to implement specific software to connect and exchange data with government agencies. [A18] cited some strong barriers to the adoption of e-business: fearing that the privacy and confidentiality of its clients’ personal details might be comprised due to the lack of ICT “know-how” within the business, and the need to ensure that security of its computer systems could withstand unauthorised access from unknown sources.

[A21] commented that the lack of competition was also hampering the uptake of technology within micro business. [A21] was adamant that “if there is enough competition in every industry then people will think ‘okay’ I will need to do something, I need to adopt new technology”. Businesses generally want to maintain the status quo, “I am making enough money now, I don’t want to grow too much” remarked [A21]. Implementing e-business required knowledge in software applications, computer systems, technologies and telecommunication network. [A21] commented that “Australian businesses are generally lagged [sic] behind their Asian counterparts in technology adoption and they are quite risk-averse when adopting technology”. The next section discusses findings on government support and e-services.
4.2 How are Government Support and Services In E-Business Perceived by Micro Business?

4.2.1 Interactions with government

The majority of participants [A5, A9, A14, A22, A23, A24 and A27] commented that their business had little to do with governments apart from reporting their quarterly Business Activity Statement (BAS) to the Australian Taxation Office (ATO). However, they did not interact directly with the ATO but often report via their accountants. [A22] reflected that

I don’t have much faith in the government. They are here to take my money and they don’t actually help anybody. I’ve been in business for forty five years and I haven’t met anyone from the government. I haven’t met any from Parliament, local government, state government; no one’s even come to ask my opinion.

On a more positive note, as mentioned in preceding section in 4.1.2, [A23] commented that, when and if required, the business would rely on, seek or listen to advice or information published from trusted sources such as those initiated and produced by government agencies. [A20] commented that the business considered the push from government to encourage business to adopt e-business a change management exercise. [A20] explicated that “governments of various persuasions have done a lot of pushing over the years and I don’t think it has been a particularly successful strategy ... particularly when some solutions have been fairly inadequate”. [A20] agreed that “we all need a bit of pushing, but to feel that we’ve got no choice in the uptake of technology is very disheartening”. [A14] was adamant that business owners do not “see the government really give them an incentive to stay in business or [be] in business of what they do”.

[A20] highlighted the idea that lack of customer service was the problem facing government agencies. [A20] recounted an experience dealing with a government agency
and the excessive amount of time that he had to spend over the phone with several officials. He vented his frustration and commented that

everyone who said they were going to give me information, steered me back to the agency’s website which I couldn’t use so everything was pushing me back, back, back to go and do something that I couldn’t do. So, it was all pretty hopeless. The fact that I wasted nearly two hours to three hours before I actually got to that point didn’t exactly make me feel happy about the NSW government system in that regard.

[A20] emphasised the need for small businesses to be able to contact government agencies and, more importantly, to be able to discuss with officials who are knowledgeable in the services areas provided by the agencies. He was frustrated by spending a considerable amount of time on a telephone going between all the different help options, only to be finally redirected to an offshore call centre where staff have little understanding of the local requirements. [A20] suggested that the government needed to manage this call centre issue better in the interest of businesses and its citizens.

[A18] was of the view that the government did not need to focus on assisting individual business but more importantly should be willing to fund expert groups or industry-based organisations that in turn will provide or assist individual businesses within their own industry sectors. Government agencies often do not have a full understanding of business so their support of business owners has been limited or misguided. [A18, A20] commented that governments’ e-government strategies to coerce business to adopt e-business to connect electronically with government agencies were largely not successful because “their solutions are inadequate” or “fees incurred from extracting information from [the] governments’ website” are unreasonable or unwarranted. They further elaborated that businesses preferred to be able to communicate one on one with government advisors because “it takes less time to speak with someone on the phone about a specific piece of information rather having to scroll through 45-minutes of web pages to find it”. [A20] stressed that “being able to get to somebody and speak to somebody who knows what they are talking about is part of the support” that micro business owners were keen to explore. [A18] believed that owners preferred to discuss their business issues with a “real person rather spending 45 minutes going between
different help options”. [A13] offered an insightful view into some government procedures: “They’ve been totally manual. As soon as they try to automate those things they’ll stuff them up”. [A20] reflected this view on government agencies ‘offshoring’ and commented that that the service received by micro businesses depended how well the people in the call centres in India or the Philippines were trained, their call handling procedures, knowledge of the problems and the academic qualification of staff at the call centres. [A20] recognised that “some of the people in those places are already university graduates with credible knowledge and background and some of them work very hard on their comprehension in English and everything else”.

In the drive by governments for business to deal with governments at all levels electronically, [A18, A20] agreed that “governments’ solutions are often very techno-centric” and its user interface lack a customer or business focus. [A20] suggested that the government needed “to have a good appreciation and involvement of micro businesses to design systems before their rollout and recognise and identify ways in which it can make life easier for micro business”. [A21, A22] were quite critical of the government’s support. They believed that the “government takes advantage of good will from business and changes policies or decision mid-way”. They believed that regular changes in government policies discouraged businesses from positively embracing government initiatives.

In regards to the government’s philosophy and policies in dealing with small business, [A21] highlighted that government-issued tenders did not provide micro business with the same opportunity to respond as with large or multi-national organisations. [A21] commented that often governments’ “tenders are not well prepared, contents cut and paste from somewhere else and micro business may not be able to respond well unless it possesses good knowledge of the tender”. These negative perceptions created a strong sentiment of distrust among micro business with regards to any attempt from government to encourage micro business to adopt e-business.

[A22] believed that governments should concentrate on building infrastructure such as road, transport and ports to enable goods to be received or delivered at reasonable cost.
[A22] stressed that “transport cost domestically in Australia is high which impacts on the cost competitiveness of goods made in Australia compared to goods made in China. Right now it costs more to transport goods interstate than sending containers from China to Australia”. Better infrastructure would help business to lower the cost base and grow their customers which indirectly impacts on the adoption of e-business.

[A22] argued that governments at all levels were “talking up ‘what-if’ but not commitments to do it”. [A22] added that “policies are made in the electoral cycle, and most often policies are geared more to enforcing than assisting business” and was of the view that the federal government should reintroduce or consider tariffs to keep jobs in Australia. As far as taxation is concerned, [A22] did not think that “the government is assisting micro business since most micro businesses need to engage accountants to submit their BAS”. [A22] believed that “there is too much bureaucratic red tape in governments and they are more into assessment and study rather than implementation”.

[A23] commented that government’s pamphlets on the adoption of e-business were not effective in spreading the government’s message to business owners. [A23] suggested that governments should run more awareness and educational campaigns on television or radios on the benefits of implementing e-business, advising business on how to transact safely and securely on the Internet. Online or paper-based media were not effective since majority of micro business do not have to time to surf the Internet or read brochures. [A23] suggested that business owners need fast snippets of news to inform or advise them what needs to be done. [A20] believed that governments should communicate and provide examples on how to make things happen and how they can be used; even something simple as a YouTube video, demonstrating the use of government services. [A20] commented that “governments should lead us through, not just relying on the written word and whatever else. It will make life easier”.

[A13] commented that micro business owners found that dealing with governments was difficult even for those who understood government processes and procedures. [A13] believed that government agencies “have too many computer systems and they don’t talk to each other. Governments tend to make things far too complicated, their processes
are too technical”. These complicated processes were discouraging micro businesses to take advantage of the government’s e-government agenda.

However, [A13] agreed that governments played a role in encouraging micro business to adopt e-business. [A13] recognised the governments’ lead in e-government initiatives such as electronic lodgement of documents, in EFT payments to services provided by business. [A13] was uncertain whether these initiatives would be sufficient for business owners to consider to adopt e-business. [A13] concluded that in order to help micro business, governments “should be getting their owned system organised. Not only the micro business section of the government but the whole government across the board in order to effectively deal with micro business”. Governments depended heavily on software system to drive their business processes and given that the systems are hard to use and unwieldy, it was difficult for micro business to follow those processes. [A13] also strongly believed that governments should mandate its bureaucrats to pay micro business’ invoices on time given micro business may only have a small reserve in their operational cash flow. The policy to settle payment for goods and services on time is in place, however in reality it is generally not strictly adhered to and followed through. [A21] suggested that the government should “encourage micro business” to partake in tender responses to bid for government work. [A21] proposed that the government mandates that large enterprises engage and partner with local SMEs in tendering for government goods and services contracts. [A21] suggested “twenty percent of the work should be outsourced to the SMEs or something like that. So if the government is giving hundred million dollars of work to IBM, at least twenty million worth of projects should be allocated to SMEs”. [A21] added that the government should design or initiate “some kind of a system to encourage SME’s to flourish because micro business can’t directly deal with the government with so much paperwork and all those things. Through these companies, we’ll be able to work better”. [A14] was convinced that governments should concentrate on introducing or amending policies that directly helped business owners to manage or streamline the operations of their businesses.

Both [A14, A18] emphatically agreed that the government could and should play a police or monitoring role to ensure that development and maintenance of software that
helped business run their day-to-day operations is not monopolised by one or a few organisations which in turn charge at an unreasonable cost to micro business. [A14] cited a real-life example where a business got charged several hundred of dollars for the update of yearly tax scales into their business management software by a software company. [A14, A18] believed that governments should play a more active role in introducing or facilitating more competition in the business management or client relationship management (CRM) software market so a business does not get locked in a particular application platform. This is because businesses owners may have no expertise or time to evaluate alternative application software to replace their current software and lower their operational cost. [A18] also expressed dissatisfaction with the business’ client management software and was convinced that due to the lack of competition in the client management software and the monopoly of the software, business had to pay expensive yearly support cost to maintain the software. [A14] added that governments are better spending funds to help industry peak bodies to work on the specifications of minimum software requirements, standards to be adopted and hardware required. [A14] conceded that “it took longer for the business to reconcile payment transactions to pay their suppliers using Internet banking than issuing cheques”. [A14] cited a personal example: “writing a cheque took me less than two or three minutes. On the other hand, Internet banking requires me to look at the statement, getting [sic] online, paying them then logging off, getting on my email to send them a remittance slip and then saving some record as well that I have paid them so it does not save me that much time”.

[B1] confirmed the structure of the Commission as outlined in the literature review. [B1] provided an insightful reason for the establishment of the Commission and the new direction that the NSW government: taking to support small enterprises. [B1] confirmed that the government understood that small businesses did not have the time nor the financial resources to engage in prolonged disputes with other parties. [B1] confirmed that the NSW government and the Commission have moved away from large scale funding of projects to promote the uptake of e-business with micro businesses. [B1] elaborated that the current NSW micro business strategy supported the allocation of the government funds into practical, face-to-face business cases that were well supported by
online resources, other software and business tools, and with experts in the field walking through with business owners to develop a business and action plan to improve the accountability of the business in implementing e-business. [B1] added that the government has been moving away from grants, because the Commission found that the only people that got access from grants were either well connected or knew how to write the Grant application form. As a general rule, he believed that “the Commission didn’t help the majority of micro businesses; it helped the minority of micro business”. The government has currently redirected its funds and focused its effort into having more face-to-face interactions with business owners. [B1] believed that business owners “just want a real person, on the ground that they can talk to and help them through it all”. [B1] further commented that business owners needed “someone there face-to-face and then they’ve got to have practical, real advice ... not theoretical”.

[B1] conceded that the NSW government was aware that the uptake of e-business by micro business was minimal and has devised programs to encourage micro business to adopt e-business. Even though the adoption rate has been slow, the government recognised that a trend has been emerging concerning the stages of implementation of e-business. The government has grouped the implementation stages into three categories: information delivery, social interaction and shopping cart. [B1] further elaborated on the government’s strategy and viewpoints. He announced that the first stage of e-business began with the information delivery phase and a large percentage of micro business owners in NSW were at this stage. Businesses were publishing their brochures about their business online at their websites. [B1] recognised that the challenge was making sure that business owners were aware that the Commission and its resource existed to be of service for the small business communities. Due to the ad-hoc and serendipitous nature of entrepreneurship, the government understood that micro business owners did not spend sufficient time to research the market nor possess sufficient knowledge of protocols and policies that were available. In some instances, as a result of economic or personal circumstances, micro business owners started their business without proper planning and [B1] recognised the transient nature of micro business, saying “yesterday wasn’t thinking about starting a business, today’s been made redundant and tomorrow is...and that’s the point where everything before that day … then when you’re in micro
business, they don’t know what they don’t know, so they’re all right”. [B1] highlighted the importance of educating micro business owners about the benefits and opportunities that e-business could offer to micro business in a changing market due to advances in technology. [B1] cited an example:

Let’s use the bookshop. The bookshop’s running along, all going well, sale of books slowly start declining, no real idea of the trends or what’s going on and the changes with Amazon or whatever the case may be because they’ve been doing it this way for the last thirty years and I want to retire in the next five, hopefully I’m selling my business to get my retirement fund. Well, there’s nothing to sell because anyone new coming in, young, there’s no way you’d ever invest in a bookshop.

[B1] believed in the role of the Commission to help micro business owners to “see the forest for the trees”. Staff of the Commission was tasked to help business owners to set some action plans, implement and grow the business. In NSW, [B1] elaborated that owners of local services such as butcheries, bakeries, and grocers did not understand, or at best had just basic understanding, of e-business and how e-business could help them. At this stage, the uptake of e-business was very low and many businesses did not even have a business email address. The owners might have a personal email address but as a business, they did not have an email address. [B1] added that the government recognised in micro businesses, “the line between personal and business activities is very blurred and in a majority of cases, the two aspects of activities are totally integrated”. The integration between dichotomic personal and business activity led to the strength and weakness to the business.

[B1] spelled out the role of government to provide different services to urban and regional small businesses. He explained that in regional Australia, given the need for employment and other aspects, micro and small business do not have access to resources that their counterparts in the city have. He believed that the role of government was to make sure that if a business wants to help itself, then there was either a link or an ability for it to be able to get access to that. He highlighted the lack of business advisory service in regional NSW due to its low commercial interest, and that the government was in an ideal position to provide useful advice to micro business owners on how to start their businesses or adopt new technology.
4.2.2 E-government

As government pushes for more electronic transaction between business and government agencies, [A14] cited “a classic example is MYOB, we can do our wages for MYOB, every year we have to get upgraded tax scales. Now, MYOB charges you up to seven hundred dollars to load those tax scales. Now, the government forces us to use those tax scales but the government charges us for them and I think they can police that more and more. They should police that, that you know, like a government organisation should be able to police it?” [A14] summarised the role the government could play: “Simplify it, regulate it, make sure the services have to comply with certain procedures and standards”. [A14] cited examples where government and large business have been lowering the cost of services at the expense of customer service and higher cost to micro and small business. [A14] elaborated:

Take things like the telephone; I remember as a child, we just had Telecom, one government organisation. It may have been inefficient, it may have been costly but your phone costs $50 and my phone costs $50, it was a set playing field. Now, with this system we’ve got now, where Telstra owns the phone lines but they subcontract them out to other companies who then purchase a line to this guy who then purchases it to me. At the end of the day, yes my phone line might end up $5 cheaper but when there’s a problem, it’ll cost me $50 in time just to rectify.

Speed to market and how long it takes for governments to implement or refine their systems were important to strike an empathic view of micro business owners. [A27] observed that “when the government does something, it is very slow. Almost anything they do [is] five or ten years behind what business wants to do.” The next section discusses findings on government’s regulatory framework, trust and financial infrastructure.
4.3 To what Degree Does Australian Government’s Regulatory Framework, Trust and Financial Infrastructure Influence Micro Business’ Owners in Adopting E-Business?

4.3.1 Regulatory framework

A major function of e-business is to facilitate the purchase and selling of goods or services online between the buyer and the seller. [A21] highlighted the trend that consumers are more willing to commit financial transactions online now than five years ago. Almost all participants reported that they have been making invoice payments online or were in the process of comparing the benefits of making payment online versus payment by cheques. All participants were not aware of any major legislation regulations or policies, apart from anecdotal experience that they might have had when their business made transactions online. [A23] acknowledged that improvements have been made by e-commerce sites, financial institutions and payment gateways to raise security awareness against malicious applications such as spam, phishing and scams.

As more businesses are getting online, a number of payment gateways developed by software developers domestically and overseas are deployed by business websites to facilitate payments of goods and services. [A21, A23] raised their concerns that the development and installation of these gateways might not meet privacy and confidentiality criteria as customers personal and financial details are collected and might be stored without knowledge of the users. [A23] stressed the need for the government to develop guidelines or standards for payment gateways operated in Australia, and implement these guidelines to ensure that these gateways informed consumers on how their personal and financial details are kept. [A21] believed that there was no standard that guided the development of these gateway payments at this stage. [A21] commented that “if you want to have an [online] bank transaction, you need to implement this kind of security into your system”. [A21] feared that “the garage developer may do the whole payment gateway for two hundred bucks” and the gateway might lack all the security features that are required to transact securely and safely on the Internet. [A21] believed that government should exert pressure on or encourage financial institutions to develop and publish minimum requirements for payment
gateways and to enforce and certify payment gateways before they interface or exchange data with the bank’s financial systems. [A21] pointed out that the deficiency of security features or weak encryption algorithms reside at the user interface rather between the web servers and the financial institutions servers. [A21] cited reasons behind the impetus for government to create a framework in which development guidelines for financial transaction gateways will be designed or developed. [A21] elaborated further “micro business does not know [the technical aspects of these gateways]. They are not in the development world to really know, the owner probably does not even know the difference between a text-based non-encrypted data transfer http [a non-secure form of data transfer] and https [a secure form of data transfer protocol] , owner does not understand that their gateway may compromise the data security of the consumers but to an unsuspecting user, they do not know. They happily punch in their credit card details”. [A21] highlighted that adoption of software development standards currently is voluntary, consequently there has been no policing, or following-up actions required. The majority of participants agreed that the government would be ideal to play this policing role.

[A21] discussed the idea that the automatic charging of credit cards without the card owner’s approval is a concern for consumers. [A21] believed that regulations should be introduced to compel websites to disclose and inform their clients whether the credit card details will be stored in their system and the website should give users options to deselect whether or not they want their details to be used in future visits or for future invoicing. However, [A21] elaborated, cautiously, “I am not too sure what sort of regulations out there, but too many regulations also, it is difficult [for the government] to implement so it has to be self-regulated”.

[A13] believed that promoting trust is critical to encourage the use of electronic transactions. [A13] commented “let’s say you put through your credit [card credentials] and suddenly the whole wide world will know your credit card... The government could do further to strengthen or improve trust. That’s very important”. [A13] confessed that “if it’s a [dot com dot au], I feel much more comfortable. If it’s a dot com, you don’t know where they are. I will click on an address that you will find out a bit more where
they are”. [A13] added “but again, typically of micro business owners probably do not have time”. [A13] also discussed and proposed the display of the business’s ABN on a business website as a means to declare the authenticity of the business, and the need for the government to run an awareness campaign on ”buyers beware” to warn the public of the potential dangers of transacting online. [A13] recognised the relatively high advertising cost that might be incurred by the federal and state governments in order to disseminate the awareness as widely as possible to the public. While business owners in general were more comfortable transacting online with other organisations or individuals, the majority of participants raised their concern over current remediation or dispute handling mechanisms. The next section explores this issue in more detail.

4.3.2 Remediation and dispute handling mechanism

[A9] cited a few examples where businesses encountered fraudulent transactions committed by their customers using a credit card on a daily basis, either at the business premises or online. [A9] believed that credit card fraud is prolific and that the banks’ security systems have not been able to comprehensively detect these fraudulent transactions, forged cards or stolen identities. Consequently, the business ended up recording a loss of money for these fraudulent transactions although it was through no fault of their own. [A9] commented that the banks generally deny liabilities even when business owners follow all correct procedures in validating the identity of the card holders. [A9] recounted anecdotally that some businesses had to contact the bank several times to report or alert the banks of these fraudulent transactions and often was told by the banks that “this is your problem, there is little that they can do”. [A9] reflected the sentiment of micro business on this issue and described the disappointment of business owners about the excessive time and effort that owners have to spend with the bank to claim for the repayment incurred by the fraudulent transactions. Yet often they were advised by the relevant bank that that their claim for a refund had been rejected.

In light of increasing fraudulent online activities, it is expected that the number of complaints and disputes will rise accordingly. [A27] believed that awareness of fraudulent or unsettled transactions remediation processes and procedures needed to be
promulgated to all businesses especially to micro business owners. [A27] commented that “you buy anything online and they don’t send it to you, that’s it. And if you are going to complain … who are you going to complain to?”. [A27] added:

NSW Fair Trading don’t [sic] help you much. Because sometimes you have to write a letter and probably nothing is going to happen. And if I proceed with legal action then it costs too much. People run away with your money, when you take them to court you gotta [sic] to pay extra money.

[A23] suggested the need for further improvements in handling complaints and remediation. [A18, A14] cited the unsympathetic attitude of the financial institutions towards errors made by their clients as the main reason that their business still reluctantly retained the payment of invoices via cheques. [A18] commented further that “if I pay a person who is not the person I am supposed to pay, I can’t reverse it. At least with the cheque, you have at least three to five days to clear and if you make a mistake then you can cancel and stop the cheque”.

[A18] commented that “banks are generally unfriendly towards customers who suffer fraudulent electronic transactions”. [A18] experienced the unfriendliness of the banks during the investigation period and suggested that the banks should treat its customers in more reassuring way to allay the customers' worry during the investigation. However, [A18] concluded if the bank could not find the perpetrator of the fraudulent transaction, the owner of the card would be responsible to pay for the fraudulent transaction committed by a third party. [A18] also cited an example whereby a business paid someone online by mistake. Upon realising the error, the business owner attempted to reverse the transaction but he could not proceed with the reversal. Consequently, the business was unable to recoup the lost money since the party that received the money in error had no intention to return the money. [A22] cited concern about hackers penetrating banks’ information systems and stealing customers’ banking details. [A22] conceded that “It’s going to happen. It’s a computer and you can’t help that”.

[A24] highlighted the warranty and condition of goods issues when purchasing online, especially if the transaction was conducted transnationally. Sometimes “new” may not be new but a factory second product, which normally means goods with minor defects
sold at a discounted price. [A24] added that “you buy, you pass to the next person, the warranty is gone or goods purchased overseas may not have its warranty covered for Australia”.

Although financial institutions often deny accepting liabilities for these fraudulent transactions whether they occur domestically or trans-nationally, governments have an insignificant role to participate in these scenarios. However, a large number of participants concurred that “the government’s role is to make people aware of these dangers”. [A20] added that “I don’t think that government can play any role here. That is what the banks are there for but the government can negotiate treaties on how trans-national transactions can be disputed, mediated or resolved with other countries”. [A18] raised concern about trans-border transactions especially whereby disputes or remediation are involved.

[A23, A27] argued for a more efficient and agile Ombudsman to be established to resolve disputes concerning online transactions. Currently, [A23] believed that “NSW’s Consumer Affairs takes too long to resolve a dispute and online seller[s] will probably disappear during a prolonged dispute period. [A27] was of the view that its business was too small for Fair Trading to pay attention to its complaints and often it took a long time to get its complaints addressed.

[B1] explained that the directorate was established to facilitate low cost mediation for micro business because in most disputes, micro business owners did have time or want to go through the litigation process. He reasoned that without the directorate, it might cost business more to recoup the lost or disputed money because the business might need to engage legal firms to start legal proceedings. He explained that mediating staff at the directorate would firstly contact two parties usually by telephone and tried to mediate the two parties over the phone. With a failure to come to an agreement to settle, mediating staff would organise a face-to-face meeting between two parties in a mediation room at the Commission and helped resolve the dispute. In NSW, disputed parties are required by law to attend mediation with the Commission of Small business before taking the matters to a court or tribunal.
4.3.3 Policing policies

As more online transactions are being committed in Australia domestically and internationally, [A15] suggested that governments should play a policing role actively, making sure that government agencies, financial institutions and other large companies such as Internet and telecommunication companies comply with certain procedures and standards. [A15] proposed that governments should “police these Internet people, telephone communications and all those things which governments want us to do”. [A23] added that “there are so many different companies and so many different policies around and you get trapped. I know a lot of people who have been trapped in these sorts of contracts and it is a nightmare for them to get out of it”. [A15] reiterated the role that governments should perform: “simplify it, regulate it, making sure that services have to comply with certain procedures and standards”. [A15] expressed concerns about the subcontracting of services of large organisations and government agencies to external organisations, and highlighted the shifting of operating cost to the consumers.

[A20] raised concern over government actions: where government agencies have attempted to deal with the safety and security aspects of e-business, they have inadvertently made the technology very difficult to use because the degree of complexity that is involved in all aspects of security. [A20] elaborated further that combating fraud is major issue for the e-business community to tackle; however, some government websites have introduced overwhelming security features, such as changing passwords monthly, to protect the government, but not necessarily to protect the users or the technology. [A20] commented that even “my bank does not make me do that and there is far more at stake if someone hacks into my bank than they hack into my supply fee with the NSW government agencies”.

As the number of online businesses grows, there is a need to verify the identity and credentials of the business. [A20] highlighted the cost of accessing information from government websites about a certain business. [A20] commented that “I am looking forward to the day when you don’t have to pay a search fee to find out who the directors of the company are”. Prior to 18 May 2012, it was not a mandatory requirement in NSW
for a business that conducted its business in an online fashion to register as a business with the NSW’s Department of Fair Trading. Since the transfer of the registration of business to the federal Australian Securities and Investments Commission (ASIC), the government has closed the loophole where online business did not need to register previously. [A20] highlighted the risk of a business name being registered as an online Internet domain by a third party unrelated to the business. [A20] elaborated that “my big risk of having a business name that I have not registered, and if I am successful, somebody can come and steal my business name”. Currently, a business in Australia can only register an Internet domain “com.au” if their business is registered with ASIC. However, a business could register an Internet domain “.com” in the USA, then promote and use the registered Internet domain in Australia.

Banks and financial institutions have been working to improve the security of transactions in cyberspace. Use of electronic transactions has been growing and [A13] believed that “banks have been underwriting fraud to a certain extent”. However, [A13] believed that “organisations start to collect financial information about their customers and there are issues of security and privacy associated and that is scary stuff”. [A13] highlighted that “there are obviously issues where large companies have had their customer databases hacked”. [A13]’s concerns have been confirmed and materialised recently with statements from eBay advising consumers on “a cyber-attack that compromised our eBay user database, which contained your encrypted password”. This breach of security was propagated through to other online services such as Apple’s iCloud, PayPal etc… and might compromise the integrity of other organisations’ customer database and allow unauthorised access to these systems through the consumers’ password obtained from the eBay database. [A13] was not concerned that organisations stored consumers’ credit card details for future use. However, [A21, A23] strongly voiced their concern over this practice and proposed that the government formulate relevant policy to ensure that organisations take reasonable precautionary measures to comply with government directives and safeguard consumers’ credit and personal information. [A23] reflected that “there are millions and millions of websites and it is pretty hard to enforce”. [A13] believed that “government regulations in this space are difficult and all you can really say is buyer beware”. 
[A13] questioned whether “transactions with small amounts” warranted government interventions and investigating effort from bureaucrats. [A13] called for the code of practices for bank and financial institutions to be revised so banks would listen to consumers’ concern and assist in the remediation, arbitration and recouping of these small amount transactions under $2000. [A13] added that “sometimes I can’t work out where is that [sic] transaction comes from. I had a transaction on a credit card and I had no idea what that is, I have no record of it”. [A13] was quite satisfied with the federal government’s action when it intervened to stop eBay mandating that PayPal as the only type of payment accepted on the website.

[A13] raised concern about geo-blocking. Geo-blocking is an online practice that prevents shoppers in some countries from purchasing overseas products sold online. The restriction is enforced through the locality of an Internet numerical address of a computer or its network. Several companies, including multi-national companies such as Apple, Adobe, Microsoft and Amazon, are using geo-blocking to stop Australian consumers from purchasing similar products and services sold on their overseas websites at a cheaper price. A researcher from the Consumer CHOICE advocate group found that, on average, Australian consumers paid 37% more for computer games, 26% more for software, 52% more for iTunes downloads and 28% more for computer hardware than their US counterparts (Dalley, 2014). Although geo-blocking is a legal business practice, the federal government is considering the recommendations of the IT pricing and the Australia tax report conducted by a parliamentary inquiry. These recommendations included the removal of the importation restriction stipulated in the Copyright Act 1968, amending the Copyright Act’s anti-circumvention provisions to secure Australian consumers’ right when bypassing geo-blocking using tools and techniques available in the Internet, and creating a “right of resale” and “fair use” rights for consumers, businesses and educational institutions (The Parliament of the Commonwealth of Australia, 2013). [A13] elaborated:

When I was buying this printer... I went to HP to start with and found which printer I wanted. Went on Hp.com.au $1350 for the printer. [I] forgot it about for a week or two. Went back a couple of weeks later something prompted me to go on and there is the price what was it, I think it was $690 or something. It has come down. That was a time
when of course the Australian dollar was worth more than the American dollar so $690 meant $650…. That was the US price so they were selling the same printer in the US for $690 whereas for the printer available online in Australia was $1300.

Government policies are required on a number of issues, from the use of digital signatures on documents to on time payment of invoices. [A3] raised issues regarding the use of digital signatures. [A3] highlighted that “not everything can be done online because sometimes you may have to print out a form from the website… because you need signatures”. [A13] strongly suggested that there should be a government directive, at least at a state level to all government agencies to settle micro businesses’ invoices at least within 30 days. Although that there is a state government directive in place, [A13] added government agencies generally do not pay invoices on time because “they’ve lost the invoice or stuffed up something”. The late payment of invoices affect micro businesses more than their larger counterparts; generally micro and small business, due to their limited resources, undertake only one assignment or one project at a time and the income generated from the project is usually the only source of income for the business during the period of engagement.

[A13] highlighted the difficulty that many micro businesses owners faced due to the lack of understanding on how government bureaucracy works. [A13] vented his frustration and explicated that the state government is implementing a number of information systems on procurement of services that his business has to deal with and unfortunately these systems do not integrate with each other. The problem with the lack of integration between systems within a governmental department is exacerbated when a business has to deal with systems across several governmental agencies. [A13] highlighted the lack of organisational knowledge within government departments as this has become apparent to businesses in dealing with government officials. He added that “the procurement group within Commerce probably knew less about procuring than the reality of procuring stuff than anybody else. It’s interesting”. The lack of corporate knowledge coupled with standalone information systems has made it difficult for businesses and citizens to interact electronically with government. [A13, A20] believed that governments have made things far too complicated. [A13] elaborated “I mean the classic response to ITC2020 which involved purchasing an application which allowed
you firstly to read the tender document that you downloaded, and then formulated a response because it was actually a forms based thing that you had to fill in, encrypted the response so that the response was fully encrypted”. [A20] mentioned that

the result is it’s completely skewed to checks and balances of everything that could go wrong. I mean, if we applied the same thing to walking down the road, we’d never walk out the front door. So, you know, the government has a great ability to recognise risk to itself, reputational risk, financial risk and everything else but not very good at actually turning it into customer service. But, you know, their job is infrastructure and good front ends and interaction with communities themselves. They stick to that, rather than trying to tell us how to do our business, which is probably a step ahead.

[A13] proposed a feedback mechanism similar to eBay, where business and consumers provided feedback on the authenticity of a business. [A13] suggested that the government facilitate a verification process where an online business needs to display its credentials which might include an ABN, a physical address and perhaps a [dot com dot au] domain. The next section discusses the government’s human infrastructure programs to support the adoption of e-business.

[B1] echoed the positive sentiment of having “the Minister and the Commissioner represented small business in Parliament and government agencies”. He believed that the inclusion of the Minister who represented micro and small businesses in Cabinet ensured that laws or regulations passed by Parliament of NSW did not necessarily hamper the nimbleness of micro business nor introduce further red tape or unnecessary regulations affecting the micro business operations. [B1] further explained that the Commission had contracted a number of organisations to provide face-to-face meetings and mediations through sixty business advisors across the state and has tasked these organisations in each region with the local “know-hows” to identify gaps and needs of local business, and educational platforms to be provided to micro business in these areas. [B1] recognised that

locating these home-based businesses and actually talking to the owners is extremely difficult because they do not have entries on Yellow Pages. So you don’t physically find them in any essence. So, communicating with them is actually quite difficult.
4.4 How Do Australian Government’s Human Infrastructure Programs Foster the Adoption and Sustainability of the E-Business Within Micro Business?

As technology advances progressively pervade all aspects of micro business, [A24] believed that micro business owners needed to upskill themselves in ICT matters so they can deal competently and confidently with technology. This upskilling in ICT skills and knowledge in return helps business owners to better understand the impact and benefits of e-business to the business. In some instances, for family-run business or micro business under three employees, owners took on the role of IT support to avoid or delay the recruitment of dedicated IT resources to minimise operation cost. SME businesses experienced the shortage of information technology skill within the organisation. [A5] revealed that “No, just by myself. I am not an experienced user but I know what I need to do”. [A5] added that “if it was not for me because I have an IT background, the business would have to hire out an IT specialist”. SMEs nowadays rely on computers to function and [A5] concurred that “It’s just another cost of business that you must have to incur if you need that support”. [A18] highlighted the need for advice or a published register of computer or IT services organisations that are relevant for each industry to allay the business owner’s anxiety over the deployment of technology and improve their confidence in implementing e-business.

For micro business that were seeking skilled staff to sustain and grow their business, [A14, A22, A27] highlighted the lack of vocational training provided by educational institutions, especially at TAFE, in engineering, trade or manufacturing jobs. [A22] elaborated that the common advice from universities to students is “You don’t need to get your hands dirty, you should go and do IT, business, legal courses, etc….nice and easy, clean, good money. The trouble is who make this [piece of equipment]. They never see it”. [A22] believes that shortage of skills in these key areas is making it hard for businesses to employ young people. [A22] reasoned that “everything I make in this shop is about the thickness of your hair, .5 of micron. If you are not trained to use the machinery, it can rip your arm off”. [A27] further stressed “we have a shortage of tradesmen”. [A27] acknowledged that “we cannot pay them what they ask”. [A27] reflected on the sentiment of business owners towards staff recruitment and admitted
that “we are short of workers, we can’t find nothing [sic]. It is very hard to find a loyal and reliable worker. The government’s job networking is not working because most job seekers are lazy, just want to be on the dole, no skills and want to get high pay”. Much has been said about Australia’s needs to upskill the workforce. However, [A14] believed that Australia is “de-skilling” its workforce. The workforce as [A14] sees it would rather do a lesser skilled job and possibly obtain a higher paid job in sales or marketing rather getting vocationally trained in TAFE and other educational institutions. The shortage of engineering or tradesmen is a major obstacle for business to expand their business.

[A14, A22] conceded that a high and unsustainable hourly rate of payment in order to employ staff with required skill set is a concern of business owners. [A14, A22] cited the high cost of employing trades staff as a great impediment to the growth of their business. [A14] explained that “there is not enough money [for his business] and if they [his staff] make one mistake, I have to pay”. [A14] expressed his concern that “staff wages have become an issue … now there is a smaller pool of people, it becomes quite expensive”. He elaborated on the conundrum that the majority of businesses are facing on staff recruitment and retention issues. He conceded that “smarter people have left so I left [sic] with guys that are not so great that cannot produce as much but we have still to pay them an extraordinary good wages [sic] to keep them”.

Being a micro business has some advantages but also has several shortcomings. Staff turnover is a major concern for micro businesses and has affected the business confidence of the business owners. [A14] added that

I should have a workforce booming with people and yet I cannot progress any more than what I have. By the time I train somebody, he can go to work at Dick Smith and become their product manager. That sounded like an interesting job but when I go to see what he does, I say you are not a product manager, just open[ing] two hundred boxes and make sure that power leads [cords] inside the box is not a product manager… But that is the title and that is what they got.

[A14] highlighted the transient nature of micro business and he conceded “I am lucky at the moment but today is Tuesday by Friday all could change [if one or more staff
resign]. [A22] commented that “they should put more faith in the people here in the local industry. And they should, government should be made to source things made in Australia before they have to go overseas.”

[A22] observed that “it would be nice if the government develops more forward thinking and not just worried about the three years in power”. [A22] elaborated that “there is no new apprentices coming through, there is no new tradesman coming through, the skills aren’t there… It just produced people who push people and don’t produce anything at all”. [A22] was of the view that “the government always hides behind what-if, what if, what if and by then they get an election because they have done nothing they get kicked out and it’s another cycle”. As a micro business owner, [A5] was convinced that the government needed to disseminate and promulgate changes of technology through social media such as Facebook to businesses and promote best industry practices to its business constituency so business owners were made aware of new technology and new practices to sustain and grow their business. [A20] suggested that the government disseminate the information by way of communicating and giving business owners examples and demonstrating the benefits of technology, as well as steps to implement and use the technology. He proposed that “something as simple as YouTube, demonstrations of the use of a government service for example, to lead us through it, not just relying on the written word or whatever else. It’ll make life easier”. [A20] reflected on the drive of large businesses to outsource some of their workforce to offshore organisations. He highlighted the “missed-opportunities” of the skilled Australian workforce in gaining work in Australia as governments and large organisations seek to reduce their operational costs. [A20] observed “I don’t know. I guess at the end of the day it’s up to every business to, you know, to determine the level of technology that they need and obviously the government is going to cut it for people who can use it”. The next section discusses the perception of micro business owners on the telecommunications infrastructure and the government’s information systems.

[B1] pointed out that the trend in consumer buying behaviour was changing. Customers, especially the younger generation, were now equipped with information from Internet sources about the product or service that they wanted to buy and what the competitors
were offering. Consumers who usually came into a retail location already possessed the knowledge about who the competitors were, what the products were and what the price points around were. [B1] elaborated that “consumers may spend an hour or two online and they can read extensively about any given topic now and learn eighty percent of it”. [B1] highlighted the risk of information overload and reflected the dilemma or difficulties that micro business owners might face. [B1] believed that the role of the Commission was to advise business on a suitable course of action to start or grow a business. In light of the information overload, provided especially ad nauseam on the Internet, it was the responsibility of staff of the Commission to help business owners to distil the information in a tangible manner.

4.5 How do public telecommunications and information systems infrastructure encourage the investment and building of IT infrastructure of micro business?

[A9, A27] believed that the government should propagate information and educate business owners on government policies. [A13] advocated the role and responsibility of governments to inform and educate micro business owners and operators on how to use e-business. [A13] cited the lack of knowledge and understanding of technology as a factor impeding micro businesses to adopt technology. [A13, A20] suggested that the government could facilitate the improvement of IT literacy amongst micro and small businesses by using social media such as YouTube and Facebook as traditional classroom education was not suitable for time-poor micro business owners. [A13] explained that the piecemeal approach towards improving the IT literacy using social media is more effective than classroom attendance. [A20] believed that technology is absolutely vital and it has completely changed the way businesses operated in the last forty years. [A20] believed that “the speed of communication, the speed which [things] turn around...it’s all been very much driven by changes in technology” and he commented that the ability to communicate using the Internet, not only in this part of the world, but with people around the world, has been completely revolutionised and facilitated by technology. The Internet is considered by many as the e-business enabler. Given the importance of technology, the speed and cost of the Internet, [A21] fully supported the roll-out of the NBN because [A21] believed that Australia is behind the
U.S. in terms of adopting new technology. [A21] admitted that “when you go to [the] U.S. and all it’s so fast, so distinct, bang. So, that kind of thing is not here”. [A21] elaborated on the benefits that the high speed NBN would bring to his business, such as the ability to perform remote diagnosis and support of software applications and decommissioning costly legacy systems. Yet [A13, A20] believed that the benefits that the NBN might bring were marginal and they believed that the NBN would have a bigger impact on people dependent on the ADSL on copper wire as their principle technology, or in areas where they have not necessarily had good coverage. [A13] added that “the people that are going to benefit from the NBN are more likely the people in regional parts of the country who basically don’t have cost effective Internet connections now”. [A22] was less committed, saying “I can run on dial up Internet. It’d be nice just for the speed of it but other than that it doesn’t really affect my business”. [A20] added that it was more important that the government is responsible for making sure that there is price competition in the markets. [A20] believed that “part of the problem that we just discussed about cable and everything else is because the way different models interact with each other, they’re not customer friendly, they’re focused on the needs of the suppliers to sell particular types of technologies, different places and some of it is to do with rights to various types of media”.

[A13] reflected on the difficulty of searching for information on government websites. [A13] admitted that he has had better success in using Google to search for information published on government websites rather using the “on-site” search option provided by the agencies’ websites. He commented that “if you go to their [the government] website you’ll never find anything because it is so big and so badly organised over the years that it’s impossible to find anything”. [A24], [A18] confirmed that the practice to register and advertise the business name in the Yellow Pages publication is soon to be outmoded and that businesses will need to advertise their name online as the Yellow Pages online version has now become a commercial entity, its user pay policy may hinder small business to maintain a presence on the Internet.

[A20] believed that the majority of government solutions have been very techno-centric and he proposed that the government should involve and consult micro businesses in the
design of the systems prior to their rollout; recognising and identifying ways in which it can make life easier for micro business. [A13] also called for the government to process re-engineer its information systems across the whole of government, enhancing them where practical so they can be more user friendly and data searchable. He believed that in order to effectively engage with micro businesses, the Small Business Commission and the government across the board needed to get their own information systems in place and the integration of several systems might present a significant challenge in many respects for the federal and state governments.

[B1] confirmed the government’s support of micro business in the uptake of e-business which was no longer just a tool to help business to grow and remain competitive; it was also a strategic weapon for the survival of business in the digital age, especially for regional micro business. [B1] confirmed that it was extremely important for the government to support the push for small business to adopt e-business. He believed that in regional Australia, where a lot of micro businesses were, government advisors needed to equip themselves with regional relevance and the ability to reach a broader audience to provide business with advice in a timely manner. He perceived a shift in focus from geographical isolation to products and service differentiation. As the dynamics of commerce has gradually shifted from localisation to differentiation of products or services, [B1] highlighted the need to educate micro business “to change from thinking geographically, to thinking differentially”. [B1] also reported that the government was acutely aware of post implementation problems that micro business might face after the business decided to adopt e-business and opened itself to the digital age. [B1] recognised that small business might not be able to handle the deluge of information and securely maintain it when its information systems exchanged data with other organisations.

[B1] believed that “there is market research and the focus on SME’s but it was always the high S to the Ms. Never the [low] S to what they call the micro”. [B1] elaborated that the Commission expected that fifty percent of business owners that came in contact with the Commission would develop a business action plan. Out of the expected 50 per cent, the Commission set a target that 25 per cent of the business would act on their
business plan. This 25 per cent target was considered a key performance indicator to measure the effectiveness of the Commission in performing its functions. [B1] explicated that advisory staff based at the remote business centres were paid on an hourly rate with a specific fund allocation. The Commission has been working on the contractual KPI for these remote centres that will include client satisfaction, the number of business action plans that have been developed and the number of action plans which were actually acted on. The KPIs will be reviewed and revised on a yearly basis. The next section provides an in-depth analysis of the findings outlined in this chapter in response to the five research questions.

4.6 Analysis

In this chapter, findings from interviews of owners of micro enterprises are critically analysed, compared and contrasted with the interview of the Commission. The analysis was undertaken within the context of the NSW economy bounded by regulatory frameworks of federal and state government.

1. What are the adoption factors that affect the decision of micro enterprises owners to adopt e-business

It was evident from the literature review that micro business plays a vital role in the economy of NSW. The state government (represented through [B1]) has recognised the importance of the sector, taken stock of past policies and programmes aimed towards small business, and has taken corrective measures aiming to deliver more focused services to small businesses. The research findings confirmed the dominant role of the micro business owners in the adoption of e-business. Participants who were IT-literate and in high-knowledge industries were more likely to adopt e-business than their counterparts [A5, A9, A13, A14, A18, A20, A21, A23, A27]. This finding was in line with the task-technology fit theory, as outlined in Section 2.3.3, in which new practice was considered part of their business activities. The research also confirmed that a participant’s business will decide to adopt e-business when there was a genuine demand from its customers or suppliers, or if it is mandated by government agencies [A14, A18,
This observation was consistent with what was outlined in the discussion of Institutional Theory in Section 2.3.2. The government through [B1] believes that external forces - especially market competition and market conditions, and the changing nature of market due to technologies - are vital factors for small business to consider the adoption of e-business to gain the competitive edge.

Two participants whose businesses are not in non-professional services industries [A14, A22] were generally not aware of the benefits that e-business could bring to their business. All but one participant ([A23]) were unconvinced that the benefits of implementing e-business currently outweighed the implementation cost, as well as the loss of time that they and their employees spent on installing, learning and operating the system. They indicated that their business has no immediate plan to neither implement nor expand the system beyond its current capabilities. However, there was only one participant’s business that implemented a comprehensive website from CRM to stock control and online ordering. The entire website and systems were decommissioned two years later due to mounting costs in maintenance and support of the software, outweighing the perceived benefits it was supposed to bring.

As identified in the literature review, new technologies emerging, especially in smart devices and cloud computing technology, promise to deliver new capabilities and more cost effective and affordable solutions to e-business. Businesses no longer need to procure expensive hardware and software, recruiting or engaging IT professionals to design, configure and maintain the systems. At the same time, the development of applications on tablets and smart devices will create a new level of user experience for the consumers. Two participants revealed that they were sceptical about the benefits of e-business, however all participants were more concerned about the complexity, cost and time of implementing e-business. Until the benefits of implementing e-business were well articulated, explained and promulgated, all participants were happy to maintain the status quo and did not perceive that the adoption of e-business as a matter of priority for the business. The research found that perceived benefits of e-business appeared to be dominant factor in encouraging small business to adopt e-business. User resistance played a major role in the decision-making process within a business and this
finding further emphasises the need for governments to promulgate the benefits of e-business and success stories to business owners so as to counter the negative effect of user resistance. This finding confirmed that user resistance remained the biggest obstacle in the implementation of new practice or technology in small businesses and was hindering governments efforts to alleviate or remove resistance through better communication channels and programs. This finding is in line with User Resistance Theory expectation (see 2.3.4).

Half of the participants raised other external factors, such as lack of competition in the market, unsophisticated supply chain and lack of customer growth as impediments to the decision to adopt e-business. With the exception of high knowledge professional services (Pickernel et al., 2013), [A13, 20, 21, 23], which are niche based, the remaining participants still had a strong mindset that their customers were local to the community. The government is aware of this mindset, however there has been no broad scale awareness campaign to educate and influence the mindset of business owners. Until such time that obstacles to the adoption of e-business are addressed and the benefits of e-business are clearly articulated, all participants have indicated that they will not proceed with the implementation of e-business. The research found that, unless the benefits are clearly communicated and industry-specific, general information on the benefits of e-business are not well received by micro enterprise businesses. However, these factors were largely not within the realm of government control although effective government policies could lead to changes in these areas.

2. How are government support and services in e-business perceived by micro business?

The government has recognised that the benefits of adopting e-business needs to be promulgatewayd widely to the small and micro business community. The government has established small teams at regional areas to provide face-to-face communication with micro business owners and allow a more customised and focused advisory service. All participants indicated that they did not see the need to interact with government agencies unless they were forced to. However, if advice was to be sought, they considered government agencies to be the trusted source of advice. The government
believed that they understood small business but finds that it difficult to locate micro enterprises. In contrast, a majority of participants indicated that they wanted less government interventions in their business operations. Half of the participants mentioned that the electronic reporting of the Business Activities Statement (BAS) has costed their business unnecessary expenditure and that the government should address this issue to help businesses further reduce their operational cost.

The government has been changing its strategy towards “micro” managing micro business. While the government has been refocusing its programs towards a face-to-face communication and on a case-by-case success, 60% of participants advocated a need for a state-wide awareness campaign on the perceived benefits of e-business to the business. However, the majority of participants believed that the government should use a macro approach in communicating with them. They advocated the use of social media as an efficient way to communicate with business. The government recognised that the business community is overloaded with information. All participants agreed with the assessment; however they indicated that when information is required, they preferred to have the information fast, easily accessed and searchable. Nevertheless, a large majority of businesses agreed that government systems and portals are excessively technocentric, lack user-focus and difficult to use.

All participants strongly agreed that instead of trying to “tell business what to do”, government should remain at a high level and manage macro level issues such as taxation, reducing red tape and fostering competition in the market. They believed that increasing funding to industry bodies to undertake and provide advisory services, and researching benchmark cases in their own industry was the best way to encourage business to adopt e-business. Two participants remained unconvinced about the government’s advisory role since their staff are not industry experts and their role is best fulfilled by the industry body that represents the business.

More than half of the participants reported their negative reaction when they used or accessed government’s portals or systems. They conceded the dominant position of government in coercing small businesses towards the adoption of e-business. The
participants believed that “they have no choice” if forced to, however they echoed their resentment towards this strong-handed approach, as the implementation of e-business might incur unnecessary and additional cost to the business.

A number of small business owners in the Professional services industry who have dealt with government agencies and their portals system believed that the government should lead by example. If the government is advocating for business to develop a proper business plan of business processes to deliver better customer services, then the whole government should “preach what they teach”. More than half of the participants echoed the unfriendly, unwieldy and cumbersome nature of government systems, which are more focused on risk avoidance than delivering better customer experience.

The majority of participants perceived that the government machination is bureaucratic and that its policies and systems do not help micro business operate and grow. Most owners expressed that they have little interaction with governments and in fact do not come in contact with governments apart from lodging their quarterly business statements with the Tax Office. Those who have had dealings with governments cited the disconnectedness of information and systems between different government agencies and the unfriendliness of government front-end applications. They were of the view that the government put more emphasis on risk reduction rather facilitating services, that and its policies were mainly based on the electoral cycle rather than genuinely addressing the needs of micro business.

Participants have called for government agencies to be less focused on individual business and to start working on coordination between different levels of governments, between Australia and the rest of the world, between federal and state levels, between government and large organisations, especially with financial institutions to streamline their processes and reduce red tape. It is vital that state and federal governments coordinate their strategies and actions on reducing double handling procedures and ensure that regulations or laws are introduced to assist business as a whole and micro business in particular. Privacy and confidentiality of data, development and certification of payment gateways software, and overcoming geo-blocking imposed by some
overseas websites were raised by a number of participants as important issues for their business. These issues are within the federal jurisdiction; however they require state coordination to fully implement the solutions. The majority of participants were of the view that the government should look into its own systems across departmental agencies to make access more integrated and user friendly. Micro businesses believed that instead of trying to help micro business, the government should help itself in the drive for better access to its e-government initiative which will in turn help micro business to interact with its e-government portals. In short, businesses are calling for governments to help themselves before helping others.

The disconnectedness between federal and state agencies and between different state departments was the major concern of micro business. Often incongruous policies from different agencies created red tape that micro business had to bear and overcome. Feedback or issues at the state level might never get across the state boundaries and the issues might never get raised or communicated to the federal level, where most policies involving financial transactions are formulated.

Much of the frustrations raised by micro business were directed towards systems used by financial institutions. As businesses use more and more electronic payment, current payment systems do not possess the capability for businesses to rectify erroneous transactions once the payment transaction is committed. Obviously the government does not have direct authority over what the banks can do, but the government could initiate some voluntary code of practice or introduce regulation to ensure that financial institutions modify their systems so that consumers, especially businesses can reconcile their financial transactions in a simple manner.

Micro businesses have asked the government to oversee or fund a number of IT development standards, especially the development of payment gateways software, standards in software platforms and applications and in the creation of a recommended ICT list that included all potential companies that micro business could call upon. In some industries, micro business owners believed that government funding to appropriate representative industry bodies is warranted to facilitate the work on the
specification of development standards for payment gateways, assessment and recommendations of software within industry sectors, and a recommended list of companies that micro business could call upon to provide ICT service.

Fraud in electronic transactions is increasing and there is demand for a fast and simple remediation process. The Commission has created a separate directorate to be responsible for Remediation and disputes. No participant was aware of this directorate. NSW Fair Trading was mentioned as a venue to address complaint and reporting of fraudulent or dishonoured payments however, participants who had dealings with NSW Fair Trading believed that its remediation processes were cumbersome and time consuming and the delay was exploited by some unscrupulous businesses to avoid settling of payments. Secondly, the Remediation directorate only mediated between two businesses but not between a business and its customers. Business owners were generally aware of the role of the Ombudsman and agreed the government should promote and fund its operation to support and monitor the effectiveness of the government’s current policies, especially those policies developed to reduce or eliminate government red tape or ensure the government agencies adhere to government policies. Micro businesses have asked governments to ensure that future government projects include mandatory participation of micro business where practical. This misalignment in communication presents a conundrum for the government and it appears that this “cat and mouse” game will continue in the future.

3. To what degree that Australian government’s regulatory framework, trust and financial infrastructure influence micro business’ owners in adopting e-business?

All participants indicated that they were not aware of any legislation that might impact their business. Almost half of interviewees agreed that the government should be stronger and more active in the monitoring and policing role. They advocated the need for the government to either introduce policy to force financial institutions to improve their client banking system to better serve their business customers or develop standards in a number of growing areas of e-business such as identity and document management, financial payment gateways software, and customer data retention. However, two participants [A21, A23] cautioned about the problem of over-regulating. They
advocated that self-regulation is a better option, however they believed the government should play a lead role. While the issues mentioned above fall within the jurisdiction of the federal government, the state government needed to put strong emphasis on inter-government communication to ensure state issues are communicated to the federal government.

There were a number of emerging issues that some participants were discussing: geo-blocking, confidentiality of data, digital signature, proximity charge and automatic capturing of credit details for future invoicing without the permission of the card holder. They also raised their concern on the indirect cost shifting to business from government agencies. Government and big businesses have been continuing at an unabated speed to outsource their non-essential services, such as call centres or technical support services, at the expense of consumers as a whole and small business in particular.

Two participants [A14, A23] reflected on the ebb and flow of government policies during the electoral cycle and felt that this uncertainty impacted on the decision to adopt e-business. However, all participants unanimously agreed that government advice was the most trusted source of information. The government is aware of this perception and has established mobile and regional teams to facilitate communication between governments and its business constituents. Nevertheless, the majority of participants believed that the government does not have a good understanding of their business and business advice should be better delivered by industry groups or business network. The success of the regional teams remains to be seen since the KPI of these teams are still being developed. They believed that the government should use its credibility as a trusted source to run awareness campaigns to disseminate the benefits of e-business, and highlight the danger of buying and selling online.

[A9, A14, A27] reported an increase in fraudulent activities domestically and internationally. They were advocating for a more agile Ombudsman who could resolve complaints and mediation in a speedy manner. The Commission has established a Mediation and Resolution unit to resolve dispute between two businesses, however the scope of this unit might need to be expanded to cover disputes between business and
consumers and disputes on trans-border transactions. Some participants made a general observation that the machination of government was slow and that it took time for the “giant” to change its course.

4. How do Australian government’s human infrastructure programs foster the adoption and sustainability of the e-business within micro business?

The government of NSW has been transforming its economy towards a more service-oriented economy and Tertiary and Further Education (TAFE) no longer conduct courses in mechanics and manufacturing. This has created a skilled resources shortage and reduced confidence of business owners in these industries. The majority of participants highlighted the shortage of skilled resources and IT trained graduates. The research found that participants with IT-background were far more supportive and proactive in the decision making process to adopt e-business.

The lack of software development standards in applications was another area of concern that was raised by a few interviewees [A14, A21], especially with respect to software applications that were used for financial transactions or storage of personal and confidential data. While the government will need to take a balanced view between standards development, enforcement and fostering a dynamic software development industry where standards are lacking, it will need to work with major financial institutions to introduce or develop a minimum standards that software developers need to adhere to and can be enforced by the financial institutions. As the trend to off-shore hosting by a number of businesses continues to grow, the storage of data off-shore by some businesses was raised by [A23]. This issue highlighted the need for governments to introduce guidelines that require businesses to disclose to their customers where their customers’ data is kept.

One third of the participants were also concerned with the high wages paid to their employees. They explained that lack of competition, low profit margin and high wages cost have damaged the viability of their business and consequently any attempt to implement e-business had to be cancelled or delayed due to lack of funds.
Staff turnover is high in manufacturing and transport industries. Some participants indicated their concern about the difficulty of finding replacement staff for the business. The skilled staff shortage has reached endemic proportions. Micro businesses found that the government has not done enough to attract and train young people to possess skill sets that micro businesses need. The economy is trending strongly towards service rather than manufacturing therefore micro businesses in manufacturing, engineering or mechanical industries can no longer recruit staff with relevant skill sets. Staff wages are also reasonably high which makes it uncompetitive for business to recruit and hire [A20, A21].

5. How do public communications and information systems infrastructure encourage the investment and building of IT infrastructure of micro business?

Two participants expressed their interest in the rollout of the NBN. However the remaining participants remained happy with the current speed of the Internet. Nevertheless, this will change in the future when more sophisticated applications come on board. Almost all participants agreed that government systems are unfriendly, difficult to use and that is difficult to search for information. In some notable circumstances, interfacing with government portals has costed businesses unnecessary cost. Business experiences doubling data entry from one government agency to the next. Governments will need to step up their effort in introducing a ‘one-stop shop’ to streamline the interface between the government bureaucracy and their citizens, between different levels of governments, and between governments and businesses. Service NSW is an important first step in providing a one-stop shop for NSW residents to interact with the government of NSW. That said, the initiative needs to be taken up to the next level so that entries to all government agencies’ websites and applications are fully integrated in order to avoid multiple data entries.

[A14, A18, A20] also raised their concerns about the monopoly of a number of software applications developers and suppliers that are charging unreasonable fees to implement
government initiatives such as taxation and new regulations. The inaction of governments on these issues further increases the level of user resistance of business owners and produces a negative influence on owners with respect to future adoptions of technology projects.

[A13] raised concern about the privately-owned Sensis (Yellow Pages). [A13] highlighted the need for a government-owned or sponsored free business directory which contains sufficient information for business contact, registration and identification to allow all businesses in Australia to be listed in that directory. This register can also be used to verify the authenticity of a business prior to any commercial transaction taking place. At this point, there is no mandate for Sensis to provide these services free of charge in the future. As far as the NBN is concerned, micro businesses perceived that the rollout will have little impact on their business especially in the urban and regional areas. They believed that the current speed of the Internet is sufficient to support their e-business operations.
5. CONCLUSION

As the rate of adoption of e-business in Australia as a whole and specifically in NSW remains stagnant (Sensis, 2012), the research aimed to discover whether a possible disconnectedness or misalignment between government initiatives and the needs of micro enterprises exists. Its primary objective was to conduct an in-depth qualitative research on the perception of NSW micro business on government-induced factors influencing their decision to adopt e-business within their enterprises. The research sought to identify adoption factors that the NSW state government should continue to develop, foster or work together with the federal government. It also sought to highlight inducing factors that have negligible or adverse effect on the adoption of e-business. Five research questions were formulated and researched through in-depth interviews, findings are analysed in the preceding chapter.

In terms of adoption factors, the research confirmed that the perception of benefits of e-business is a significant factor in encouraging micro enterprises’ owners to adopt e-business. This finding is in line with findings from other researchers detailed in section 2.4 of the literature review. However, the research found that the government messages in promulgating the benefits of e-business to micro enterprises will need to be industry-specific, easy to understand and available on all media; especially on smart devices such as mobile phones and tablets given that these devices are the most popular devices with business owners.

The research confirmed that the industry-type is a significant determinant of the adoption of e-business. This finding is in line with findings from studies of Alshamaila et al. (2013); Chong et al. (2009a); and Mehrten et al. (2001). The research supported the findings from Goode (2002); Pollard (2003); and Stockdale and Standing (2006) that the IT skill of the business owners is also a significant factor. The research found that an unsophisticated supply chain remains the most significant barrier to the adoption of e-business. This finding further supported the finding of other studies, conducted worldwide on the impact of supply chain management on the adoption of e-business (Chen and Holsapple, 2013). The research also found that participants whose business does not have e-business have no intention to adopt it and those businesses that have
basic email and websites have no intention to implement any e-commerce. There is evidence that businesses that implemented the latest technology have to decommission their systems due to economic reasons (Ronil, 2002). The finding gave support to the Sensis (2013) report in explaining the reason for the stagnant proportion of SME intending to implement e-business remaining unchanged at 6 per cent.

In terms of perception of government support, the research found that there is no significant link between government support and the rate of adoption in Australia and NSW in particular. This finding lends its support to the findings that Small business in Australia requires less government intervention and support than those in developing nations. This finding is in line with conclusions from Chong (2008); Chong et al. (2009a); and Pollard (2003). The research confirmed that micro business owners consider the government a trusted source of information when they need information. This finding is in line with conclusions by Burgess et al. (2011) and Carter and Weerakkody (2008) on the trust that businesses and consumers place upon governmental and semi-governmental agencies on the accuracy, reliability and veracity of the information provided to them.

Past Australian federal and state governments have worked towards e-government. The research found the support from micro business for e-government. This finding is in line with conclusions reached by Alzougool and Kurnia (2008) and Clark (2003). It was a surprise finding that participants have all agreed that instead of government spending funds and expanding effort to help small business, the government should instead use that funding and effort to address the disconnectedness of government systems. All participants suggested that instead of micro-managing small business, the government should concentrate on macro level issues such as taxation, reducing red tape and stimulating competition to induce a more sophisticated supply chain. This finding is in support of the recommendations by Clark (2003, p. 385) that “citizens are far more interested in having e-government presented by function as opposed to department and this may require significant integration and reorganization”. The research found that the high cost of domestic transport is a significant barrier to the adoption of e-business and this finding is in line with conclusions from Travica (2002).
The study found the current government systems are techno-centric, lack user focus and are more skewed towards risk avoidance. This finding supports the conclusions from Clark (2003, p. 391) that “security can be premised on the old military model of limiting access point. New mechanisms must be used that restricts clients from using certain resources or doing certain types of operations based on how they accessed the system”.

In terms of regulatory framework, all participants agreed that the government needs to step up its effort in ensuring that government policies are not simply changing along with the electoral cycle. Regular changes in government policies affect business owners’ confidence and hamper the owners to invest substantially in technology to improve the business workflow of their business. The research’s finding is in support of conclusions from similar research studies mentioned in the literature review (Alzougool & Kurnia, 2008; Zhu et al., 2003).

The research also found that the government needs to adopt an active role in enhancing or implementing regulation on data retention, identity management system, removing geo-blocking and facilitating dispute resolution across different states and different countries. Financial institutions as part of the supply chain also need to enhance their client front end systems to help businesses weening off the cheque payment system. This finding is in line with conclusions from Alzougool and Kurnia (2008) that government interventions have positive impact on the adoption of technology.

The research found an overwhelming consensus amongst all participants that the government needs to take a leadership role in promoting software development standards to facilitate interoperability between disparate computer systems; this finding is in line with conclusions from research conducted by Dibakar et al. (2011). The research found that there is a positive relationship between the “perceived industry standards” by business owners and the intention to adopt e-business (Alzougool and Kurnia, 2008, p. 7). It also found that business owners noted that any development or implementation of standards should not impede the adoption of e-business which
finding supports the view that excessive pressure to adopt standards could diminish any value that standards may bring (Terlaak, 2002).

As far as human infrastructure is concerned, the research found that skilled resources in IT, vocational and trade sectors are diminishing and the education system is no longer providing training for these skills. The lack of skilled resources remains the most concerning of issues of micro business and without these vital resources; businesses are delaying their expansion fearing a lack of human resources. The study also found that providing IT training courses to small business owners on ICT and new technology in turn boosts the confidence of the business owner to adopt e-business. This finding is in line with conclusions reached by Nguyen (2009, p. 168) as “human capital is the foundation of growth, profit and survival” of any business.

With regards to communications and information system, the research found that the increase in bandwidth provided by the NBN does not significantly influence the decision to adopt e-business. The research found that the availability of the government’s IT and information systems infrastructure has negligible impact on the adoption of e-business. This finding contradicts the conclusions from existing literature on the importance of the readiness of the national infrastructure (Alzougool & Kurnia, 2008). However, this aberration could be explained as those research studies affirmed a strong linkage between the government infrastructure and the adoption of technology were conducted in Vietnam (Huy & Filiatrault, 2006) and in Korea (Jeon, Han, & Lee, 2006).

Overall, the research found that the establishment of a Small Business Commission is a step in the right direction in providing a targeted message to micro businesses’ entrepreneurs. The government will need to concentrate on creating a more sophisticated supply chain and provides leadership through e-government. The government needs to embrace the whole-of-government approach in e-government to avoid the silo effect whereby data collected by government agencies remain departmentalised. The State government will need to work closely with the federal government on regulatory framework to ensure regulations are implemented nation-
wide and transnationally as e-commerce activities increase. The government will need to work on equipping its work force with the necessary skills that micro businesses need or facilitating the transition of some industries to other profitable industries.
6. IMPACT

The findings/results of this research help to fill the gap existing in current literature about the role of governments with respect to the adoption of technology in micro businesses. In this research, government-induced factors that may influence NSW micro business owners’ decision to adopt e-business were investigated and reported on. This research aimed to identify the adoption factors that the NSW state government should continue to develop, foster and coordinate its initiatives in this area with the federal government in order to refine their strategy towards the continuous development of its e-government initiatives.

The report highlighted that there is no direct link between government incentives and funding and the rate of adoption of e-business in small businesses in NSW. This finding probably explains the scarcity of literature explaining the role of governments in the adoption of technology in small businesses, given that government initiatives and regulations are regarded as an important external factor in the introduction of any new technology or practices in businesses, as outlined in the TOE and the Institutional theories. The finding implies that government initiatives are insignificant in the long run even though they may play a small influencing role in the initial phase of the implementation of e-business.

The research found that almost all small businesses have email and that owners communicate with governments, suppliers or their customers using their personal or business emails. Small business owners are still hesitant to install a website or any other applications owing to the relatively high cost of support and maintenance, limited exposure of their websites to their potential customers, and the shortage of IT skills within the business. This finding confirmed that a majority of small businesses in NSW use their email to communicate with their suppliers and their customers. Not many micro businesses expand their e-business technology to include a website and other Internet-based applications (such as payment gateways, customers’ databases) unless the need to have such applications is forced upon them by their customers, suppliers or governments at all levels. The research found that, in some industries, small businesses have to incur additional expenses to modify their software to comply with government
regulations such as GST and taxation. Furthermore, some software suppliers are changing unreasonable fees because of their monopoly position in the markets. This finding will hopefully help governments to understand the impact of constant changes of regulations that force small businesses to incur additional costs, with no direct benefit to their businesses. The government can play an active role in directing its financial support to industry or peer groups that support the industry concerned and this support would allow the industry to oversee and coordinate the modification of any software as a one-off exercise. Alternatively, the government may assume the overall responsibility to oversee and signoff the specifications to ensure development standards are being adhered to and future proof the modifications. This will minimise the cost for small business with respect to implementing government changes, thereby resulting in small businesses being appreciative of government support and thus more willing to interface with government computer systems. This is important because the research identified cost and complexity of technology as the biggest impediments to the implementation of new technology.

As outlined above, the research gives strength to the notion that unless the perceived benefits of e-business are acknowledged and understood by small business entrepreneurs, small firms will not adopt e-business. To encourage business to adopt technology, the report found that governments at all levels need to design an effective communication program to promulgate the benefits of e-business. It was found in this research that passive, asynchronous communication, or the use of social media such as short YouTube videos and success stories, are preferred by most small businesses owners in the initial phase. This finding supports the notion that micro business managers are time-poor and have limited financial resources.

As outlined in the research, it is important that the NSW government steps up its effort in implementing its e-government initiatives. The Service NSW one-stop-shop is a great initiative. However, the research reported that a large majority of small businesses found that government systems and portals are cumbersome, excessively techno-centric, lack of user focus and are difficult to use. This perception is further compounded by the segregation of federal and state-based systems. It is therefore hoped that the findings of
this research will help state and federal governments’ policy developers to establish new policies or refine existing policies, regulations and programs in order to bring better outcomes to the micro enterprise sector and the SME as a whole. This will allow the government to improve and synchronise its communication to the business community at large, streamline its bureaucratic processes and enhance governance and performance of current programs.

The research also found most governmental issues facing small businesses are federal-based issues from taxation, GST, resolution of transactions with financial institutions, geo-blocking and remediation of dishonoured transactions. The respondents of the research noted that there is very little interface between state institutions and small businesses in NSW, and it is hoped that the outcomes of this research can help the NSW State government and its policy makers to gain a better understanding of the dynamism of the NSW micro enterprises from their perspectives. This can be realised through working with its Commonwealth counterparts on relevant issues to promote the adoption of e-business nationwide, and to NSW businesses in particular.

The research also found that the shortage of technical and vocational skills is the biggest concern for the manufacturing and engineering sectors as the majority of workforce is gearing towards obtain skills in the service industry. Small businesses that wanted to implement new technology are faced with staffing problems owing to skill shortages in IT. This problem exacerbates the reticence of the owner to adopt e-business. This report highlighted the need to ensure the availability of technical and vocational training facilities like TAFE in NSW to meet the demand of IT training required for small business to adopt technology and support its use in the long run. The report also highlighted the need for fostering a strong peer network or peak industry groups to provide advice to small business on technical or standards-related issues, and be the industry representative voice on issues that may impact on businesses in their respective industries.

As the research was conducted only for NSW micro businesses, future research could conduct similar studies for all Australian micro enterprises or for all SMEs. It will add
to the body of knowledge if research is conducted across a number of developed countries in the OECD or if comparable studies are carried out between developed and developing countries. As new internet technologies have emerged in the past two years, such as smart phones and cloud-based computing, the cost of implementation of technology will be more affordable, the dynamics of business may change and research may need to be conducted to reassess whether the cost of the implementation still remains the largest barrier to adoption.

From a theoretical standpoint, the research was conducted based on external factors proposed by the TOE theory. The research found that user resistance issues number as many as the acceptance factors and, as a consequence, the use of the TOE is not adequate to explore the inhibiting factors that discourage small businesses from adopting e-business. The research recommends that a hybrid TOE/User resistance be developed to investigate the implementation of technology in small businesses.

Future research is also required to develop a key indicators framework to measure the success of the government programs. In addition, this research can be used as a foundation to conduct future research on a nation-wide basis or abroad given that each jurisdiction may have its own idiosyncratic environment and regulations.
7. REFERENCES


MacGregor, R., & Vrazalic, L. (2008). ‘The role of gender in the perception of barriers to e-commerce adoption in SMEs: An Australian study’. University of
Wollongong in Dubai-Papers, 15. Wollongong, Australia: University of Wollongong.


8. APPENDICES

8.1 Appendix A – List of Interviewees

<table>
<thead>
<tr>
<th>ID</th>
<th>Industry</th>
<th>Industry Classification</th>
<th>Type of SME</th>
<th>Stage of Adoption</th>
</tr>
</thead>
<tbody>
<tr>
<td>A5</td>
<td>Real Estate</td>
<td>Real Estate</td>
<td>Micro Enterprise</td>
<td>Email/Web</td>
</tr>
<tr>
<td>A9</td>
<td>Retail</td>
<td>Retail</td>
<td>Micro Enterprise</td>
<td>Email/web/portal</td>
</tr>
<tr>
<td>A13</td>
<td>IT Management Consulting</td>
<td>Professional Services</td>
<td>Self – Non employing</td>
<td>Email/web</td>
</tr>
<tr>
<td>A14</td>
<td>Mechanics</td>
<td>Technical Services</td>
<td>Micro Enterprise</td>
<td>Email</td>
</tr>
<tr>
<td>A18</td>
<td>Medical General Practitioner</td>
<td>Healthcare</td>
<td>Micro Enterprise</td>
<td>Email</td>
</tr>
<tr>
<td>A20</td>
<td>IT/Legal/Contract Management Consulting</td>
<td>Professional Services</td>
<td>Self – Non employing</td>
<td>Email/web</td>
</tr>
<tr>
<td>A21</td>
<td>Human/IT Resources Recruitment</td>
<td>Professional Services</td>
<td>Micro Enterprise</td>
<td>Email/web/portal</td>
</tr>
<tr>
<td>A22</td>
<td>Engineering</td>
<td>Manufacturing</td>
<td>Self – Non employing</td>
<td>Email</td>
</tr>
<tr>
<td>A23</td>
<td>Online Marketing Information Media/Website development</td>
<td>Professional Services</td>
<td>Self – Non employing</td>
<td>Email/web</td>
</tr>
<tr>
<td>A24</td>
<td>Physiotherapist</td>
<td>Healthcare</td>
<td>Micro Enterprise</td>
<td>Email</td>
</tr>
<tr>
<td>A27</td>
<td>Car Smash Repair/Insurance</td>
<td>Technical/Transport</td>
<td>Micro Enterprise</td>
<td>Email</td>
</tr>
<tr>
<td>Pilot</td>
<td>IT/Web development</td>
<td>Professional Services</td>
<td>Micro</td>
<td>Email/Web</td>
</tr>
<tr>
<td>Pilot</td>
<td>Business Research</td>
<td>Professional Services</td>
<td>Micro</td>
<td>Email/Web</td>
</tr>
</tbody>
</table>

The ID is allocated based on the ID of the audio file recorded and transcript prepared for each participant to facilitate easier traceable path between each participant and its data.

PROFILE OF INTERVIEWEES:

A5 – Male, Part-owner of a family business in Real Estate that has a total of 3 staff including A5. A5 has a degree in IT. The business opens 6 days a week, 9am – 5pm Monday to Saturday.
A9 – Female, owner of a small family business suburban supermarket specialised in Asian food and warehousing for importing goods. The business employs 4 staff including A9. A9 has a degree in Telecommunications. The business opens 7 days a week 7am – 7pm Monday to Sunday.

A13 – Male, sole owner and principal of an ITC management consulting firm. A13 has a degree in IT and business management. Business opens 5 days a week, Monday to Friday 9am – 5pm.

A14 – Male, owner of a Car Mechanics repair shop who employs 3 staff including A14. The business opens 6 days a week Monday to Friday 7am – 7pm and Saturday 7 am – 4pm. TAFE trained.

A18 – Male, Medical Doctor who runs a private surgery with another doctor and a receptionist. The business opens 7 days a week Monday to Sunday 9am – 6pm.

A20 – Male, sole owner and principal of an IT management/Legal/Standards consulting business. A20 has a degree in IT, Law and Engineering. Business opens 5 days a week, Monday to Friday 9am – 5pm.

A21 – Male, manager of an HR IT recruitment/project management business. The business has 3 staff. The business opens 7 days a week Monday to Friday 9am – 6pm.

A22 – Male, sole owner of a Precision Tool manufacturing business. The business opens 6 days a week Monday to Friday 7am – 7pm and Saturday 7 am – 4pm. TAFE trained.

A23 – Male, sole owner of a Multi-Media/Online Marketing/Web development. The business opens 7 days a week Monday to Friday 9am – 6pm.

A24 – Male, physiotherapist. The business has 2 staff including A24. The business opens 6 days a week, 9am – 5pm Monday to Saturday.

A27 – Female, owner of a family business who runs a small smash repair business. The business employs 4 staff including A27. Casual car mechanics or additional smash repairers may be employed at time.
8.2 Appendix B: Information Sheet

INFORMATION SHEET

Name of project – THE PERCEPTION OF SMALL BUSINESS ON GOVERNMENT-INDUCED FACTORS INFLUENCING THE DECISION TO ADOPT e-BUSINESS WITHIN THEIR BUSINESS: A MULTIPLE CASE STUDIES

My name is Kevin Tran and I am conducting research as part of my Doctor of Business Management degree at Southern Cross University. My research project is titled “Perception of Australian Small Business on Government-Induced factors influencing the decision to adopt e-business within their business”.

Your name has been given to me by .......Or Your name has been selected from the Sensis’s White Pages.

This research aims to provide government policy makers a better understanding of the effectiveness of current policies and programs on the adoption of e-business amongst small business entrepreneurs. It will to gain a deeper understanding of the intrinsic interacting forces behind the SME’s decision to adopt e-business. Data collected for the research will also be useful for the benchmarking of the effectiveness of SME policies, regulatory environment and performance. It also improves the government governance on e-business strategy aiming at Small Business.

This research involves interviews of 12 small business entrepreneurs and a focus group of another 10 small business owners. It is expected that each interview will last between 1 to 1.5 hours.

It is planned that data collected from the interviews will be analysed and its outcomes will be used to inform governments at all levels the effectiveness of their effort in encouraging small business to adopt e-business. The results of the research can also be used to ensure that future government effort will be well targeted to the needs of small business in this area.

All information collected remain confidential especially any commercial in confidence information even the information if given accidentally or deliberately. The questions in the interview have been designed around a typical small business scenario and at no time, you are required to disclose information or business strategy of your own business. You will be given a codified identification and data collected will be reported under the identification given.

As a participant, you will have the following rights:-

. You are not forced to respond to the interview questions and no personal information of the interviewee is to be collected nor solicited.
. You are not identified with information provided in the report
You will be fully briefed about the nature of the research before the interview is conducted. If at any time, your participation in the interview is no longer tenable, the interview will be stopped at your request. We will provide counselling service if you are adversely affected by the research (NS 2.2.6), although this should not occur in "low" risk research such as this one.

We are grateful for your participation in this research, however, your participation is on a voluntary basis and therefore there will be no payment for your contribution, although we will provide morning or afternoon tea during the interview sessions.

The interview will be recorded and the content of the recording will be associated with an identifier given to you at the interview. Transcripts and the audio material recorded during the interview will be kept safely and stored for 7 years as required by the Human Research Ethics Committee of the university.

The results of this study may be published in a peer-reviewed journal and presented at conferences, but only group data will be reported.

A letter of Consent will be sent to you with this letter for your signature and it will be collected at the interview.

At any time, if you want further information about this research, you can contact me Kevin Tran on 0411 636 159 or email k.tran.22@scu.edu.au or alternatively, you can contact my supervisor Dr Peter Wai-Hong Wong on 0431 489 908 or email at Pwong21@scu.edu.au.

If you wish to receive a summary of the results by email or mail, please tick your indication on the Consent form and leave your contact details in the space provided in the Consent form.

This research has been approved by the Human Research Ethics Committee at Southern Cross University. The approval number is ECN-10-060.

If you have concerns about the ethical conduct of this research or the researchers, you can write to:

The Ethics Complaints Officer
Southern Cross University
PO Box 157
Lismore NSW 2480
Email: ethics.lismore@scu.edu.au

All information is confidential and will be handled as soon as possible.
8.3 Appendix C: Interview Guide

Interviewing Guide

INTERVIEWEE CODE: _______  Date: __/__/____  Time ______:_______

Location:_________________________________ Transcript Number: ______

Thank you for agreeing to be interviewed. The data collected by this interview will remain anonymous and confidential.

(Verify that the interviewee has read and signed the Consent Form)

Introduction and Background

Introducing: ________________________________________ and thank you for their participation.

Explain reasons for us being here and remind them about the informed consent

Purpose:

This research aims to provide government policy makers a better understanding of the effectiveness of current policies and programs on the adoption of e-business amongst small business entrepreneurs. It will aim to gain a deeper understanding of the forces behind the SME’s decision to adopt e-business. Data collected for the research will also be useful for the benchmarking of the effectiveness of SME policies, regulatory environment and performance. It also improves the government governance on e-business strategy aiming at Small Business.

This research involves interviews of 12 small business entrepreneurs and a focus group of another 10 small business owners. It is expected that each interview will last between 1 to 1.5 hours.

Data Collection:

It is planned that data collected from the interviews will be analysed and its outcomes will be used to inform governments at all levels the effectiveness of their effort in encouraging small business to adopt e-business. The results of the research can also be used to ensure that future government effort will be well targeted to the needs of small business in this area.
All information collected remain confidential especially any commercial in confidence information even the information if given accidentally or deliberately. The questions in the interview have been designed around a typical small business scenario and at no time, you are required to disclose information or business strategy of your own business. You will be given a codified identification and data collected will be reported under the identification given.

Question to interviewee:-

In your own view, what is e-business?
Explain “What is e-business”
Explain what e-business means in this research

Explain consent and confidentiality aspects of the research

Introductory questions – Each participant will be known via a given codified identification.

1. How long have been running/managing the business?
2. Are making decision with regards to implementing new business strategy?
3. Does your business have Internet or website presence in the Internet?
4. Do you have any qualifications in IT or other disciplines?
INTERVIEW QUESTIONS

1. **Adoption factors that affect the decision of SB owners to adopt e-business**
   1. If you were the owner of this business, would the use of e-business suit this business?

2. What driving factors that you think that the firm considered when it implemented e-business?

3. Any perceived barriers that you think the firm had encountered and will encounter in the future? Would that be managerial? ICT skills of management, cost of maintaining e-business, legal uncertainty, security and trust?

2. **How does government support in e-business reach small business?**
   4. Should the business receive any financial or other support from the government in setting up e-business? government?

5. Should the government publish information about setup cost of adoption of ICT? Cost of adopting sophisticated e-business (online payment) and maintenance

6. Should the business also observe the benefits and not just concerning about the cost of implementation?
7. Should the business be concerned about logistics e.g. package delivery and collection

8. Should the business be concerned about invisible cost related to management and organisational changes

9. Should there be more competition on ISP charges and services and/or licencing fee?

10. Should the government play a leading role in the provision of government services on line?

11. Should the government expand its collection and analysis of statistics on e-business?

3. To what degree that Australian government’s regulatory framework, trust and financial infrastructure influence small business’ owners in adopting e-business?

12. Do you think that there is any legal uncertainty for cross-border transactions? Or inconsistency across multiple jurisdictions?

13. What do you want to see government do to increase your confidence in our regulations and financial infrastructure with regards to doing business on-line?

14. What do you think about current taxation laws especially no GST to be charged from goods buying overseas?
15. Do you think legal protection for Internet transactions is adequate? Redress resolutions adequate and affordable especially for small transactions? Arbitration?

16. Any legal uncertainty concerning contracts, terms of delivery and guarantee for the purchased goods?

17. Is the legal framework for consumer protection adequate in Australia? in terms of intellectual property and competition laws?

18. Is anti-competitive behaviour of business being monitored adequately in Australia?

4. **How do Australian government’s human infrastructure programs foster the adoption and sustainability of the e-business within small business?**

19. Do you think it is hard for business to find staff with e-business expertise?

20. Should government provide programs/information to train small business entrepreneurs to manage and/or support the implementation of e-business? Both in managerial and technical skills?

21. Should the government provide awareness program on integration of e-business solutions to the business? Promoting successful business stories or practices?

5. **How do public communications and information systems infrastructure encourage the investment and building of IT infrastructure of small business?**
22. How important that you think the government should promote trust and security in online transactions especially in authentication and digital signatures?

23. How important for the business adopt e-business if the Internet access cost is affordable, fast and reliable? How important is competition in this sector?

24. Is technology neutral and interoperability of a variety of network infrastructures and software essential?

25. Should the government provide/ or encourage business to provide tools to assess e-business opportunities and the development of niche products and services?

6. Other relevant discussions

26. Do you have other advice for us or for the government with regards to your own experience with the adoption of e-business in general?

End of Interview
## Appendix D – Analysis of Interviews

<table>
<thead>
<tr>
<th>Adoption factors</th>
<th>Government Support/ e-government</th>
<th>Regulatory framework, trust, financial structure</th>
<th>e-commerce</th>
<th>Human infrastructure</th>
<th>Information, communication infrastructure</th>
</tr>
</thead>
</table>
| **A5**           | Advertise on specific websites [A5]  
more online [A5]  
younger audience - facebook, website [A5]  
Internet - payment online rather going to the bank [A5]  
implement property management software | electronic digital signature [A5]  
using if digital signature - charge fee [A5]  
push information [A5] | law regarding email sent to individual - not admissible in court [A5] | Paypal concept is good and safe for consumers | training course on IT for business owners [A5]  
For example no training on GST [A5]  
insufficient bandwidth [A5]  
8 megabits per second would be fine rural slower speed [A5] |
| **A9**           | manage inventory with barcode [a9]  
higher cost base than our competitors due to use of technology [a9]  
high cost for quarantine, import fees --> not profitable if less than 2 containers are ordered [a9]  
use to website but has not using it - will relaunch next year [a9] | cash based - cheaper cost  
no need to pay fee [a9]  
cash based - tax avoidance - business honest - losing out to others [a9]  
food labelling - regulations and enforcement - those compliant with the rules ending up having higher cost base [a9] | fraudulent transaction but business still ends up responsible for the transaction [a9] | perception is improving [a9] |
| **A13**          | what makes commercial sense [A13]  
electronic lodgement - EFT payment [A13]  
government help themselves to get their systems works efficiently [A13]  
NSW dept of finance - panel online 20/20 automate - agency buys through a portal - here is a list pick 3 - automatic | improve payment process  
[A13]  
system is arcane - need to put in better system [A13]  
relationship with government [A13]  
small business dont understand government process - procurement [A13]  
security and privacy - lack of regulations - privacy provision [A13]  
large customers database have take long time to settle invoices [A13]  
small business take less 30 days government takes 3 months [A13]  
education campaign [A13]  
how to safely transmit - buyers beware Internet security - lead by banks [A13]  
anti-phishing - online fraud - pushed to news media [A13] | small problem on ebay but feedback from previous buyers seems to work well [A13]  
sel-fregulation works well [A13]  
paypal - keep credit card details [A13]  
offer certain guarantee - government stepped in to stop ebay to enforce paypal is the only payment option  
censorship - filtering - is | business directory is owned and operated by Sensis [A13]  
privately owned bandwidth is limited perhaps fat between home and exchange but no guarantee beyond [A13]  
business directory is not a big difference on |

| A18 | E-government (services Incentive for accreditation erroneous transactions - transactions can go wrong not technically skilled to ADSL fast enough for us | | | |
claiming on line), results download -> more time required to submit online, and cost (software upgrade and hardware upgrade) small number of transactions no need to computerise [A18] ADSL fast enough for us interface with pathology labs and processing claims with government agency [A18] no choice but to comply [A18] - tremendous cost and effort/upgrade to computers cost for accreditation is too high - no longer participate - no incentive per capita of the client [A18] privacy and confidentiality - dare not to implement high tech fear of something may go wrong [A18] no need for website [A18] run business within your means [A18] need up-to-date system - need Internet and computer systems [A18] relied on good will of vendor software for support of computers and related software [A18] cost for software to link with government is expensive (monopoly of - but too much effort to document - ending up not proceeding expert panel to be set up - may need accreditation due to confidentiality of patients - cant send hardware out for repair panel software or hardware?? <government job or government should fund industry network ) Establish computer hardware and equipment panel [A18] cannot cancel - losing money especially for a small amount same as payment of bills [A18] too hard to reconcile and cancel an online transaction [A18] cheque is better - can void transaction if fraud or correction needs to be initiated[A18] especially if it involves foreign transactions Little trust in electronic transactions - prefer cheque - can control in and out process to identify and investigate fraud is long, and user is at fault until proven otherwise [A18] tone of communication from the bank - if the credit card is used by someone else - you are still liable. - communication - no assurance - written by lawyers - not customer friendly [A18] manage the computer systems - relied on contractors , cost [A18] panel of experts [A18] confidentiality, privacy of records [A18] money spent on NBN could be better used to specify design, standard for our software computer panel [A18] money spent on NBN could be better used to specify design, standard for our software faster speed of the Internet may not help in its current form [A18]
<table>
<thead>
<tr>
<th>A20</th>
<th>It is up to business to determine the level of technology that they need [A20]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pushing strategies are not successful, solutions are inadequate, particularly state governments need to publish more information free of charge rather than demanding a fee talking to someone is better than spending 45 minutes going between different help options. Solutions are very technology-centric time waste on handling marketing calls from telecommunication companies. Solutions are fairly inadequate - state government [A20] need a bit of pushing - but if business has no choice to uptake technology then disheartening [A20] solution is impractical - government has high ability to recognize risks reputational risk, financial risk but not good at customer service [A20].</td>
</tr>
<tr>
<td></td>
<td>Negotiate treaties with other countries on how to handle remediation of unsuccessful or fraudulent transactions buying online with business .com.au web address but the goods are sent from overseas knowledge economy but too costly - [A20] cheaper to pay IT staff in India than Australia [A20] reducing opportunities [A20]. Thing are shifting - next time probable Burma or somewhere else.</td>
</tr>
<tr>
<td></td>
<td>Paypal model is good - my identity is protected [A20].</td>
</tr>
<tr>
<td></td>
<td>Quite a gap between people who have good technical knowledge and those have not. IT is up to individual business not sure setting a directory of services is a good idea -&gt; get SPAMMED sometimes government has gone too far in implementing security say password has to be changed every 3 months to for NSW government cost of service is too high - training cost is too high - charge is high - so obtaining the same skill set in India per say is cheaper then perhaps later to Burma and so on reduces job opportunity in Australia [A20].</td>
</tr>
<tr>
<td></td>
<td>People dependent on ADSL or not good coverage maybe benefit by the roll-out of the NBN [A20] directories - a lot of private companies trying to set up - Spamming is an issue [A20] source of problems that good business [A20] probably more relevant to younger people [A20].</td>
</tr>
</tbody>
</table>
building infrastructure and
stick to that rather trying
to tell us how to do our
business is a step ahead
[A20]
paying fee to search for
info - should make
transparent for business
[A20]
technology very difficult to
use - all about protecting
government not the user
nor the technology [A20]
keep changing password
every three times - even
bank does make to do
that [A20]
solutions are very techno-
centric - need to involve of
small business to design
systems prior to roll out
[A20]
recognising and
identifying ways to make
life easier for small
business [A20]
show how it can be used
using something like
YouTube not just relying
on written words [A20]
being able to speak to
someone rather going
through all different help
options [A20]
time poot - got rung up
four times to change
telecommunication
providers - no benefits
where telecommunication
takes less than 1 hours of
| A21 | Government take advantage of good willing from business and change policies or decisions mid way [A21] discourage small business to deal with government initiatives [A21] small business does not getting the benefits [A21] panel support does not work - too much time spent - no results at all [A21] little feedback from government from losing tenders or bids [A21] tender requirements are not clear - cut and paste from somewhere else - cannot respond well to tender unless you have knowledge of it [A21] gateway payment will need to be certified by governments or financial transactions should certify these gateways before they interface with their systems government must have clear policies how repudiation and resolution mechanism [A21] for transactions government seem to development of gateway payment may not meet privacy and confidentiality criteria - government will need to issue guidelines on minimum standards for payment gateways or collection personal + financial details on-line [A21] payment gateways are available - ripe to conduct online business [A21] people are willing to accept online payment [A21] consumers realised savings to be gained in purchasing on line [A21] | business owners do not understand The IT systems that they implement [A21] some "garage developers" low cost but does not meet standards required for electronic transactions [A21] |
| A22   | Chinese government invests heavily in training manufacturing - getting people out of farming [A22] supply chain (take 4-5 days to order material) transport cost is high (cost more to transport interstate than sending container from China to Australia [A22] too much “what-if” not commitment to do it. [A22] policies are made in electoral cycle government more in enforcing than assisting business [A22] tariff - should be introduced to keep jobs in australia [A22] government does not help small business - small business - have to pay accountant to submit BAS [A22] | people are losing money over the Internet - fraud, hacking is an issue but rely on banks to detect and handle fraud [A22] | Not enough people to teach in TAFE for this type of engineering course [A22] Essential industry to have [A22] not enough focus on engineering jobs - no new trainees or apprenticeship coming through in the industry sector - more skills in office jobs [A22] | speed of Internet is not essential for the type of work I do [A22] |
| A23 | owner is IT or web savvy [A23] | majority of business owners may not know that they need a website [A23] unless you told them business reasons: new customers (growth) - advertising products or services [A23] | educational campaign how to transact safely and securely on the Internet [A23] does not need to register a business if all are online [A23] should not control the Internet [A23] more awareness program (TV, radio) why business should have an online presence [A23] pamphlets are not effective who will know about it? governments should set up ombudsman to resolve dispute - consumer Affairs to resolve this dispute - too long - online seller has disappeared [A23] need to inform consumers how personal and financial details are kept [A23] need standards on how to transact online from committing, to resolving disputes and cancellations [A23] some sort of feedback from customers are good [A23] to keep the seller honest website is mainly supplying information to consumers [A23] 90% on line transaction security is less of a concern [A23] developers do not follow development standards - perhaps very little out there [A23] Not aware of issues like maintenance, upgrades [A23] Internet speed is slow [A23] no real competition to NBN [A23] is a concern |}

| A24 | if use computer - need to employ 1 extra staff - every is done manually [a24] government service - charge online wait 2 months to get the money - Internet wait for 2 week before approval [a24] use computers is not pre-approve for service [a24] search online (get info ) [a24] review products [a24] ebay - things are not guaranteed - no warranty - especially to buy things overseas - guarantee for 45 days [a24] remediation - taken to court - lo license - pay court cost - it is not worth need training if implementing government programs [a24] |
| Convenient [a24] small business - customers living within 10km - no need for website no more yellow pages - just google - your name - Sensis is maintaining it [a24] for younger audience | the effort and time [a24] online business - no need to register [a24] no third party warranty [a24] if coerce by government - will do it complaint resolving - ombudsman or consumer affairs only acts when someone complains - some time no proof [a24] problems - no loyalty any more | | A27 | dont want to expand - sufficient numbers of customers [A27] if company we don’t trust we don’t give credit card details we pay cheques [A27] people who comes from CES !!! Do not want to work [A27] facebook - spending time answering the phones rather doing work [A27] want to implement ERP - cost outweigh benefits [A27] dont deal with governments [A27] government need to have legislation for insurance to redirect clients to their own repairer [A27] pricing - equipment guidelines [A27] not good impression of fair trading - too small for them to pay attention and if they are it takes long | big guys kill small guys like us [A27] e-hub: auction for parts [A27] shortage of tradesmen [A27]going to uni than going to trade [A27] speed of Internet is not essential for the type of work I do [A22] |
time [A27] may need a body to arbitrate [A27] < $5000 tax incentives [A27]
8.5 Appendix E – Consent Form

CONSENT FORM

Title of research project: THE PERCEPTION OF AUSTRALIAN SMALL BUSINESS ON GOVERNMENT-INDUCED FACTORS INFLUENCING THE DECISION TO ADOPT e-BUSINESS WITHIN THEIR BUSINESS: A MULTIPLE CASE STUDY

Name of researcher: Kevin Tran

Name of Supervisor: Dr Peter Wai-Hong Wong

NOTE: This consent form will remain with the Southern Cross University researcher for their records.

Tick the box that applies, sign and date and give to the researcher

I agree to take part in the Southern Cross University research project specified above. Yes ☐ No ☐

I have been provided with information at my level of comprehension about the purpose, methods, demands, risks, inconveniences and possible outcomes of this research, including any likelihood and form of publication of results. Yes ☐ No ☐

*I agree to be interviewed by the researcher Yes ☐ No ☐

*I agree to allow the interview to be *audio-taped and/or *video-taped Yes ☐ No ☐

*I agree to make myself available for further interview if required Yes ☐ No ☐
I understand that my participation is voluntary  
Yes ☐ No ☐

I understand that I can choose not to participate in part or all of this research at any time, without negative consequence to me  
Yes ☐ No ☐

I understand that any information that may identify me, will be de-identified at the time of analysis of any data. Therefore, any information that I have provided cannot be linked to me (Privacy Act 1988 Cth)  
Yes ☐ No ☐

*I understand that neither my name nor any identifying information will be disclosed or published (**delete this statement if the study is completely anonymous)  
Yes ☐ No ☐

I understand that all information gathered in this research is confidential. It will be kept securely and confidentially for 7 years at the University  
Yes ☐ No ☐

I am aware that I can contact the supervisor or researcher at any time with any queries  
Yes ☐ No ☐

I understand that the ethical aspects of this research have been approved by the SCU Human Research Ethics Committee  
Yes ☐ No ☐

If I have concerns about the ethical conduct of this research, I understand that I can contact the SCU Ethics Complaints Officer  
Yes ☐ No ☐

Participants name: ________________________________________________________________
Participants signature: ............................................................

Date: _________________________

☐ Please tick this box and provide your email address below if you wish to receive a summary of the results:

Email: ________________________________________________________________

**Contact details** for the ethics offices are:

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