Improving E-Government Services for Non-English Speaking Background (NESB) Communities in Australia

M. Mohammad, and Y-C Lan

Abstract—Australian government agencies have a natural desire to provide migrants a wide range of opportunities. Consequently, government online services should be equally available to migrants with a non-English speaking background (NESB). Despite the commendable efforts of governments and local agencies in Australia to provide such services, in reality, many NESB communities are not taking advantage of these services. This article—based on an extensive case study regarding the use of online government services by the Arabic NESB community in Australia—reports on the possible reasons for this issue, as well as suggestions for improvement. The conclusion is that Australia should implement ICT-based or e-government policies, programmes, and services that more accurately reflect migrant cultures and languages so that migrant integration can be more fully accomplished. Specifically, this article presents an NESB Model that adopts the value of user-centricity or a more individual-focused approach to government online services in Australia.

Keywords—Barriers to use, e-government, ICT, NESB community, online services.

I. INTRODUCTION

IN Australia, there is a significant lack of theoretical conceptualisation of how government impacts socio-cultural aspirations of non-English speaking background (NESB) communities. Additionally, significant investigations related to government MIS implementation contingencies in particular regions are also lacking, despite the fact that such contingencies lend to barriers-to-access theory and prompt best-approach perspectives. More precisely, there is a scarcity of research investigating cultural, social, and political factors in the context of e-government and especially how those factors may influence communities of certain sub-cultures in their use of government-sponsored IS.

Thus, of special significance in this article is the problem of prohibitive barriers to NESB adoption and successful use of Australian government information systems (at both the local and national level). These restrictive barriers include cultural barriers, such as language differences (low proficiency in Standard Australian English, as native speakers of languages other than English) and social and political barriers, such as NESB user expectation and perception of government information technologies/systems as well as barriers to

accessing these services. Overcoming these barriers will benefit not only the members of the NESB community, but also the Australian government whose goal it is to provide services to *all* of its citizens.

This article re-directs the emphasis of government information services (GIS) available online from their traditional institution-based focus to one that is more user-focused. Such a user-focused approach integrates the needs and perceptions of NESB migrants and communities in Australia. As a result, it identifies and analyses the barriers between NESB migrant communities and the Australian government's information services.

The ultimate goal of the research presented in this article—based on an extensive case study—is to establish potential strategies allowing simple access for NESB migrants to online government information and social services. Particularly import in this context is two primary issues: barriers related to *actual accessibility* (or, more precisely, *lack of accessibility*) [1-4] and barriers of *perception* [3-7].

Certainly, barriers need to be addressed and perceptions (of existing information systems and of barriers) need to be understood, and an implementation of strategy that best affords accessibility for NESB communities needs to be suggested. This article fills these needs and investigates a relatively neglected issue of accessibility for the NESB community—in the context of strategic implementation as informed by composite theory such as Technology Acceptance, Reasoned Action, and Planned Behaviour/Structural Behaviour.

II. REVIEW OF LITERATURE

There is significant potential for Australia to take major steps toward improving its e-government access. Australia has 721 local government bodies [8]. During 2010, Australia implemented specific plans for e-government encompassed within the Data Centre Strategy [9], through the Ministry of Finance and Deregulation, for the purpose of providing Data Storage facility for the ICT industry. The agencies that are under the jurisdiction of the Finance Ministry and Accountability Act (FMA) typically are supportive of government programmes that provide services to citizens and businesses. Since that is the case, the circumstances are positive for any efforts that may come for future data centre requirements. This includes government-initiated schemes and actions designed to achieve $1 billion savings in costs, as well as to build up infrastructure for ICT industry for the next 10-

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World Academy of Science, Engineering and Technology
International Journal of Economics and Management Engineering
Vol:6, No:12, 2012

15 years in taking Australia to a top position in the world ranking for e-readiness and e-governance [8].

The National Office of Information Economy (NOIE) is one of the primary motivators for moving e-government forward in Australia [8]. In effect, the NOIE provides leadership related to all of the government information management strategies in the country, including overseeing policy, defining specifications, and offering guidelines for brand new initiatives. In a recent ranking published in the Economist and made under the E-Readiness Rankings, Australia was listed fourth in the global top-ten most e-ready countries worldwide, following the United States, Hong Kong and the Netherlands [8].

Every country that experiences a lower degree of participation in online government services by its citizens considers the situation a challenge, and this includes Australia. The reasons for the lack of use may include a deficiency of direct, online consultation by governments at various levels in addition to a weak presence of elected representatives and political parties online [10]. This trend requires assertive methods to be implemented along with an increasing trend in net-capable citizens networking between themselves to represent government gaps with location independence and demand for transparency. Lack of trust in using the Internet is a definite factor for less participation in e-government, as confirmed by several researchers [11, 12].

Without a doubt, the Australian government understands the value and importance of such services. For example, the provision of services via the Internet and other IT methods has continued to increase in recent years. In addition, the government regularly published the results of its internal studies regarding the effectiveness of online government services. The most recent publication in this context, "Australians' use and satisfaction with e-government services", published by the Australian Government Information Management Office [13] (AGIMO, 2011) is a prime example of the government's efforts. This report is a very detailed (96 pages) assessment of how average citizens view the current state of e-government services. The purpose of the report was to determine the level of satisfaction with such services, as well as to determine how and if improvements could be made.

However, it is significant to note that the AGIMO report does not address the NESB population at all. Indeed, all of the statistics used to determine whether or not the average Australian views the current e-government services as effective or beneficial do not take into consideration the views of the NESB community. The only specific demographic identification made in the AGIMO study [13] was age groups. This supports one of the primary reasons why the study this article is based on is highly important and valuable to both the government and the NESB community. Past and current research and surveys regarding Australian e-government services fail to take into consideration the unique needs of the NESB community. In contrast, this article is focused solely on those needs and the results add significantly to the e-government literature, especially as it relates to NESB users

and potential users.

There are an increasing number of studies related to the use of various features of ICT to aid governments in providing necessary services to the public. The government's use of the Internet to provide access to services is referred to as e-government or government MIS [3, 4, 14, 15]. Research includes e-government processes in specific regions as well as use of ICT in the public sector [1, 4]. Included in this increasing literature are studies directly related to Australia's e-government efforts [9, 16-18].

It has also been observed [19] that members of NESB communities who perceive that the skills, support and advice they are receiving from governmental services are based on individualistic norms – in other words, norms based on the needs of non-NESB individuals – it is likely that they will consider such services as inappropriate for their cultural needs or issues. As a result, it is acknowledged a legitimate need to provide tailored and culturally appropriate service delivery for NESB communities, especially for preventative or universal services [19].

Perhaps more importantly, if NESB individuals have had a negative experience when attempting to obtain services, or if the services were not perceived as beneficial to them, they may be reluctant to engage with services when there is a crisis and service provision is necessary. Consequently, failure on the part of members of a NESB community to perceive that culturally appropriate delivery of preventative services are available to them, can result in negative impacts on these communities [19].

Additionally, further research [20] concluded that the unique nature of some services provided by e-government (especially those that allow for one-time as well as recurring transactions) complicates a complete assessment of overall quality of service. Another study [21] noted that three obstacles limit the impact of e-government efforts: ineffective governance, lack of Web-related capabilities, and reluctance to allow user participation in the creation of applications and content. The leading source of the last issue stems from a desire for maintaining complete control over content. But, as users become more accustomed to online participatory experiences, governments' failure to embrace improvements such as Web 2.0 threatens to reinforce the public's perception that e-government offers a vastly diminished experience.

The implementation of complex IS typically requires substantial changes both in the technology and the organisation that must often be learned through experience [22]. Developing new technical knowledge is a slow and difficult process of learning particularly in NESB. Of course, new technology is often complicated even for the typical English-speaking individual, but this process can be even more overwhelming for members of the NESB community, especially when instructions or useful information is provided only in English. If this critical information is not provided in a language that the user feels comfortable with, it may be nearly impossible for members of these communities to learn how to use the services that are available to them.

Critically, access "is one of the seven primary practices

World Academy of Science, Engineering and Technology
International Journal of Economics and Management Engineering
Vol:6, No:12, 2012

necessary to productivity" in organisations [1]. Essential in the evolution IS in general, and e-government services in particular, is finding ways to improve the communication between an IS sender and an IS receiver. Yet, it must be accepted that the determining factor in successful access of information is not merely its availability. Rather, agencies and governments must also be guided by the reasons behind the decision to access information and views or opinions about these technologies. In order for the Australian government to accomplish its goal of providing access to all its e-government services, it is necessary for NESB migrants to obtain a shared knowledge of the technology—and that knowledge should be shared by the majority of the community [1].

Indeed, without such knowledge acceptance, NESB users will never overcome the perceived barriers to online government services [1-4]. This knowledge involves at least two critical factors [23]: (1) shared goals that inspire doing common tasks and efforts; and (2) the end results in which shared values can shape both shared goals and shared tasks.

Subsequently, behavioural theory credits IS/IT implementation and integration with the resolution of certain issues that are important to governments and its citizens. According to [20], it insists on "*sustainable data quality and integrity* [a given imperative], a flexible technical framework and *user-oriented change management*". This is especially true in the context of critical success factors involving senior management support, vendor relationship, corporate culture change, and project governance and execution.

Based on *Australia's Digital Economy: Future Directions* report [24], and also considered a critical success factor for improving online government services, there is a need for governments in the country to embrace "open access to appropriate categories of information" that enables "improved decision making by individuals, research agencies and private sector organisations." One of the more promising suggestions presented in that report is the creation of a network of digital ICTs which would enable the "use and re-use of government information in creative or unique ways that can produce economic benefits and promote social wellbeing" [24].

III. OVERVIEW OF CASE STUDY DATA

A. Conceptual Framework

Key studies [4] pointed out that, conceptually, IT/IS evaluation is closely related to adoption, and further, is relevant to accessibility and actual use. The research design of the present research is based on a thorough IT/IS evaluation literature review and informed by theoretical constructs rooted in relevant theory: First, conceptual research models, as one article [25] noted, suggest "a connection between implementation of IT strategy and the content of the strategy" and with an emphasis on user involvement—descriptions of "user training, understanding, participation, operation, development, and support" [25].

Second, one supporter of the contingency model [3] explained that information systems implementation success "is contingent upon and a function of IS training as well as technical complexity and task interdependence". Those

authors also recommended IT/IS implementation being informed by "development of convergent models of collaborative task knowledge" [3]—lending to "enabling coordination between group members and contributing to group and individual performance" [3].

And third, proponents of process theory models [6], provided analytical frameworks for such IS conceptualisation as structurisation theory, which "offers the means to explicitly link elements of social context to human action" [6]. The research design emphasis in the present study, therefore, is on the articulation into a coherent substantive theory of user behaviour/ action and perception as it impacts accessibility and as it informs potential reconciliation of behaviour/action and perception to solve the accessibility barrier problem.

B. Case Study Participants

The study that this article reviews included 30 participants from the Arabic NESB community in Australia. They were categorised into two groups: users (15) or non-users (15) of the government online services being studied, and did not include providers of those services. Specifically, the study included interviews that were conducted with individuals in the 18-55 years age group within the designated community. Participants were obtained by means of sending letters of request for participation to the Junction Neighbourhood Centre (JNC); the Multicultural Community Services (SMCS); the Bowen Library/City Council; and the Yarra Bay House/Koori Interagency. A phone call was made to each agency, requesting permission to send these letters, and informing them of the purposes of the study. These agencies followed up and made sure the letters distributed to the targeted groups.

C. Barriers Preventing the NESB Community from Fully Accessing Online Government Services

Specific barriers to accessing the government online services were identified by means of the case study under review, including: the perceived complexity of the language (English) used for the online services; language use (services need to be provided in Arabic); age of users (older users tend to be less likely to use online services); and lack of trust in the online services (fear of others obtaining private information). These barriers were clearly identified in the NESB Arabic community included in the case study, but the interviewees also expressed a hopeful attitude that, if the local government could overcome these barriers, the services could become more widely used by community members.

The issue of usability is critical in the context of this article, since the assumption is that the Australian government is not currently providing online services that are sufficiently usable by a majority of the Non-English speaking Arabic community. The results of the interview responses confirmed this opinion, and it is clear that many members of the Arabic community believe there are serious shortcomings regarding usability of the online services. Indeed, even if the online services being provided were technologically precise, always available, and readily accessible to all members of the Arab-speaking community (which the case study revealed is not the case), it would do them little good if they were unable to use the service due to language barriers, not trusting the government website, or instructions that are unclear to the user. And, the

World Academy of Science, Engineering and Technology
International Journal of Economics and Management Engineering
Vol:6, No:12, 2012

online services have technology issues as well.

The Arabic community members that participated in the case study were clear that the barriers preventing them from successfully accessing the local government online services made it very difficult to gain full benefits from those services. Regarding lack of technical reliability, many of the respondents expressed frustration with the inability to access the website whenever and wherever they needed to. In some cases, this resulted in NESB community members choosing to bypass the online services completely and complete their tasks offline.

The other dominant barrier—the use of complicated English and/or a lack of information in Arabic—results in many members of the NESB Arabic community being frustrated with the services. Since many have no option but to use the online services, this no doubt creates negative feelings toward the local government, which has the responsibility to provide services to citizens in a way that benefits them the most.

Based on the analysis of data collected from the 30 members of the NESB Arabic community in the case study, it seems clear that the community would benefit greatly from a shift in focus on the part of government. It is important to note that an appropriate implementation strategy is needed to connect the technology used by the government to provide online services for its citizens to the NESB community in such a way that benefits that community, rather than limiting their access. The majority of participants clearly indicated that the current method of designing websites and online services for the NESB community is not effective.

IV. A NEW MODEL FOR INCLUSIVE AUSTRALIAN GOVERNMENT IT SYSTEMS
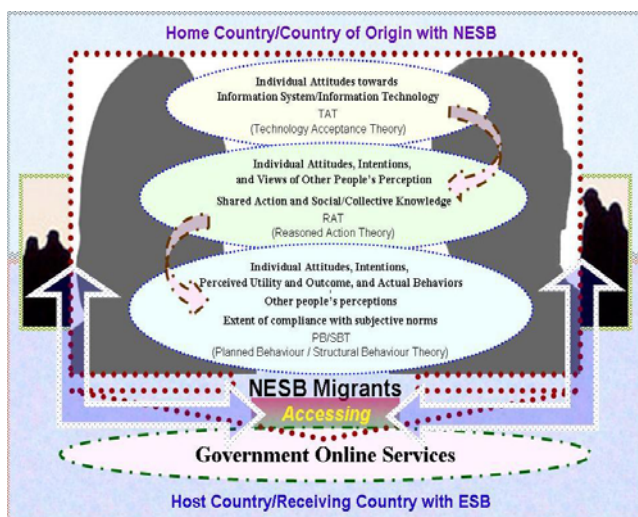

Fig. 1 NESB Model

The model suggested in this article—based upon the case study and interviews—is termed the NESB Model. Importantly, the NESB model involves the migrants' individual attitudes, intentions, perceived utility and outcome, and views about what other people think about a particular option, which pertains to accessing e-government IS in this study. Likewise, the NESB model takes into account the migrants' actual behaviours, the role of shared knowledge, and the extent of compliance based on subjective norms concerning government IS. This highlights the merging of personal and social factors in deciding whether to access (or not to access) government online services. Fig. 1 represents NESB Model.

The purpose of e-government can be served only through eliciting citizen and other stakeholder opinions, active civic-engagement and encouraging dialogue with citizens through a Virtual Socialisation Process. This helps the local government to understand the reasons for citizen apathy for devising e-government processes and programmes to entice citizens back into public governance and instill trust, morale and confidence. In this process, citizen stakeholders and non-citizen stakeholders also provide support continuously in co-designing, conceptualising, implementing, maintaining and strategising public services. This approach clearly puts apart the democratically elected and represented government bodies to make a difference for themselves from commercial applications of stakeholder theory.

The NESB Model establishes a proactive approach of public bodies, such as local governments, to reach out to all concerned categories of stakeholders, starting with the primary stakeholders—citizens (or, in this context, the NESB community). This process allows a moving away from a rigid, bureaucratic oriented process to a more user-centric process of social inclusion. Based on the characteristics of various segments of stakeholders, local governments can devise comprehensive e-government strategy as well as encouraging the stakeholders to network with each other in order to leverage their active participation in e-government.

The argument advanced for the NESB Model is for information systems analysts and developers to act within a social relativistic paradigm, recognising plural, socially constructed realities incorporated into human factors (perception, intent, behaviour, action, other people's beliefs, etc.). By so doing, the NESB communities can be taken into consideration. In advancing this model, the developers (professional practitioner) would act as facilitators, enabling reflection, co-operation and experiential learning for all those involved with the system. Systems development would thus proceed from within based on the understanding and rationality of the members of the NESB community.

A more integrated effort that stems from a common intellectual framework and a shared understanding of how to mitigate inequality and build capacity would be a prerequisite for a more systematic assault on the digital divide. That is considered the main advantage of the proposed NESB Model. Innovation through the NESB Model in the future will depend upon the ability to integrate, co-ordinate and develop a client focus rather than an organisational one.

The proposed NESB Model of collaboration is the necessary corrective to the current market-exclusive framework of access to government online services. This framework presumes that it will require more than markets for the vast NESB community to achieve the threshold level of capacity to participate in an information society. An advantage of the NESB Model approach – assuming groups circulate and share resources, communicate outside of silos, and plug into co-ordinated, integrated strategies – is that it is based on the

World Academy of Science, Engineering and Technology
International Journal of Economics and Management Engineering
Vol:6, No:12, 2012

unique and diverse experiences of organisations that take as their motivation local needs, talents, contexts and participation.

The NESB Model requires knowledge-sharing and awareness-raising through consultative and educational activities involving NESB migrants, co-ordinators (government agents), IT experts, research centres, and the entire NESB community through improved IS technology and instructions. The NESB Model ensures that all the communications taking place (or that needs to take place) between and among stakeholders are mutual, productive, and result in assessment of what is working, what needs adjustment, and what remains to be done to improve e-government services. Most importantly, the information provided by the NESB Model must be based on the specific needs of NESB migrant communities that can be conveyed through the use of ICTs, such as the Internet-based discussions, forums, and consultations. It is therefore critical that even residents of NESB communities who are unskilled in Internet or computer usage are still able to benefit from the NESB Model. In fact, lack of skill and knowledge in information technology is one of the main barriers that prevents residents of NESB communities from using IS provided by the government that could otherwise benefit them.

The main objective of the NESB Model is to develop a software platform that will be capable of providing support for NESB citizens and businesses in their every-day life and business episodes related to various governmental services. The solution combines an effective user-centric paradigm (based on the needs of NESB communities) with an efficient semantically inter-operable service-oriented architecture (on the side of the government offices and service providers). The NESB Model values semantics, which grants the ability to represent knowledge within a domain (such as an e-government website or portal) by means of clear formalisation of key domain concepts, their attributes and relations, as well as workflow sequences and structures (This concept has been successfully utilised by others [26-29]).

The NESB users should be directly involved, both in the development project and in related activities, such as organisational development and designing new practices for the e-government services website. Significantly, the users included in the design process must be representative of the entire intended user groups. Plans for involving NESB users should be specified from the very start of the project, in as much detail as possible. Another key element in the process is to properly identify the appropriate phases for user participation, in addition to specifying where, when and how NESB users should participate.

V. CONCLUSION

In order for the NESB Model to accomplish the most good, and to develop a strategy that allows inter-connectivity between IT systems with different functions (or possibly supplied by multiple software vendors) it is necessary to ensure that all IT systems used to provide services for NESB users are based on the same open standards. In addition, there is a need for smoothing the progress of the system's development by establishing supporting services and making

sure the development is moving in a chosen direction by setting goals and making recommendations.

The future goal of the NESB Model is easy management of information and easy accessibility of governmental information for the NESB population, for NESB business owners, etc. Another critical goal is also inter-operability of information—locally and nationally. This requires that the NESB metadata be compatible with metadata which are in use by other governmental and local government agencies—or, at the very minimum, be using the same metadata standards. In principle, the NESB Model calls for a project consisting of two central parts: 1) developing a metadata standard which is compatible with other governmental metadata standards; and 2) developing applications based on the metadata. Standardisation initiatives directed in line with the NESB Model are expected to have a positive impact on the NESB user community.

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