

2015 Victoria University MBA Research Project

Perceived User Adoption Barriers in e-Government viewed from the practitioner's lens

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Acknowledgements

I wish to express my sincere gratitude to Dr. David Stewart for all his support and guidance throughout this research project. Dr. David Stewart, thank you for steering me in the right direction when necessary and I have thoroughly enjoyed working with you. I would also like to thank all the research participants for your time in contributing to my research and all the valuable insights you have given me to support this project. A special mentioned to my parent, which has been long overdue, Thank You for the amazing support you guys have given during my MBA.

Abstract

Going digital is a common fad shared amongst organisations today, in gaining the efficiencies by replacing tradition brick and mortar services with digital online services. There are a vast amount of different users we must consider when making such decision such as removing brick and mortar services. There are defined forces and adoption barriers faced by users not either willing to change or the inability to transition easily on to digital services. Making a decision to go digital organisations must be better informed about these forces and adoption barriers. The research will aim to provide insights on the key barriers to adoption that are impacting on effective implementation of digital services to support results 9 and 10. The research assesses the perceived barriers to adoption in e-Government from a practitioner's point of view. Thus, the main question this project seeks to address is "What are the level of awareness and importance placed on barriers to adoption in e-Government services from a practitioner's point of view?" The research will aim to provide the rich insights from data collected from practitioners to determine the size of the problem within New Zealand.

Literature Review

E-Government is the way of the future and sits as one of the key priorities for governments. Governments are seeking more sophisticated ways to encourage participation in using digital services (Akram & Malik, 2012). There is a strong emphasis and eagerness for governments to adopt e-strategies as all economies are facing harsh fiscal constraints. E-Services can provide better reach to all citizens and is economically viable long term compared to traditional service delivery business models. E-Services can also provide better access to government information for businesses and its partners, citizens, and employees (Akram & Malik, 2012).

Governments adopting E-Government are doing so in light of its anticipated cost savings and reachability, however, this may be short sighted as there are still barriers that exist, such as citizens preventing the adoption of these services due to loss of the human touch. This is highlighted by Martin and Rice (2011, p.39), “E-Government designers must continue to be mindful that, while the online environment continues to grow and thrive in terms of consumer usage, in an ageing Australian population, human contact is still valued and needed by growing sectors of the community.”. Demographics and aging population is just one of the many factors a government should consider when adopting a broad brush approach to its services such as using E-Government. There is a large ageing population that presents challenges to NZ government when considering a move to using more digital services.

In recent years there has been a strong preference for New Zealand (NZ) public agencies to channel the majority of its services into using E-Government. NZ Government is, therefore, adopting e-Government strategies in managing the way its services are provided to its citizens. This is clearly stated in the NZ Government’s key strategic directives as set out in:

- Result 9: New Zealand business have a one stop online shop for all government advice and support they need to run and grow their business
- Result 10: New Zealanders can complete their transactions with government easily in a digital environment

www.ssc.govt.nz (2014)

The barriers that exist to prevent the adoption of E-Government are barriers that are similarly faced in the private sector, namely the banking industry. Some of these barriers are identified in the research by Yuen, (Yuen, 2010, p.52) "Even though internet banking is regarded as one of the most powerful delivery channels that allows banks to expand the customer contact through increased geographical reach and lower cost delivery channels, there is no point for banks to invest in Internet Banking Services (IBS) if the services are neither wanted nor accepted by their customers.". This point may be true for the in the current economic environment, however it will be inevitable that all brick and mortar banking transaction may cease to exist in the near future as banks are wanting to move into a digital services to reduce operational cost.

Therefore, private sectors are also facing similar challenges when moving into the digital services world for their customers. However, you could argue the challenges the private sector faces with their customers are at a smaller scale, as the private sector is only accountable to its customers, whereas the government is accountable to all its citizens. Hence the challenges with adopting E-Government is to ensure that due consideration is given to all the advantages and disadvantages prior to pursuing implementation.

This research looks at available literature from both the public and private sectors to enable a broader understanding of electronic services adoption and the relevant barriers, however the paramount focus will be on e-Government.

Literature key Findings

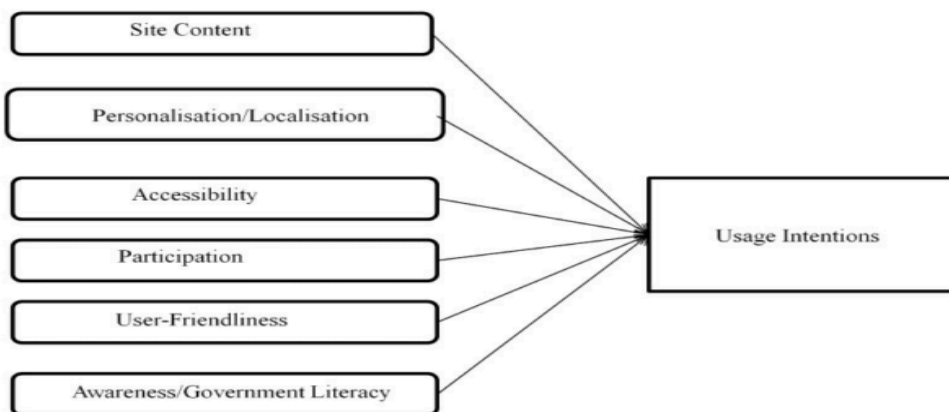
There is a vast amount of research that discusses the successful methods in implementation of digital services, however, there is much less focus on user adoption barriers. The reviewed literature suggests there are key variables when trying to understand adoption barriers for people taking up electronic services whether in government or in the private sector. As highlighted by Alkraiiji, Jackson and Murray (2013) there are five innovation characteristics that influence adoption; relative advantage, complexity, compatibility, trialability and observability. Similar characteristics are found in research from Titah and Braki (2006) who also have significant interest in E-Government. However, current literature lacks depth in:

1. better understanding the factors of adoption; and
2. the key factors in influencing effective implementation.

Much of the reviewed literature on e-Government adoption barriers is based on a number of interrelated variables. A number of variables that all adds to the bigger problem that leads to usability, accessibility and forces that prevents users from transitioning to digital service model. It appears there is vast amount of literature outlining the benefits of implementation of digital services versus the literature on user adoption barriers. This suggests there is much focus on the benefits and the cost saving by implementing online services rather than the barriers that users faced, preventing adoption. Governments must understand its citizens and the barriers that they may face from transitioning from a tradition brick and mortar service to a digital services model. It is perceived by many that e-Government is a technology that

enables a government to achieve efficiency, transparency and information management. (Persaud & Persaud, 2013)

Persaud and Persaud also goes on to suggest that there should be a user centric model when looking at e-Government implementation, the contributing factors to a user centric model is based on: Content; Accessibility; Localisation; Participation; User Friendliness and Awareness / Governemnt Literacy (Persaud & Persaud, 2013). See model on usage intentions belows:



Figure

1 – Conceptual model of e-government (Persaud & Persaud, 2013)

Jaeger and Bertot (2012) have similar views, “level of knowledge within governmental agencies about the behaviour of citizens is rather low.”. From the available research, there is indication that there is not just one single barrier to adoption when assessing barriers, organisations should consider mutiple variables that contributes to user adoption barriers. This is highlighted by Al-shboul etl. (Al-shboul, Rababah, Al-shboul, & Ghnemat, 2014):

- Political Factors - government organisation's willingness to pour large capital investment into E-Government projects despite to lack of motivation from leaders at the government table. (Qaisar & Khan 2010)
- Social Factors - not all citizens may have access to the internet. Although government claims that all citizens will benefit, this may be un-realistic if there are large minority groups without access to internet resulting in a social divide. (Al-shboul, Rababah, Al-shboul, & Ghnemat, 2014)
- Technological Factors - significant challenges impacting system barriers that are concerning to citizens is security and the handling or misuse of personal data. Outbreaks or security breaches have caused mistrust between citizens and governments. Governments not adopting the highest standards in security, hardware and software will be contributing to the technological factors that suggest an increase in barriers to the adoption of E-Government. (Shannak, 2013)
- Organisation Factors - government organisation's ability to adopt adequate capability and organisation structure to meet the demand and requirements of servicing E-Government. (Sang, Lee, & Lee, 2009)

The literature available covers a wide range of variables leading to adoption barriers, however there is a lack of depth and coverage in understanding the root causes leading to citizen behaviours preventing adoption. As one research indicates governments should do better by understanding user's evolving behaviour by using the United Nations framework (UN) to provide governments more leverage in implementing of e-government services (Andreasson, Millard, & Snaprud, 2012).

The United Nations framework assesses the key insights the key barriers to adoption of e-Government. It also provides methods to address user behaviours leading to adoption barriers in embracing E-Government. Literature also suggests that adoption barriers are related to aspects of user behaviour. The areas of user behaviour leading to user adoption barriers that this research will be focusing on are:

- Security Concerns - as highlighted by Andreasson, Millard and Snarud, "only 12% of European users feel completely safe in making transactions online, making trust and security one of seven key initiatives in the European Digital Agenda" (2012).
- Cultural - culture can be diverse and different in each company. International organisations when diversifying their portfolio must consider cultural differences, such as language and user habits in each respective country. (Bin & Sun, 2003).
- Age - a country like New Zealand with an ageing demographic may face additional challenges. Age being a variable will hold strong influence in user behaviour.

Key Barriers to Adoption

This section focuses on the key themes identified within the barriers to adoption that are intertwined, including how they impact on user perception and behaviour.

Age Group

A population's demographic is a common theme identified in the extended literature. It is common for older demographics to have a less likelihood of using online services, and there is more preference for direct contact service delivery methods (traditional service delivery model). As Martin and Rice (2011)

indicated in their findings, that there is a sliding decrease in demand for using online services as the age group moves progressively upwards as citizens get older. In contrary the telephone services demand goes up as the citizens get older.

As seen in the table breakdown below:

<i>Age Group</i>	<i>18-24 Yrs</i>	<i>25-34 Yrs</i>	<i>35-44 Yrs</i>	<i>45-54 Yrs</i>	<i>55-64 Yrs</i>	<i>65+ Yrs</i>	<i>Use Trend with Increasing Age</i>
Online	58%	61%	52%	43%	39%	14%	Decrease ↓
Telephone	22%	26%	32%	34%	37%	50%	Increase ↑

Table 1: Demographics in demand for online and telephone services (Martin & Rice, 2011)

As highlighted by Pilling, demographics that are less likely to use the internet “but are more likely to use government services – are people on low incomes, older people, and people with disabilities.” (Pilling, n.d.). According to Lenhart et al. (2007) based on the pew internet survey there are five features of a demographic that have a less likelihood of using the internet which are; age, education level, ethnic group, income and living in a rural area.

This suggests using age as the only variable for considering adoption barriers when implementing e-government is inconclusive. The literature goes on to indicate that the age variable has a strong relationship with education, income and living. Although there is no research that suggests this, but I would argue that all the variables associated to age must be considered together to better understand user adoption barriers when designing digital services.

In contrary there is literature (Shan, Wang, Wang, Hao, & Hua, 2011), that suggest that implementation of e-government can provide opportunities to reduce barriers and opening up more opportunities to create better reach for citizens. Overall it appears

there is research that argues on both spectrums. However, there is a lack of literature that looks at the relationships between the aspects of implementation and the social variables such as age that contributes to adoption barriers.

Based on the reviewed literature there was no indication of Government using a blended approach or placing any emphasis on the traditional approaches when dealing with citizens. There are opportunities for public agencies to consider the development of complementary and higher quality telephony based services that cater specifically for the needs of older customers who may not readily engage with the government in the online environments (Martin & Rice, 2011). If government is able to remove barriers by having a better understanding of the age variables, according to Osman, Poulson and Nicolle it can “improve older peoples’ quality of life by providing them access to interesting relevant and useful information as well as the opportunity to interact with other people. “(2005, p.40) when using the Internet.

Trust and Security

Another social behaviour leading to insecurity and barriers in adopting e-government is trust and security. When discussing security barriers literature indicates (Bellanger & Carter 2008) users are not necessarily aiming at technology that government uses to protect citizens. Mostly is the citizen’s perception and trust towards e-government. According to Bellanger and Carter (2008) it indicates adoption to e-government services is based on a lack of trust of government and technology. Also stated by Shah and Lim (Shah & Lim, 2011), “security and privacy are often found to be barriers to users’ adoption of online applications.”.

What is commonly identified in relation to the security aspects of e-Government is not always the use of the technologies causing barriers. More commonly is the users and citizens understanding and awareness of security protocols. In context, citizens are requesting transparency and their need to know how they will be protected. This will in return harness their trust in using e-government. There are key dimensions that governments should consider when considering reducing issues leading to security barriers to adoption; awareness of what security is used, active management support and training provided to users regarding security (Smith and Jamieson 2006).

According to Mishra and Mishra (2011) there is a relationships between trust and perceived risk, if citizens holds a high level of trust there is a less likelihood of perceived risk of using e-Government (Mishra & Mishra, 2011). From an online shopping perspective Tan (1999) indicated the users that are more risk adverse are less likely to use the Internet for shopping. This would suggest security awareness is essential in influencing users to build more trust with e-Government. The ability to influence and provide transparency and awareness to citizens will help enable a better understanding of the risk when using e-Government.

A framework to achieve this type of support to citizens organisations must use intermediaries that will facilitate the use of e-Government by advocating the overall support to citizens (Dombrowski, Hayes, Mazmanian, & Volda, 2014). As shown in a table below from a survey undertaken by Shan and Lim (Shan et al., 2011) there is not much awareness on privacy and trust awareness of using e-Government services. This suggests governments are not doing enough to consider these variable-leading barriers to adoption. Security concerns being one of the more important dimensions preventing

users from adopting. Government organisations should provide better measures to ensure users are protected to reduce the fear from the users point of view.

Survey Item	Yes		No	
	No.	Percent	No.	Percent
<i>Relational Trust</i>				
<i>Competency</i> : Do you think Nepalese government has capacity to deliver e-government services through the Internet?	35	37 %	60	63%
<i>Benevolence</i> : Do you think Nepalese government always acts in citizen's interest?	30	32 %	65	68%
<i>Integrity</i> : Do you think Nepalese government is honest in its dealing?	9	10%	86	90 %
<i>Integrity</i> : Do you think Nepalese government is transparent?	10	11%	85	89%
<i>Institutional Trust</i>				
Are you aware of privacy policy, security and encryption standards used by the government websites?	4	4%	91	96%

Table 2: The trust by citizens towards government services (Shah & Lim, 2011).

The trust variable leading to adoption barriers also holds a strong relationship with the element of user behaviour. Although there is no literature that suggests older users that are more subject to risk aversion leading to less trust in using e-government, but I would argue there is an interwoven relationship between age and trust. This may be caused by resistance to change or the familiarity of new business processes enforce within these digital services.

Cultural

The third theme is culture when considering adoption barriers. Culture is one of the key barriers to adoption that is also intertwined with age and trust. One study indicates that Asian and white non-hispanic users have a higher broadband adoption rate when compared against black non-hispanic, Hispanic and American Indian users and resulting in an ethnic digital divide (Hall & Owens, 2011). Ferro et al. (2011) suggest that users from English speaking backgrounds have a more positive correlation with Internet adoption.

There are various barriers to adoption variables that are linked to culture. According to Hall and Owens (2011) users with low income has a less likelihood to go online. Culture can also defined as a “combination of language and the habits of people in a certain place” (Bin & Sun, 2003). Based on a study of e-Government in rural India, there are evidence that indicates that some users found it difficult to understand American based English installed in some of the e-government services (G. Mishra, 2014). This suggests language is in important aspect of culture and can be easily underestimated.

When understanding culture as an adoption barrier organisations must understand together the social-demographic in terms of age, the perceived usefulness and users trust on e-government (Nam & Sayogo, 2011). If none of these are considered according to Dugdale et al. (2005) this will have a significant impact on the digital services resulting in socially disadvantage users. Culture, as a variable is very complex at nature and is the backbone of other key variables like age and trust. Governments implementing e-government must consider facets of all these variables together that are interwoven such as age, trust and culture.

Literature Review Summary

There are vast amounts of literature relating to the benefits of e-government adoption. Literature on e-government implementation outweighs the number of literature available on adoption barriers to e-government. The literature review that has been undertaken for assessing adoption barriers, have identified some key themes influencing user’s behaviour towards e-Government. Adoption barriers can be based on a number of variables such as demographics, security, education and income leading to barriers of adoption.

Three key themes have been identified; age, trust and culture are the most distinct themes that are principally influencing user behaviour towards e-government adoption. There is a lack of depth in the literature in assessing how all these variables are interrelated or a strategy in managing these barriers to provide a more successful implementation approach for government.

Although most of the literature is overseas based and some outside the context of e-Government implementation, it was important to draw on these resources to better understand the wider scope of Internet adoption in general. This will help organisations to better understand the barriers to adoption when considering digital service as a whole and not barriers to adoption within government organisations.

Research Design

The purpose of this section is to provide an overview of the overall approach used to support this business research project. The research design provides content on the following:

- Objectives of this business research project;
- Methodology that will be used to support the foundations of this project;
- A reflection on the findings from the literature review;
- Data collection and utilisation of the data;
- The key milestones from the plan to achieve the completion of the project;

We are in an economy where resources are scarce and Governments are fiscally challenged to support an aging population. Governments are opting for non-traditional methods by employing more digital services in managing its citizens to reduce cost. As clearly called out in Government's key strategic directives set out in:

- Result 9: New Zealand business have a one stop online shop for all government advice and support they need to run and grow their business
- Result 10: New Zealanders can complete their transactions with government easily in a digital environment

www.ssc.govt.nz (2014)

This research aiming to provide insights on the key barriers to adoption that are impacting on effective implementation of digital services to support result 9 & 10. The research assesses the perceived barriers to adoption in e-Government from a practitioner's point of view. Thus, the main question this project is seeking to address is "What are the level of awareness and importance placed on barriers to adoption in e-Government services from a practitioner's point of view".

Information Communication Technology (ICT) expenditure is growing rapidly each year in Government organisations. The importance of this research has gained insights to practitioners in understanding the key barriers to adoption based on their experiences working in the industry. It aims to provide better awareness to practitioners so they can be more informative when considering e-Government adoption or decision in constructing e-government strategies. Understanding these forces can help practitioners to gain a better understanding to support better delivery of e-Government services to meet citizen's needs.

Reflection on literature

There are vast amounts of literature relating to barriers to adoptions. The key findings within the literature indicated that there is a wide range of different variables that drives barriers to adoption. These variables are a set of influences that prevent citizens from adopting e-government. There were three key themes identified in the literature review, age, trust and culture. These were the most distinct themes that are principally influencing user behaviour towards e-government adoption. However, there is a lack of depth in the literature on assessing how all these variables are interrelated, or any frameworks as such in managing these barriers. But, some conclusions were drawn on creating a strategy in managing all these variables together when considering e-government investment, but was not conclusive.

Methodology

The qualitative paradigm will form the framework for this research project. Research methodology as defined by O'Leary (2014) is the framework that is used to conduct your research. A qualitative research forms the conclusion on the basis of co-construction of another ones views (Creswell, 2009). The use of subjectivism co-construction coupled with ethnomethodology will be used to gain the required rich insights from practitioners.

Ethnomethodology is a method used to determine insights, based on conversation analysis according to Bryman and Bell (2011). This method can be deemed favourable for this research project, as there will be observation made during the practitioner's interviews including a set of questions that has been designed that will help gather the rich insights required to form the research data.

Ethnomethodology research

According to Bryman and Bell (2011), ethnography originated from the beginnings of social anthropological research, where researchers used this method by observation, questioning through conversation and probing specific issues in the aim of uncovering the required data to support research. In addition, they also suggest "Ethnography has also become a 'label of choice' for researchers working in professional and applied fields." (Bryman and Bell, 2011, p466).

This research has assessed the level of awareness placed on barriers to adoption in e-Government services by practitioners within the paradigm of a social study. Gaining an understanding, perception, and awareness from practitioners within the industry is also within the social realm, hence the use of ethnomethodology.

The aim of the project is to provide better awareness to a group of practitioners on barriers to e-Government adoption by understanding their opinions and views on the subject matter. The main strength of ethnomethodology is that it provides various key strengths to social study. O'Leary (2014), some of the main advantages are:

- Recognition of interpretive work with an understanding of individuals' work in society;
-

- Supports interaction processes through interviewing and the types of question posed to derive research data;
- Supports the study of social structure such as culture;

The conversation analysis method within ethnomethodology will be used as part of the interviews undertaken with the subjects. As described by (Bryman and Bell, 2011, pg562) “Conversation analysis (CA) is the fine-grained analysis of talk as it occurs in interaction in naturally occurring situations. The talk is usually recorded and transcribed so that the detailed analyses can be carried out”. This research has been based on interviews with a selected group of practitioners responding to a set of structured questions. Conversation during the interviews that has been recorded will be used to form the part of the overall analysis to support the findings for this research. According to Heritage (1984, 1987) conversation analysis method with the ethnomethodology framework is governed by three basic assumptions; discussion and talk is structured, Talk is forged contextually and Analysis is grounded in the data set collected from the interviews.

There are also some weaknesses of this approach where ethnomethodology is a method that sits outside the mainstream research methodologies and it lacks utilisations in respected to researchers within academia (O’Leary, 2014).

Methods

A series of semi-structured interviews have been conducted with a group of participants to support the research with an aim to provide data to gain rich insights to their awareness and opinions on the subject matter. The semi-structured questions have been designed with the

intent to probe the participant's knowledge on barriers to adoption and including deep insights based on their work experiences in the industry.

The semi-structured interviews are in support of their work experience within the NZ public sector and by no means a representation of the organisation they are working for or have worked for. The participants name and details will remain confidential to maintain integrity of the ethical considerations.

The interviews are based on six practitioners sourced from personal networks and colleagues' networks. They have been contacted via email requesting for their participation in an interview for this project. Interviews have been conducted away from the organisation they are currently working for and in an environment that is safe for them to undertake the interview.

The selected practitioners are from a variety of backgrounds covering a variety of different roles working within the public sector or private sector (working within government). All practitioners operate within the Wellington region and have had extensive working experience either working or managing digital project in the public sector.

Data Collection and Analysis

The primary data collection methods have been based on a set of semi-structured interview with the timeframe of the interview ranging from 60minutes – 90 minutes. According to Bryman and Bell (2011) questions is often less structured when undertaking a qualitative study, hence the semi-structured interview approach. Secondary data will also be gathered from government sources such as website, publication and articles from professional bodies to further support this research project.

Analysis

Data collected from the interviews have been used to assess to determine commonalities, themes and potential emerging themes not identified within the literature review. Open coding techniques will be used to identify trends within the data collected and further compared against the literature findings.

A challenge that could be faced is the unstructured nature of the data in this approach. As interviewing is meant to be flexible to establish a broad spectrum of views from the participant (Bryman and Bell, 2011). However at the same time it can be deemed as a weakness. It is identified “One of the main difficulties with qualitative research is that it very rapidly generates a large, cumbersome data” (Bryman & Bell, 2011, p612).

Ethics

The human ethics guideline (HEC) application has been submitted and approved before engagement with participant. However, prior to the interviews an early indication requesting for participants time has been requested but subject was not disclosed. On the approval HEC application an approved letter of introduction and consent was sent to participants for their agreement via email. Please refer to the Appendix for a copy of the introduction letter and interview consent form for reference.

Research Limitations

The number of practitioners used in this research based on the time window is one of the primary limitations to this research project. Ideally, a larger sample size with practitioners from different geographies could have provided more depth and insights to better support this research. Data sourced from secondary sources may also be inconclusive hence its limitations in supporting an evidence-based research view and it will be dependent on subjectivism.

Research Plan

A light project management approach has been established since the initiation of this research project. In addition, regular meetings with the research supervisor on a required basis has been agreed to provide support if necessary. A Gantt chart with the key milestones can be seen below in the appendix.

Research Findings

For the purposes of keeping anonymity and confidentiality for this research, names and organisations have been anonymized to protect practitioners interviewed and the sensitivities that surround the information collected. The organisations have been replaced with subject's e.g. small organisation, medium organisation to maintain anonymity through this chapter statements from the practitioners will be quoted on, to provide the key insights that has been drawn from the interviews. When quoting from the interviews the practitioner key will be used for reference.

Introduction

The initial section of the research provided the findings based on the literature available on barriers to adopting digital services and followed by research design, that outlined the approach and methodology this research will be based on. The data collected have been based on six practitioner interviews. All of the practitioners have had more than five years of experience working in the digital industry and working in different roles during the implementation phase of a digital project within the government sector.

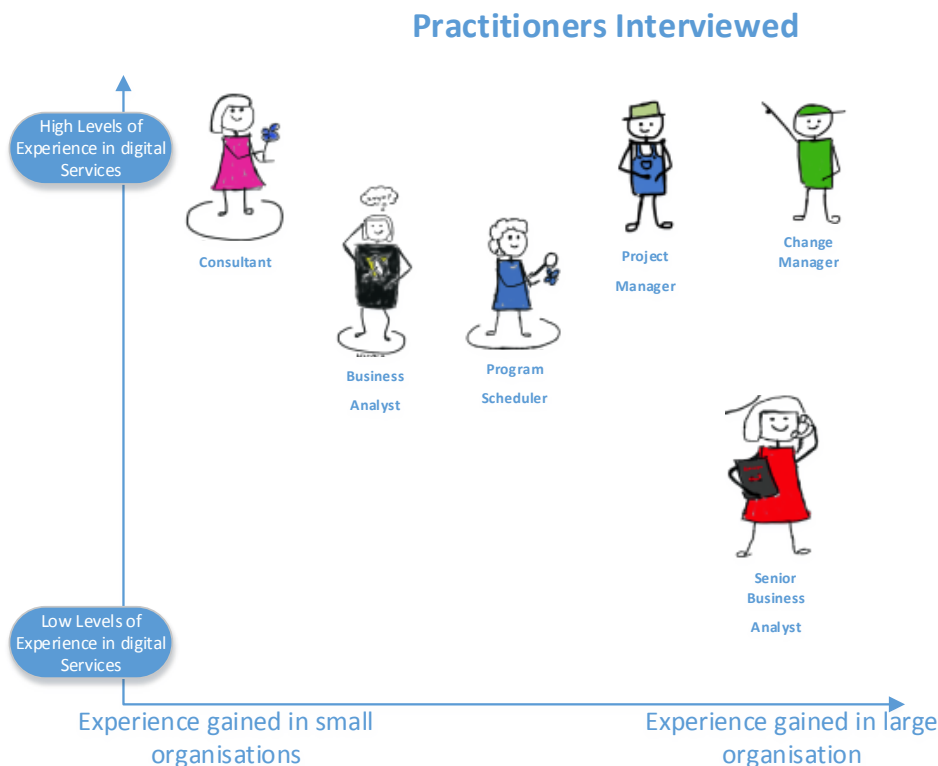
The interviews have been based on a structured questionnaire that is focused on:

- Insight into the organisations, the practitioners have worked in and the roles they have held within these organisations;
- Practitioners perception and views on user barriers to adoption;
- Their understanding if organisation has some form of measurement on user uptake as a critical success factor;
- Their views on how user barriers to adoption should be managed within organisations;

The purpose of the structured interview is to hoping to gain rich insights on the perceived views on barriers to adoption in digital services from a practitioner's point of view. In addition hoping to gain an understanding towards current user adoption barriers in using e-Government, and their opinions on the strategies in managing these barriers.

Organisation size and Industry of Practitioners Interviewed

The selection of practitioners were based on the criteria that they must have worked experience in the change management industry for more than five years. More specifically targeting practitioners with experiences working in the change environment on implementation of digital services within Government and Private sectors. The job market within Wellington is predominantly Government, hence the data captured has a key focus on user adoption barriers against NZ Government digital services.



The above diagram depicts a view of the size of the organisation the practitioners have worked for and the phases they have worked in. Based on the data collected practitioner five

have had the most extensive experience in the digital industry providing services from “Project management, program management and consulting” across a wide variety of government organisations.

The roles depicted on the diagram are based on a reflection on the practitioner’s current role. Over 70% of the practitioners have had more than ten years’ experience in working with digital services impacting on citizens. Each practitioner has had experience working across small to large government organisations. It was by design that individuals were selected based on different professions to ensure the data sourced can provide a wider spectrum of perspectives based on different roles.

Key Findings

This section will provide a summary of the key findings and common views identified within the data collected from the interviews. The practitioners interviewed provided a good data sample that represented experiences across the IT community. Based on the data it appears that a majority of the practitioners had some awareness of citizen barriers to adoption. However the practitioners are lacking in-depth in their awareness when contrasted against the literature where the findings identified adoption barriers are based on a set of variables.

A common view shared amongst the practitioners is that user’s barrier to adoption is led by usability and accessibility. All practitioners agreed that it was important to measure citizen uptake on digital services to enable organisations to understand the benefits and the success of implementation. As practitioner one stated “Measurement of success. It is about measuring money benefits but also managing risk to NZ”. The risk point of view suggest that in the context of using digital services channels, will enable more speed and accuracy of data to support NZ Government to managing risk more effectively. Also stated by practitioner four

that it is important to measure user uptake “especially in large organisation to understand effectiveness between digital services versus front line staff capability”.

Practitioners were also asked to provide views on what defines the barriers to user adoption. Although there were vast amount of different barriers shared amongst all practitioners, the most common perception shared is the usability and accessibility variables as the most common barriers to user adoption. However the data collected also provided views on new emerging barriers that were not identified within the literature review. This will be discussed in more depth in the later sections.

There are split views amongst the practitioners when asked if they viewed user barriers to adoption is a large problem within New Zealand Government. Four out of the six practitioners interviewed considered this as a large problem and recommending that Government should pay more attention to users faced with barriers, however there were two contrary views. Practitioner two stated, “I don’t think is a big problem, but is a big channel for services but as long as it is justifiable. There are enough volumes for digital services existence. However, I don’t see traditional methods being decommissioned for complex business models.”. Similarly practitioner three also did not think is a large problem, stating “No, is not a large problem because NZ is quite an educated society and NZ is a small enough county to make changes quickly.”. The next sections of the report will look deeper into the insights gathered from the practitioners including discussion and the data will be contrasted against findings within the literature review.

Adoption Barriers and Emerging Themes

A question was posed to practitioners on their perceptions regarding user barriers to adoption in using government digital services. All practitioners had consensus on the paradigm of usability and accessibility. Based on an assessment of the conversation with all practitioners,

usability and accessibility is the most referred to barrier and the first that comes to mind. However, as the interview progresses other user barriers are surfaced based on further discussions in the interview.

A common reaction for practitioners when answering this question is that digital services with bad usability are one of the major causes of user not up-taking digital services. As stated nicely by practitioner three “The service needs to be usable and intuitive” and similarly practitioner five stated “Easy, to access and use. Intuitive to do the things you want it to do.”. This common view shared amongst practitioners would suggest usability is a well known variable and it is considered meticulously when implementing digital services.

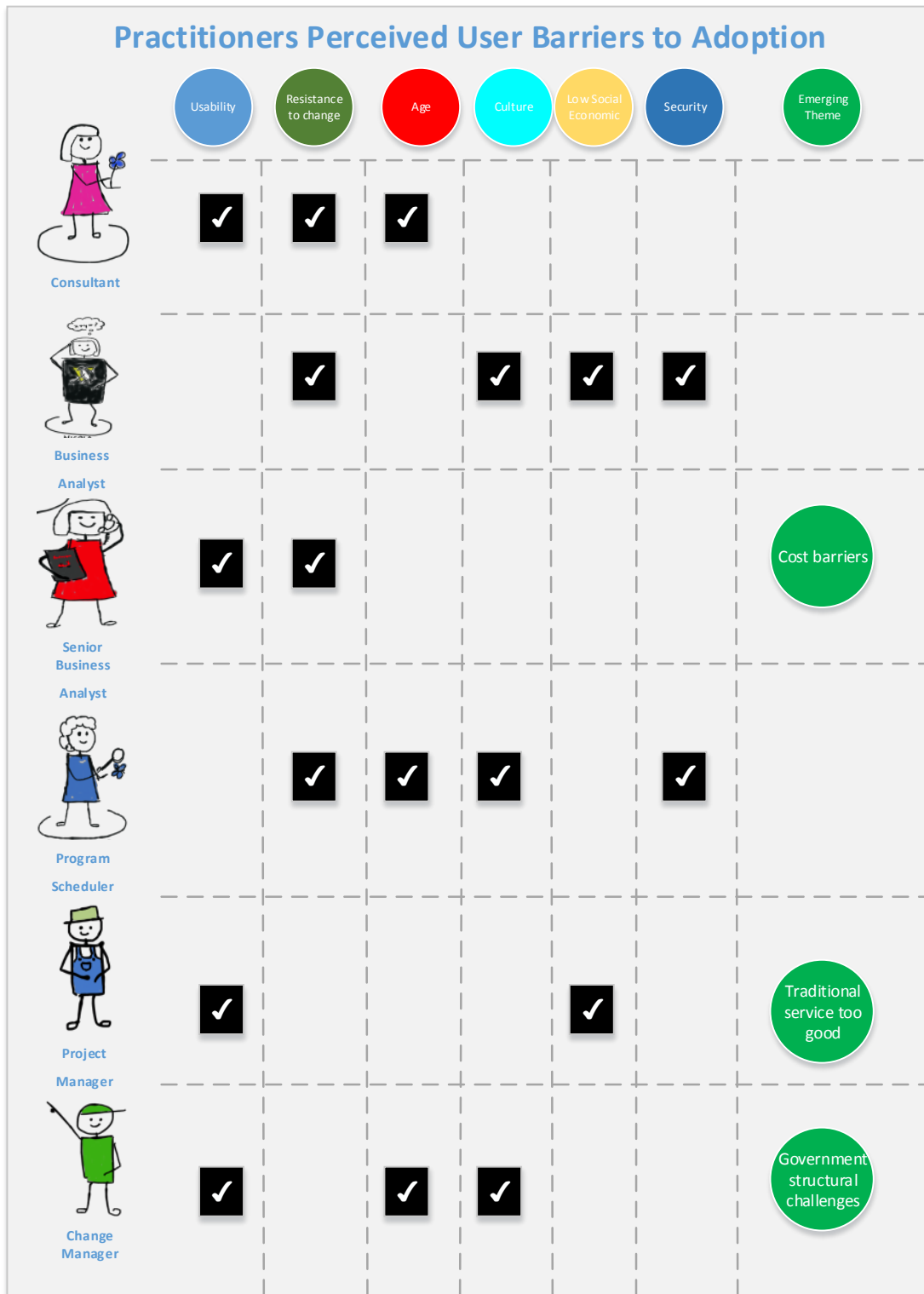
An observation made on the interviews was that not one practitioner discussed user barriers to adoption as a range of variables as recognised within the findings of the literature. As highlighted by Al-shboul etl. (Al-shboul, Rababah, Al-shboul, & Ghnemat, 2014) barriers are based on number of different integrated variables such as:

- Political Factors - government organisation willingness pursuing large capital investment into E-Government projects due to lack of motivation from leaders at the government table. (Qaisar & Khan 2010)
- Social Factors - not all citizens may have access to the internet. As claimed by government that all citizens will benefit, but un-realistic if there are large minorities without access to internet resulting in a social divide. (Al-shboul, Rababah, Al-shboul, & Ghnemat, 2014)
- Technological Factors - significant challenges impacting system barriers that are concerning to citizens is security and the handling or misuse of personal data.

Outbreaks or security breaches have caused mistrust between citizens and governments. Governments not adopting the highest standards in security, hardware and software will be contributing to the technological factors that suggest an increase in barriers to the adoption of E-Government. (Shannak, 2013)

- Organisation Factors - government organisation ability to adopt adequate capability and organisation structure to meet the demand and requirements of servicing E-Government. (Sang, Lee, & Lee, 2009)

The literature available covers a wide range of variables leading to adoption barriers. The practitioner's requested to respond on what their perceived views are on the elements leading to user's barriers to adoption. The data presented a vast array of different views including identification of new emerging themes. See below on a diagram on all themes provided by practitioners.



The data was compared against the literature and it was identified that usability, resistance to change, age, culture, lower social economic minorities and geographic location restriction had correlation to the barriers to adoption variables highlighted in the literature. As Persuad and

Persaud noted, contributing factors leading to user barriers are Content; Accessibility; Localisation; participation; user friendliness and awareness / government literacy (Persaud & Persaud, 2013).

Other commonalities were also identified between practitioner's views against the literature in context of age, culture, low social economic minorities facing barriers to adoption. As highlighted by Lenhart et al. (2007) based on the pew internet survey there are five demographic features that have a less likelihood of using the internet which are; age, education level, ethnic group, income and living in a rural area. However, there were new emerging barriers recognised amongst practitioners.

Emerging Theme 1

There were three emerging themes that were identified based on the data collected from practitioner three, five and six. Practitioner three stated digital services should be “free of charge and no cost barriers”, indicating there are some government services that have third party cost barriers in using their services. You would argue, if there cost associated to transacting with Government then this acts as a deterrence as well as barrier when using government digital services. This perspective suggest, that removing the cost from citizens will enable better transition for citizens to transact on line. Having cost associated in using government can have an adverse impacts on user uptake. This impact may result in citizens continuing to refer to traditional brick and mortar services.

Emerging Theme 2

Practitioner five had a view that government providing services using the brick and mortar business model was being too effective and providing “too good of a service”. Suggesting that NZ Government is educating and delivering positive behaviours for

citizens to transact with them over the counter and contact centre services can have adverse impact to user transitioning to digital services. Practitioner five suggests “We provide such good service over the phone resulting in barriers for users going on web. I think this is a major issue for most government agencies.”. Providing such a value service over the phone or the counter acts as a deterrent for user transitioning to online services. To change citizens behaviour organisations must consider these forces. Organisations must consider easier transition for citizens going to digital by starting to think how they can incentivize these user groups and creating value for the switch.

Emerging Theme 3

Practitioner six, had a view that was uniquely interesting, it suggested that user adoption barriers might be led by Government organisations structural complexities. Users are faced with challenges of understanding the differences between government organisations. Practitioner six argues that the silo nature of government being a challenge to citizens from a compliance perspective. The nature of different government agencies, all providing different services can confuse citizens, as where most citizens would prefer to view Government as one entity. Practitioner six goes on to suggest “Government structural challenges, the fact that agencies are set up independently and are funded separately. Including the performance of the CEO is measured by the KPI of that agency. The incentive to collaborate and jointly, is not really that robust.

The adverse impact is standardization to the end user. The disjointedness of government of services can create barriers to users.”. If we look at an example where citizens wanting to start a business, they would be required to interact with different government agencies in the current NZ government environment. Practitioner six argues the services are too disjointed and creating challenges for user taking up digital

services. Due to these complexities, practitioner six suggests users rather transact face to face to ensure they make the right decisions. It would be more ideal if services are more streamlined where citizens are able to deal with government digitally in a one-stop shop model.

Overall, user barriers to adoption held similar contrasting views as identified within the findings in the literature. The data from the research have identified some emerging themes to user adoption barriers that provide a good case for further research to better understand the validity based on larger data set. Amongst all practitioners a common view shared when asked “what are good strategies for managing user barriers to adoption?”, it was suggested that organisations to place more considerations for these user groups that are faced with barriers to adoption. Recommending organisations to use a more targeted approach when dealing with barriers by using methodologies like service design.

Managing user adoption barriers

The practitioners were asked to respond to “What their views are for influencing organisations to having awareness on user barriers to adoption?”. In addition also identifying what they believed was the best approach in managing user adoption barriers. A common view shared amongst practitioners was the use service design methodology that provides a framework to support user centric design.

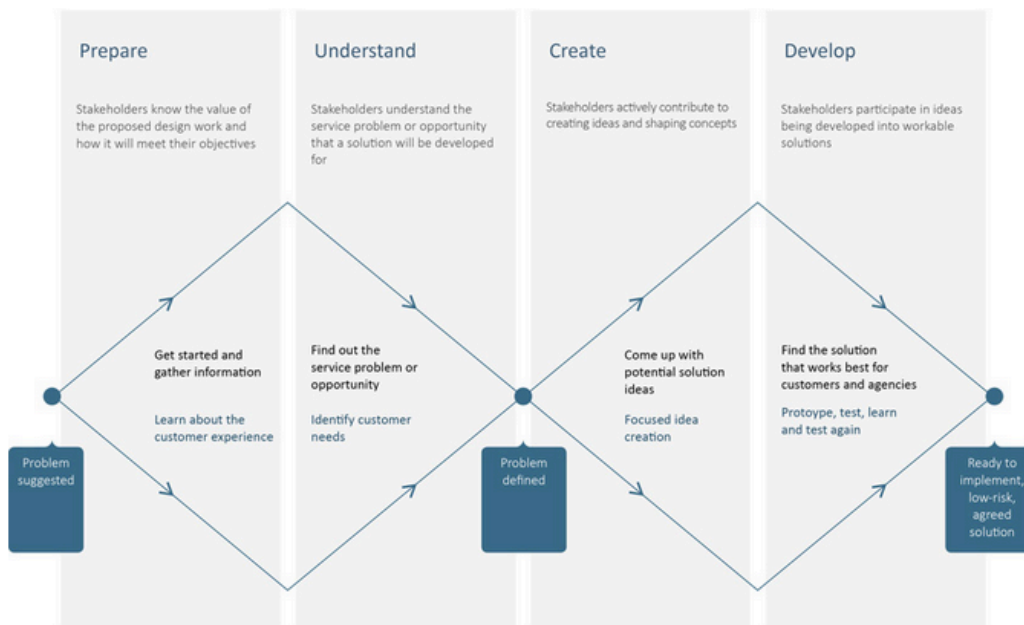
More recently NZ Government have taken a service design approach when implementing new projects that deliver new products to citizens. This would suggest Government adopting methodology is largely based on the needs to shift to more sustainable services by going digital and as a result reducing baseline cost from minimising tradition service delivery methods. Service design as suggested by New Zealand Government (New Zealand Web tool

Kit, 2015) is an “approach for designing customer-centred services. It is for identifying service problems and opportunities and working out the best service solution for customers and agencies.

This approach is broken down into four phases of work:

1. Prepare Phase: finding out and understanding customer and business needs.
2. Understand Phase: identifying the service problem or opportunity.
3. Create Phase: collaborating to come up with potential solution ideas.
4. Develop Phase: prototyping and testing to develop ideas into workable solutions.

(New Zealand Web tool Kit, 2015, p.g. 1)”



NZ Service design methodology (New Zealand Web tool Kit, 2015)

The model above by NZ government provides a methodology that supports “ Customer at centre, design with empathy and understanding of customer experiences, needs and desired outcomes. (New Zealand Web tool Kit, 2015, p.g. 1)”

As practitioner one states “Techniques like customer service design is used to think about these user groups to tease out their feelings and work out what barriers they have.”. Similarly, practitioner six suggested, “Inviting customers to trial prototypes and using customer testing to exploring the barriers they face”. Practitioner five goes on to suggest “Customer testing of the current state and testing a prototype of the future state. Doing this in a number of ways, such as location specific offices, running mini seminars on topics, surveying techniques, product seminars with targeted the user group.”. All three practitioners are suggesting techniques and a method that forms part of the service design methodology to help organisations to better understand users faced with barriers to adoption.

I would agree all suggestions provided above are contributing factors in reducing barriers to user adoption barriers, however I would also argue, that there are additional forces such as fiscal challenges and time constraints that may force organisation to ignore these principals. As suggested by practitioner six “I think this is related to time and cost, but there is a level of arrogance from government agencies.” It is interesting this point made by practitioner six, where the ideal of government holding a level of arrogance when considering digital service design. Views from practitioner four was identical and stated that “Organisation can be arrogant for designing for services.”. This suggest even though there are methodologies and willingness from agencies and practitioners to reduce barriers to adoption, depending on time and cost variables there are views from practitioners that government agencies have a persona of knowing what is right for citizens when are faced with these challenges. However these views are from the two practitioners are inconclusive based on the size of the dataset collected and would require further research to establish more validity.

Using techniques for solving users barriers adoption barriers are critical when designing digital services for citizens. When any new services are made available to citizens it is just as important for projects and organisations to have metrics in place to measure citizens uptake as way to measure success of a project.

Measuring user uptake

Practitioner was requested to respond to their views on organisations measuring citizen uptake as a critical success factor. Common views were shared amongst all practitioners where they all agreed that citizen uptake is one of the most important measurements, when delivering digital services in government.

As outlined by practitioner two when measuring user uptake “It provides a view of different business models, compare by traditional versus digital services in government.”. Practitioner five also had similar views suggesting “If you are implementing web services it provides a better customer experience. Is always about money, saving phone calls. Moving digital is about saving money so it is important to measure.”. Both views have a correlation to saving baseline cost from reducing services provided through the brick and mortar channel.

The measurement of user uptake was important from the view of all the practitioners’, they all agree that it provides a perspective on the success of implementation of digital services. However in contrary, a common view amongst practitioners, they believed that traditional brick and mortar services should still remain existence when dealing with complex business services.

Digital Services versus Traditional Services

Practitioners were asked to provide views on benefits from retaining traditional brick and mortar services delivery methods. The common view shared is that traditional service delivery methods need to be retained for complex business processes. As practitioner four

states, “Something’s can’t be done online, and face to face is required. Exceptional circumstances where traditional services are required such as face to face responses. This will be generation dependent and may be more beneficial for older minorities.”. Similarly practitioner four indicated that there are some services in particular social services at nature that requires human interactions. The ability to bring the emotion and sympathy dimensions to some of these services is critical and is not able to be supported by technology. Practitioner one also shared similar perspectives that brick and mortar services provided “Benefits, that face to face services provided a better model to solve harder problems.”.

However, there were contrary views; practitioner five stated “Probably no benefits in retaining brick and mortar services. But we can think about other methods that can deliver the face-to-face interactions required.”. This aligns with what is identified within the literature where Martin and Rice (2011) suggest there are opportunities for public agencies to consider the development of complementary and higher quality telephony based services that cater specifically for the needs of older customers who may not readily engage with the government in online environment.

Government should look at opportunities where they can provide digital services in a more personal way that delivers a more targeted approach to user groups that are faced with adoption barriers. Such as if government is able to remove barriers by having a better understanding of the age variable, according to Osman, Poulson and Nicolle it can “improve older peoples’ quality of life by providing them access to interesting relevant and useful information as well as the opportunity to interact with other people.”(2005) when using the internet.

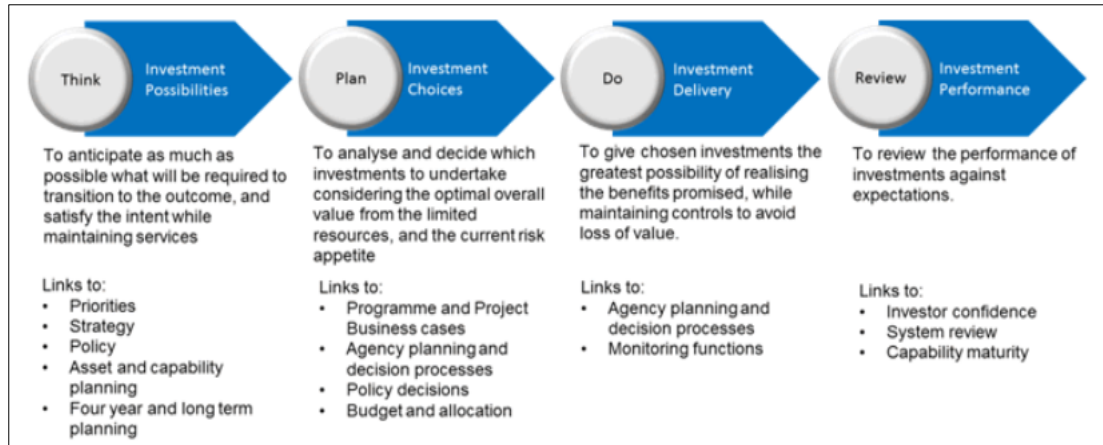
Organisation impacts when there are user adoption barriers

Practitioners were requested to provide their views on organisation impacts that are challenged with users facing adoption barriers. Cost to government was a common view shared amongst the practitioners. As practitioner two suggest this has an overall impact on “Cost to the tax payer” by not delivering useful services to citizens.

Supporting views were provided by practitioner three “Money being spent on multiple channels, where the money could be better use on service that are in more need.”. This view suggests if user’s barriers to adoption are not well managed, then there are impacts on government spending. Government now being subject to tight fiscal constraints in the current economic environment, funding could be better spent on initiatives that are in more need from a citizen’s perspective. I would agree with this view may be true in the case of NZ Government ten years ago, however with the economic environment there are a lot more scrutiny on capital spending by Government Agencies.

Capital expenditure is being more closely monitored by central government agency i.e. The Treasury. An approach set out by Treasury “Better Business Case” (BBC) provides the methodology that ensures more rigour is applied to the assessment of capital expenditure. As outlined by Treasury “The primary objective of BBC is to enable smart investment decisions for public value. Government’s investment life cycle is made up of four phases: think, plan, do and review. Together these create an ongoing dynamic as ideas are tested, refined and adopted or discarded within an agency and across government. Each phase has different implications for agencies and decision makers”

” (The Treasury, 2015)



Better Business Case – Investment Life Cycle” (The Treasury, 2015)

The diagram above depicts the process steps in developing an investment case in support of seeking large capital expenditure. Investment decision-making being so tightly lock down will create challenges for Government organisations seeking funding, unless there is a well thought through business case to support it. Hence, measuring uptake will be an important measurement when understanding the success of a project and ensuring central agencies cost reduction are being made by removing unsustainable services using traditional methods.

All other views provided by practitioners were uniquely different. As practitioner two suggests, “Maybe organisation are increasing traditional methods anecdotally” this indicates the adverse impacts to not considering user barriers and driving up uptake in traditional services anecdotally. Practitioner two’s view shared commonality with the view of Practitioner five, “We provide such good service over the phone resulting in barriers to users going on the web”. This suggest, if government agencies are continuously delivering services that does meet users needs, then citizens will continue to rely on traditional brick and mortar services. Noting the fact that these services are reliable.

An interesting view was given by practitioner 4 “Organisation providing fundamental services can be arrogant for designing for services. To a certain extent this is my experience. Experience from a number of project, people is providing personal perspectives rather than

research.”. Based on this view it suggest, practitioners and organisation often hold a level of arrogance when in the process of designing services for citizens. However, this view is inconclusive based on the size of the dataset but raises an interesting dimension in decision making in design of digital services and is also providing a good case for further research.

Conclusions

The research based on the six interviews has provided some interesting insights on their perception of users barriers to adoption. When asked to provide views on “Do you believe barriers to adoption in using digital services within Government is a large problem in NZ?” most of the practitioners voted yes. See below for comments provided on each practitioner:

Do you think “barriers to adoption” in e-Government is a large problem within New Zealand?			
	Yes	No	Key Points (Direct from Practitioner)
Practitioner 1	✓		“From a government perspective is quite a large problem. Is talked about, there is a lot of noise but implementation is different.” (P1, 2015)
Practitioner 2		✓	“I don’t think is a big problem, but is a big channel for services but as long as it is justifiable. Enough volumes for existence. Don’t see traditional methods being decommissioned for complex business models.” (P2, 2015)
Practitioner 3		✓	“I don’t think is a large problem but funding is an issue. Is not a large problem because NZ is quite an educated society and NZ is a small enough country to make changes quickly.” (P3, 2015)
Practitioner 4	✓		“Do we understand barriers well enough within the NZ context. Is a big problem and not enough is being done by government to understand the root causes to barriers to adoption.” (P4, 2015)

Practitioner 5	✓		“Yes, because the structures for undertaking improvement work in NZ government is too cumbersome. Is still backwards like in the 80’s – 90’s. Getting permission and regulation to get budget to do digital services work. Regimented structure of organisation.” (P5, 2015)
Practitioner 6	✓		“Yes, it is reasonably a big problem. NZ is pretty technology savvy. I think we need we need to be better uptake of services. There must be easier to do some of the things we currently operate. Be more streamline.” (P6, 2015)

Most practitioners recognised this as a large problem face by government. However, all practitioners still agreed there is still a need for the existence of brick and mortar services for complex business processes. As outlined by practitioner “Social services like mental services, and complex nature of these products needs to be retained. Access to the internet for these types of user groups is not favourable in these situations”. Similarly as suggest by practitioner four “Something’s you can’t do online, face to face exceptions” for complex business processes.

Some of the data collected from the research were inconclusive as the opinions and views lacked commonality, but for some questions asked, it raised some interesting discussions that may prove to be good case for further research. There were many suggestions and tactics discussed amongst practitioners, one being the service design methodology introduce by

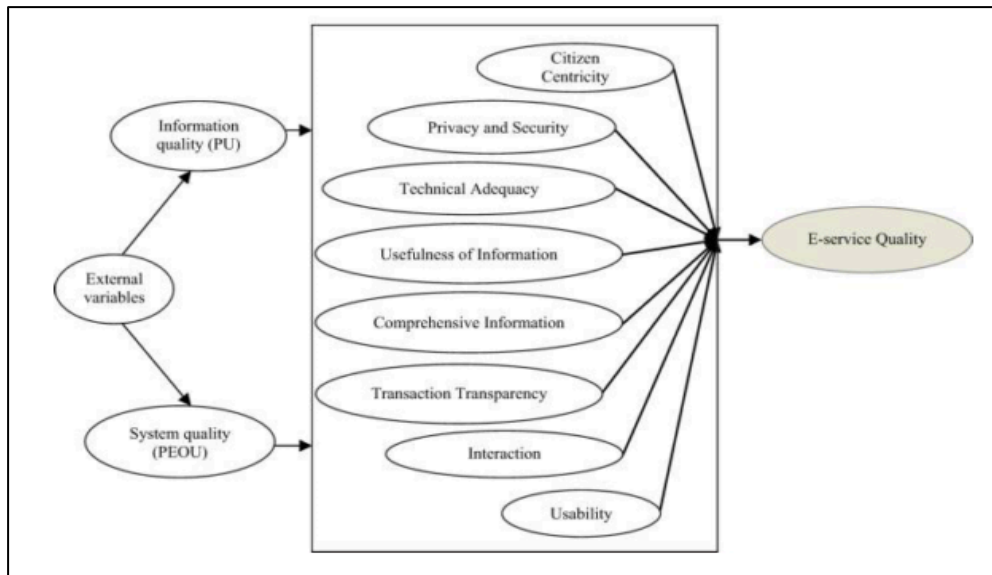
central government. However, there was a lack of a framework mentioned to directly deal with the many different variables leading to user barriers to adoption.

The practitioner's perception to user adoption barriers is extensive and there is a strong correlation to the findings within the literature. In addition, there was new emerging adoption barriers identified amongst the practitioners, that was not found with the literature reviewed. It is acknowledge that barriers to adoption is a large problem and require more focus when considering e-Government as a service channel.

Recommendation

There were many suggestions and recommendations provided by practitioners. One being is the use of Service Design Methodology suggested by New Zealand Government (New Zealand Web tool Kit, 2015) is an “approach for designing customer-centred services. The service design methodology provides a user focus lens when designing digital services, which will mitigate organisations’ biases of presuming of what is needed by the citizen. It will keep design decision making transparent as the framework provides processes for drawing out customer insights.”.

As highlighted in the research findings there was a lack of framework for understanding all adoption variables together. When assessing barriers to adoption it is recommended that organisations should use a framework that will enable organisation to assess the types of barriers individually, avoiding biases amongst practitioners and organisations. See below of an example of a framework used by Bhattacharya, et al. (2012) a framework that supports the understanding of all adoption barriers leading to the impact of e-service quality. A framework similar to this is recommended for organisations when assessing barriers to adoption.



Framework for

assessing adoption variable against e-service quality (Bhattacharya, etl. 2012)

There was a common theme identified amongst practitioners on a using a communications approach to drive better awareness of digital service implementation. As outlined by practitioner four “using communication as a strategy (different mediums) to target messages to build better support systems to help users overcome barriers”. Similarly suggested by practitioner five “Setting your information at the appropriate level, and being more targeted towards user group.”. Both practitioners share similar views in suggesting in a communication approach to target training, support and content in helping to mitigate user barriers. This recommendation is using a communication method that can provide a more targeted to different user groups that are faced with adoption barriers.

Last but not the least is a recommendation suggested by practitioner five “Reducing phone channel services to core hours. Establishing customer loyalty and removing the customer reliance on the phone channel.”. As highlighted in the findings, there was views that government is delivering too good of brick and mortar services, resulting in citizens reliance of this model. Organisations have an opportunity to changing these behaviours by providing

better-blended services using newer technologies to deliver higher quality digital services that brings a more personal touch. Hopefully slowly removing the citizen's dependencies on using face-to-face services. Government organisations considering this approach will need to consider further research into designing these types of digital services that are customised to bring a personal touch. However, organisation must be mindful that not all brick and mortar services can be replicated by technology.

Further Research

View from practitioner four and six was identical "Organisation can be arrogant for designing for services.". This suggest even though there are methodologies and willingness from agencies and practitioners to reduce barriers to adoption, depending on time and cost variables there are views from practitioners that government agencies have a persona of knowing what is right for citizens when are faced with these challenges. However these views are from two practitioners and are inconclusive based on the size of the dataset and would require further research to establish more validity. In addition a recommendation for more research on the different frameworks available for organisations for addressing barriers to adoption. This will benefit organisations in supporting the process to design better services in supporting citizens.

Bibliography

- Akram, M. S., & Malik, A. (2012). Evaluating citizens' readiness to embrace e-government services. *13th Annual International Conference on Digital Government Research (dg.o '12)*, 58–67. <http://doi.org/10.1145/2307729.2307740>
- Al-Shafi, S. (2009) Factors Affecting E-Government Implementation and Adoption in the State of Qatar. Ph.D. Thesis, Brunel University, London.
- Al-shboul, M., Rababah, O., Al-shboul, M., & Ghnemat, R. (2014). Challenges and Factors Affecting the Implementation of E-Government in Jordan, (December), 1111–1127.
- Alkrajji, A., Jackson, T., & Murray, I. (2013). Barriers to the widespread adoption of health data standards: An exploratory qualitative study in tertiary healthcare organizations in Saudi Arabia. *Journal of Medical Systems*, 37(2). <http://doi.org/10.1007/s10916-012-9895-2>
- Andreasson, K., Millard, J., & Snaprud, M. (2012). Evolving e-government benchmarking to better cover technology development and emerging societal needs. *Proceedings of the 6th International Conference on Theory and Practice of Electronic Governance - ICEGOV '12*, 430. <http://doi.org/10.1145/2463728.2463811>
- Bellanger, F. and Carter, L. 2008. Trust and risk in e- government adoption. *Journal of Strategic Information systems* 17, 165-176.
- Bhattacharya, D., Gulla, U., Gupta, M.P. (2012). E-service quality model for Indian government portals : citizens ' perspective. <http://doi.org/10.1108/17410391211224408>
- Bin, Q., & Sun, S. Q. (2003). Cultural differences in e-commerce : A comparison between the U . S . and China.
- Bryman, A., & Bell, E. (2011). *Business Research Methods 3e*: Oxford university press.
- Creswell, J. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*: SAGE Publications, Incorporated.
- Dugdale, A., Daly, A., Papandrea, F., & Maley, M. (2005). Accessing e-government: Challenges for citizens and organizations. *International Review of Administrative Sciences*, 71(1), 109-18.
- Dombrowski, L., Hayes, G. R., Mazmanian, M., & Volda, a. (2014). E-Government Intermediaries and the Challenges of Access and Trust. *ACM Transactions on Computer-Human Interaction*, 21(2), 1–22. <http://doi.org/10.1145/2559985>
- Ferro, E., Helbig, N. C., & Gil-Garcia, J. R. 2011. The role of IT literacy in defining digital divide policy needs. *Government Information Quarterly*, 28, 3-10.
-

- Hall, T. E., & Owens, J. (2011). The digital divide and e-government services. *Proceedings of the 5th International Conference on Theory and Practice of Electronic Governance - ICEGOV '11*, 37. <http://doi.org/10.1145/2072069.2072076>
- Heritage, J. (1984). *Garfinkel and Ethnomethodology*. Cambridge: Polity Press.
- Heritage, J. (1987). 'Ethnomethodology', in A. Giddens and J. H. Turner (eds), *Social Theory Today*. Cambridge: Polity Press.
- Jaeger, P.T., Bertot. (2010). Designing, implementing, and evaluating user-centered and citizen-centered e-government. *International Journal of Electronic Government Research*, 6 (2), 1-17. doi:10.4018/jegr.2010040101
- Lenhart, A., Horrigan, J., Rainie, L., Allen, K., Boyce, A., Madden, M., and O'Grady, E. The Ever-Shifting Internet Population: A New Look at Internet Access and the Digital Divide. The Pew Internet and American Life Project, Washington, D.C. 2003. Available at: http://www.pewInternet.org/PPF/r/88/report_display.asp. Retrieved February 13, 2007.
- Martin, N., & Rice, J. (2011). Evaluating and Designing Electronic Government for the Future. *International Journal of Electronic Government Research*, 7(3), 38–56. <http://doi.org/10.4018/jegr.2011070103>
- Mishra, a, & Mishra, D. (2011). E-Government - Exploring the Different Dimensions Of Challenges, Implementation, and Success Factors. *Data Base for Advances in Information Systems*, 42(4), 23–37. <http://doi.org/10.1145/2096140.2096143>
- Mishra, G. (2014). e-Government in rural India : An insight into the sustainability issues of telecentres.
- Nam, T., & Sayogo, D. S. (2011). Who Uses E-Government? Examining the Digital Divide in E-Government Use. *Icegov 2011*, 27–36. <http://doi.org/10.1145/2072069.2072075>
- New Zealand Government key results areas: <http://www.ssc.govt.nz/better-public-services>
- New Zealand Web tool kit. (2015) Services Design Approach. Retrieved from <https://webtoolkit.govt.nz/guidance/service-design/>
- O'Leary, Z., (2004). The essential guide to doing research. SAGE Publications Incorporated.
- Osman, Z., Poulson, D., & Nicolle, C. (2005). Introducing computers and the internet to older users: Findings from the Care OnLine project. *Universal Access in the Information Society*, 4(1), 16–23. <http://doi.org/10.1007/s10209-005-0111-8>
- Persaud, A., & Persaud, P. (2013). Rethinking E-Government Adoption: *International Journal of Electronic Government Research*, 9(4), 56–74. <http://doi.org/10.4018/ijegr.2013100104>

- Pilling, D. (n.d.). Moving Toward E-Government – Effective Strategies for Increasing Access and Use of the Internet Among Non- Internet Users in the U . S . and U . K . *World Wide Web Internet And Web Information Systems*, 35–46.
- Qaisar, N. and Khan, H. (2010) E-Government Challenges in Public Sector: A Case Study of Pakistan. *International Journal of Computer Science Issues*, 7, 310-317. <http://www.ijcsi.org/papers/7-5-310-317.pdf>
- Rokhman, A. (2011) Potential Users and Critical Success Factors of E-Government Services: The Case of Indonesia. *Proceedings of the International Conference on Public Organization*, Yogyakarta, 21-22 January 2011, 231-244.
- Sang, S., Lee, J. and Lee, J. (2009) A Study on the Contribution Factors and Challenges to the Implementation of E-Government in Cambodia. *Journal of Software*, 4, 529 – 535. <http://dx.doi.org/10.4304/jsw.4.6.529-535>
- Shah, B. P., & Lim, N. (2011). Using social media to increase e-government adoption in developing countries. *Proceedings of the 5th International Conference on Theory and Practice of Electronic Governance - ICEGOV '11*, 205. <http://doi.org/10.1145/2072069.2072103>
- Shan, S., Wang, L., Wang, J., Hao, Y., & Hua, F. (2011). Research on e-Government evaluation model based on the principal component analysis. *Information Technology and Management*, 12(2), 173–185. <http://doi.org/10.1007/s10799-011-0083-8>
- Shannak, R. (2013) The Difficulties and Possibilities of E-Government: The Case of Jordan. *Journal of Management Research*, 5, 189-204. <http://dx.doi.org/10.5296/jmr.v5i2.2560> [17]
- Smith, S. and Jamieson, R. (2006). 'Determining Key Factors in E-Government Information System Security', *Information Systems Management*, 23(2), 23 – 32.
- Tan, S.J.(1999). Strategies for reducing consumers' risk aversion in Internet shopping. *Journal of Consumer Marketing*, 16(2), 163-180.
- Titah, R. and Barki, H. (2006) E-Government Adoption and Acceptance: A Literature Review. *International Journal of Electronic Government Research*, 2, 23-57. <http://dx.doi.org/10.4018/jegr.2006070102>
- The Treasury. (2015) Better Business Case – Introduction from: <http://www.treasury.govt.nz/statesector/investmentmanagement/plan/bbc>
- Yuen, (2010). Internet Banking Adoption: Comparing Developed and Developing Countries. *{Yuen, 2010 #5712}*, 51(1), 52–61. Retrieved from <http://search.proquest.com/docview/808409751?accountid=13552>http://findit.lib.rmit.edu.au:9003/sfx_local?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&genre=article&sid=ProQ:ProQ:biglobal&atitle=INTERNET+BANKING+ADOPTION:+COMPARING+DEVE

Appendix 1 - Interview Questionnaire – Semi Structured

1. What are the types of organisation you have worked for in the past?
 - a. What best describe you're your role and the service you have provided within these organisations?

2. Please describe your experiences working on digital services or products impacting on citizens within projects or programmes?
 - a. Have you worked on any e-Government projects or programmes for services impacting on citizens?

 - b. When designing e-services for citizens do you think citizen uptake should be a critical success factor that should be measured?

3. Should benefits be measured on all phases within a project and if they are measured, how do think they should be measured? Project phases, e.g. Business Case through to post implementation.
 - a. In your experience, have organisations you have worked for in the past or current have measured benefits against citizen's uptake?

- b. If yes, why do you think is important to measure citizen uptake as a benefit?

 - c. If no, do you see in the foreseeable future for your organisation to measure citizen uptake?

 - 4. Perceived benefits
 - a. What are your perceptions on benefits for implementing Government services versus the traditional brick and mortar services? e.g. over the counter services

 - b. What are types of benefits if any do you perceive on Government retaining tradition service delivery methods. e.g. face to face over the counter services

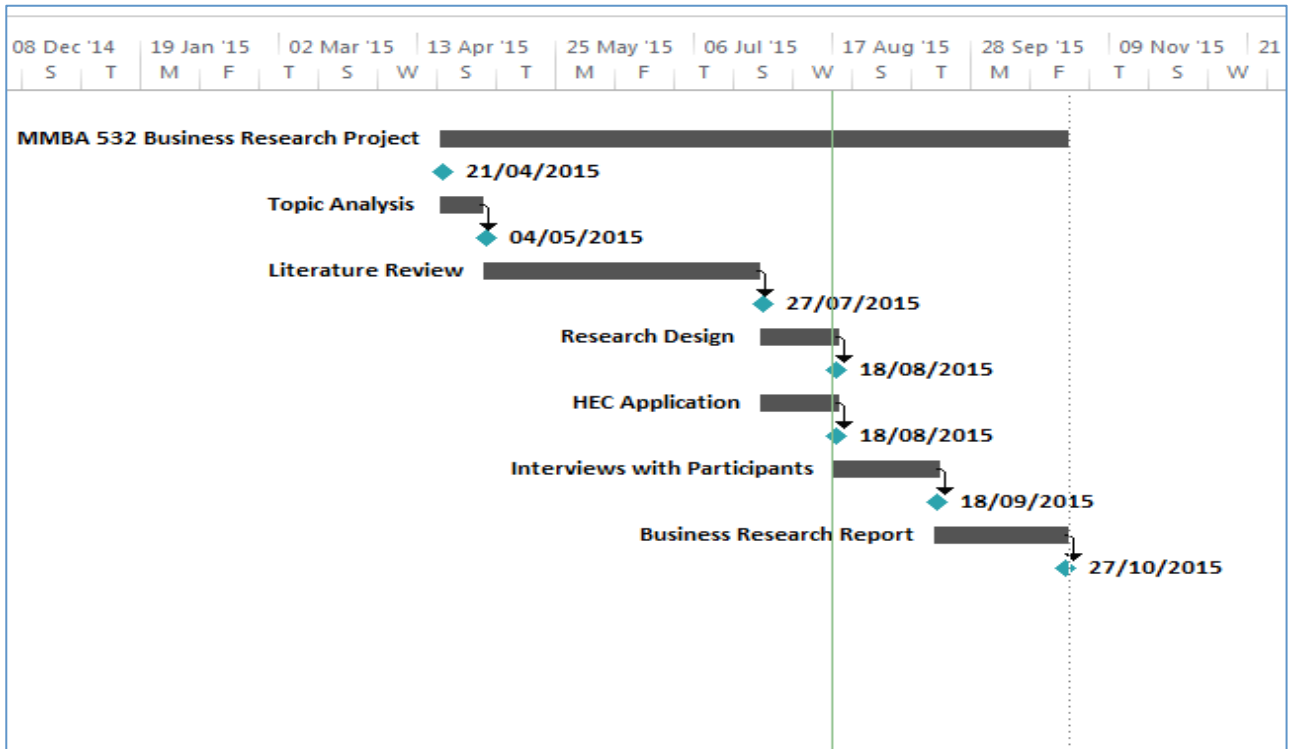
 - 5. Perceived adoption barriers
 - a. What are your perceptions on adoption barriers in NZ citizens using e-government services?

 - b. As a practitioner what do you do ensure or influence a project to consider barriers adoption as part of the design or research?
-

6. Strategy and planning to tackle barriers to adoption
 - a. Are you aware in the organisation you have worked for in the past or current have a strategy or focus for tackling barriers to adoption?
 - i. If yes, what are the barriers to adoption the organisation thinks are important?
 - ii. If no, do you think the organisation should consider these barriers adoption more strategically when making investment decision of digital services?
7. Managing barriers to adoption
 - a. How do you think barriers to adoption should be managed in your opinion?
8. Impacts
 - a. What is your perception on the impacts to organisation when there are barriers to adoption prevent uptake in using e-Government services?
9. Do you think “barriers to adoption” in e-Government is a large problem within New Zealand?

Appendix 2 - Gantt chart and Interview Dates

The Gantt diagram illustrates the key milestones and critical path of the business research.



Appendix 3 – Letter Request and Consent Form



Letter Request for a Personal Interview

2 May 2006

{Name}
 {Title}
 {Company Name}
 {Address}

Dear XXXXX

I would like the opportunity to interview you as part of my MBA Business Research Project. The research is concerned with “The perceived perceptions to barriers to adoption in E-Government from a practitioner’s perspective”. The interview is designed to take between 60-90 minutes.

The success of this research is reliant upon your honest opinion so maintaining confidentiality is of the utmost importance. **Under no circumstances will the information presented during the interview be attributed to any one individual. The organisation will not be identified and your name and title will remain anonymous.** Interview tapes and transcripts will be kept in a locked office, and will be destroyed after one year from the research being published. The research findings will be published in the Victoria University library and excerpts may be included in academic publications and/or academic conferences.

Victoria University of Wellington has granted ethical approval as a teaching activity and this project has been reviewed by the MBA 532 Business Research Project course Coordinator.

With your permission the interview will be recorded and a copy of the final research report will be issued upon request. If you for any reason would like to make contact regarding this research please contact one of the following:

Hoe Wai Chin	021527466	Lionel.Chin@gmail.com
Dr David Stewart	04 463 515	David.Stewart@vuw.ac.nz

Yours sincerely
 Hoe Wai Chin



Consent Form for Personal Interview - Sample

Personal Interview

CONSENT FORM

I agree to be interviewed by Hoe Wai Chin for the purposes of his MBA Business Research Project and consent to the use of my opinions and information. I understand that none of the opinions or statements that I make during the interview will be attributed to me personally, and that I may withdraw from the research before 30th September 2015. I am also aware that the findings derived from this study will be published in the Victoria University Library and excerpts may be included in academic publications and/or academic conferences.

I have been informed of the purpose of the research and the confidentiality conditions.

I understand that raw data collected during the interview will only be available to the researcher, Hoe Wai Chin, and his supervisor, Dr David Stewart.

I have been informed that I will receive a copy of the final research project upon request.

Name: Date:

Signed:

If you would like a copy of the research please add your email/address below:

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