Abstract

Before e-Technology's effects on users can be accurately measured, those users must be fully engaged with the relevant systems and services. That is they must be able to function as part of the digital economy. The paper refers to this 'user functionality' as t-Engagement. Not all users are t-Engaged and in many instances achieving t-Engagement will require assistance from external sources. This paper identifies the current state of Australia’s regional digital economy readiness and highlights the role of Local Government Authorities ('LGAs') in enabling t-Engagement.

The paper analyses responses to the 2012 BTA, NBN and Digital Economy Survey by LGA and other regional organizations within Australia. The paper's particular focus is on the level of use by Local Government Authorities of federal, state and other programs designed to enable t-Engagement. The analysis confirms the role of LGAs in enabling t-Engagement and in promoting Australia's digital economy. The paper concludes by reinforcing the need to ensure ongoing meaningful federal and State support of regional initiatives, as well as identifying issues requiring specific attention.

Keywords

t-Engagement, e-Technology, NBN, digital economy, Broadband Today Alliance

1. Introduction

The purpose of the paper is to identify the current state of Australia’s regional digital economy readiness and highlight areas were further, commonly financial, assistance is required in order to enable maximum t-Engagement. To do this the paper presents findings from the 2012 BTA, NBN and Digital Economy Survey ("Survey"). The analysis of results, as well as an examination of relevant literature, only serves to reinforce the importance of Local Government Authorities ("LGAs") in the future of Australia's digital economy.

As more services are being made available online, and as consumers are being encouraged to access those services, ensuring maximum t-Engagement becomes essential (Newman, Biedrzycki & Baum, 2012). The paper seeks to identify what LGAs understand, what options they have, and what assistance they may require as they work to support and enable their regional digital economies and by extension the greater Australian digital economy.
2. Background

In Australia responsibility for telecommunications regulation, and by extension the internet, broadband and the digital economy, is vested in the Federal government by Section 51(v) of the Commonwealth Constitution. The responsible Minister is currently Senator Stephen Conroy, the Minister for Broadband, Communications and the Digital Economy. Regulatory oversight is divided between the Australian Communications and Media Authority; Australian Competition and Consumer Commission and the Telecommunications Industry Ombudsman. The result is an array of federal legislation that address matters such as access to infrastructure; competition issues; and classification of, and rules for broadcasting, content. Additionally, there is a variety of industry codes, standards and rules enforced on a self-regulatory basis.

Prior to federation telephony services were provided by each colony. All such services were transferred to the new commonwealth on its establishment (Section 69, Commonwealth Constitution). A consequence was the establishment of a monopoly provider that continued to operate throughout Australia, in one form or another, until February 1997 when Australia became a signatory to the World Trade Organisation's Agreement on Basic Telecommunications Services. At that time the Australian telecommunications market was opened to competition and then, eventually, deregulated. Telstra Corporation Limited, as the current successor to the original monopoly, while without monopoly position or power itself, still retains a primary position within the market (Ashkanasy, 2007). The impact of such a lengthy monopoly is seen in the current mix of infrastructure and disparate power between market participants.

Australia's current telecommunications market includes a variety of infrastructure, services and service providers ranging from 'old' technology and services (i.e. copper cables and land telephone lines) provided at little or no up-front cost to consumers, to the 'new' (i.e. mobile and satellite technology and services) provided at greater cost. The launch of the National Broadband Network ('NBN') in 2009 is the most significant change to the market since deregulation, however, it will be many years before full roll-out, and take-up by users, is complete (Cradduck, 2011). Even then, judging by international experience, full participation in the Australian digital economy is likely to take many years post-rollout to achieve (Dini, Milne & Milne, 2012).

Just over half of the Australian population has internet access either at home or work but many still rely on dial-up (473,000) or slow-speed broadband services (Australian Bureau of Statistics, 2011). These services are no longer suitable methods of access in the digital economy (Cradduck, 2011) and government programs are geared toward enabling the adoption of high-speed broadband. Yet governments can do more to enable businesses and consumers and LGAs, with their closer connections to the regions and citizens, are uniquely positioned to assist in enabling t-Engagement. However, while there may be State legislation and local frameworks that support the rollout of broadband, there is no formal role for either State/Territory or LGAs in regulating the telecommunications industry.

Separate from issues specific to enabling t-Engagement, transitioning from existing infrastructure and systems will require both time and money. This needs to be taken into account in any rollout plan (Cradduck, 2011). Addressing issues for regional Australia is particularly important. Following on from the South East Queensland Broadband and Digital Economy Working Group the Broadband Today Alliance ('BTA') was established to create "a collaborative apolitical information sharing officer level organisation to assist regions and councils adapt and facilitate the transition to a digital economy based on NBN and non NBN digital infrastructure." (Broadband Today Alliance, 2012b)

Today the BTA is a collaboration of LGAs and like-minded organisations and individuals focused on developing the digital economy throughout Australia. It has 120 financial members, representing mainly Australian LGAs. It also has over 50 affiliate members, including universities, academics, telecommunications organisations, property developers and individuals. The BTA also is international in its outlook as its members include Priority One (NZ) and Te Whare Wananga o Awanuiarangi.

In combination, the BTA represents over six million people. It regularly engages with its
members and facilitates various forums and engagement with service providers, BTA members and members of the community. It has both open and members-only web sites through which program information; government initiatives; policy developments; and news items are disseminated. The common goal for all involved is enabling broadband engagement today not sitting back and waiting for rollout of the NBN.

3. Research Context

In order for individuals to be able to engage in the digital economy, they require certainty and ease of access to appropriate infrastructure and to internet content and services (Cradduck, 2011). They also must know what they are doing. Access can have a variety of meanings depending on the author and their field of endeavour (Peña-López, 2009). For the purpose of ensuring t-Engagement, 'access' means access to appropriate infrastructure (including hardware, software and services) and access to the means necessary to acquire the skills required to operate in the digital economy.

Businesses' ability to engage in any economic activity is dependent upon appropriately skilled employees. In the digital economy this will require employees with capacity to engage with consumers and other businesses via the WWW and internet. The more employees are engaged in the digital economy, the better businesses' engagement will be. The fewer employees who are engaged in the digital economy the less likely a business is to engage. This means, for the digital economy to function at its fullest potential, it is essential to ensure maximum t-Engagement. To do this requires ensuring that individuals have both appropriate skills and financial capacity (Cradduck, 2011).

Although many digital economic activities will have a clear real-world connection and/or delivery point, arriving at that point takes place in a manner that is unlike previous methods of economic activity (Sadeh et al, 2001). A fundamental difference between real-world economic activity and digital economic activity lies in the increased ability of the internet to enable the leveraging of knowledge; collaboration between partners; and businesses' understanding of their customers' and consumers' demands and requirements (Mandorf, 2008). Digital economic activity has an appreciable impact on the physical economy (Barua, Pinnell, Shutter, & Whinston, 1999). However, unlike a physical economy that is driven by specialised industries and does not require an individual to understand how those industries operate (Burcham, 2008); the digital economy is dependent on the engagement and understanding of the individual end user (Kellerman, 2004). this means governments at all levels must work to ensure maximum t-Engagement.

Access can be influenced by a variety of criteria ranging from "physical access to technology ... [to] ... political will and public support" (Peña-López, 2009, 69). Irrespective of which level of government has regulatory oversight, all levels of government need to be focused on citizen needs and ensuring better service delivery (Strieb & Navarro, 2008). As Purser (2012) observes, LGAs are slowly beginning to realize the benefit of using social media in communicating with residents and in promoting events in their region. In order to use social media, however, the residents are required to be engaged. It cannot be presumed that such of a level of engagement exists (Cradduck, 2012). Further, where an individual does have the skills capacity to be t-Engaged financial constraints can limit, or prevent, that individual from having internet access at home (Newman et al., 2012), consequently there will be limited, if any, t-Engagement.

Achieving maximum t-Engagement therefore will require governments to encourage internet use by citizens (Plumb & Zamfir, 2009) and, where necessary, provide financial support to enable ongoing use (Cradduck, 2011). It is in this context that LGAs must act to enable both businesses and individuals. As evidenced by international examples (Salkin, 2010; Dini et al., 2012), Australian LGAS have a significant role in enabling t-Engagement and the digital economy.

4. Research Method

The BTA executive administered the Survey during March-April 2012. The purpose of the Survey was to "capture and gauge the extent of NBN and Digital Economy readiness in local government and regional areas of Australia." (Broadband Today Alliance, 2012a) It was undertaken electronically using Survey Monkey. Some questions merely required
a selection between pre-determined answers with others also enabling the provision of a more detailed response. All LGAs, Regional Development Authorities (‘RDAs’) and other regional organisations were invited to participate.

The Survey was launched on 29 March 2012 at the *NBN Local Government Summit - Darling Harbour* and closed on 27 April 2012. Responses were received from 114 organisations. These organisations are referred to as ‘responders’. By analysing responses to the Survey this paper aims to identify LGAs’ current readiness for their role as enablers of the digital economy and to clarify areas where further assistance and/or work is required. The analysis focuses on responses to questions designed to establish what level of awareness LGAs have of relevant issues; what internal and/or programs LGAs currently have in place, or are accessing, or are proposing to implement or access; and what other actions they are taking in order to facilitate end user access and engagement. Responses to preliminary and associated questions also are examined in order to provide context for the discussion of the specific questions.

### 4.1 Limitations

Due to size constraints, the paper can only present an analysis of select data from the Study. While the response rate to the Survey was acceptable, the survey was designed for completion by all LGAs, RDAs and other regional organisations throughout Australia. This did not occur and of those that did respond, not all provided an answer to each question. The low number of detailed responses clearly affects the validity of the available data as a method for determining true LGA engagement and support for the digital economy. However, the available results can provide guidance as to future potential initiatives for BTA consideration as well as providing an insight into LGA engagement with the digital economy and the important place they have within it.

Confidentiality issues prevent a full discussion of detailed responses or reference to identifying information. For the purpose of enabling analysis of the data, the specific results were shared with the author on the understanding any information from which an individual responder could be identified would not be reported. This impacts upon the author’s ability to refer to detailed responses but does not detract from the need for this discussion. A copy of the Survey results, however, cannot be attached and related questions are extracted below. Finally, while a variety of Federal and State government programs can be accessed to assist with service provision and individual and business engagement, currently there is not one program that is used by the majority of LGAs or other regional organizations.

### 5. Results and Discussion

In order to fulfill its aim, the paper considers responses to 15 of the 58 Survey questions. These, and the number of responses received, are detailed in Table 1.

**Table 1. BTA, NBN and Digital Economy Survey Questions**
Most responders were Queensland based [39]. The next highest representation was from Western Australia [22], then Victoria [19], New South Wales [19] and South Australia [14]. Tasmania, Northern Territory and the Australian Capital each had only one responder [Question 3]. Most Queensland responders were LGAs [44], with the balance being RDAs [9] and regional groups [4] [Question 5]. Non-Queensland responders were from regional areas [27], regional cities [18], rural [16], capital cities [12], urban cities [8] and remote [6] [Question 4]. There appears to be some responder confusion between Questions 4 and 5, with some responders mistakenly answering both. Question 4 was to be answered by those outside Queensland and Question 5 by those within Queensland. The combined response to both questions, however, was greater than the total number of responders. While not impacting upon the results, this indicates a need to review future survey questions to ensure no misunderstandings.

Some responders identified as having either a dedicated officer [11] or working group [28] managing their organisation's relationship with NBN Co. The majority, however, include this function with other duties [Question 7]. Encouragingly, 51 responders have a dedicated point of contact for engagement with the NBN Co. Of concern, however, was that ten responders identified as lacking appropriate resources [Question 9]. More worrying perhaps is that 53 do not know who their relevant NBN Co manager is, with
four clicking the option - *No need as we don’t have any development that meet the criteria* [Question 25]. In view of the need for high-speed broadband, a lack of knowledge of relevant contacts is perhaps short sighted. It is however indicative of the fact that more than half the respondents do not have complementary provisions in their planning frameworks to support the NBN’s rollout generally [54] [Question 13]; or specifically as regards new developments by means of the mandatory installation of telecommunications pit and pipe, with 30 stating they are specifically relying on State and Commonwealth legislation to address these issues [Question 22].

It will be important to ensure citizens have the capacity to access services as well as the physical access (Cradduck, 2011). Part of ensuring adequate physical access is to identify problem areas for delivery and then working to overcome those problems. The issue of ‘blackspots’ is a key problem and yet, despite federal government initiatives targeted to addressing areas without adequate service (Auditor General, 2012), the issue remains a problem. Questions 17, 32 and 33 were targeted to identifying the status quo of ‘blackspots’ in the regions. A limited number of respondents were aware of fixed broadband service ‘blackspots’ [38]. 23 were not aware and 35 identified that they would need advice as to how to identify these areas [Question 17].

Topography or distance from exchanges were given as reasons for ‘blackspots’ but only a few respondents had, or were, making their own inquiries in order to identify these areas. Most were aware of mobile ‘blackspots’ [52] but many only relied on anecdotal evidence, or information provided by State government or other information sources for their answer [Question 32]. The majority of respondents indicated they also require assistance to complete the assessment for mobile services [29 ‘yes’ and 21 ‘maybe’ respondents to Question 33]. With an increased number of both Australians and international tourists travelling to/through the Outback it is essential that governments work to address the issue of mobile blackspots (Gregory, 2012).

A variety of federal and state/territory programs currently can be accessed by LGAs in order to facilitate service provision and individual t-Engagement. Other programs provide funding for LGAs to develop and implement their own program. Questions 39 and 40 seek to establish if LGAs are using any existing programs to promote the digital economy in their region; what external programs are being used; and/or if they are implementing their own specifically designed programs. These questions also seek to determine what programs LGAs are considering developing and/or implementing in the near future. Only 24 respondents identified as currently accessing either a Federal or a State program [Question 39] while 33 identified as either being in the process of implementing or planning to implement a program [Question 40].

None of the programs being used by respondents stood out. Three respondents used one program; one was used by two, with other identified programs only being used by individual responders. These numbers are too small to be representative of overall use or warrant analysis here of the programs identified. Several respondents indicated that they were in the process of applying for federal funding without identifying the program. For the future it would be useful to seek feedback from those who responded ‘no’ as to why they were not accessing or planning to access or implement such programs.

Anecdotal comment contained in the more detailed responses seems to indicate that funding may be an issue. Additionally, there appears to be a perception that such programs will be delivered by, or are best left to, commercial entities.

Question 41 required respondents to identify the services provided by LGAs, through libraries or otherwise, that would encourage household online take up. Of the 72 responders, most indicated that their local libraries offered free WiFi [45] or would soon do so [5]. Some indicated there was no funding to do so [3]; or the library was too small [3]; or it was too complicated [1]. Several do not provide free WiFi [18]. Free WiFi is provided by some in council buildings/outdoor areas [31 currently and three soon] with most not providing this service [34] or indicating lack of funding [4], or size [2] as reasons why it is not provided. Similarly most do not have commercial grade council sponsored or facilitated WiFi [51], and do not provide paid digital awareness and skillling programs [49]. Some, however, provide [32] or will soon provide [6] free programs. A small number provided detail of the services provided by others [4] and one RDA stated it was unable to provide an answer due to the number of LGAs it represented.
Current facilitation of on-line uptake by businesses also is limited [Question 42]. Only 27 responders provide free digital awareness and skilling programs, with six answering that this service would soon be provided. Similarly to responses to Question 41, several responders indicated there was no funding for such program provision [5], or the library was too small [1], or it was too complicated [1]. A small number provide paid programs [11 currently and three soon] with most not providing any paid programs [47]. Issues of funding [6], size [2] and complication [1] also arose, and again some identified that others provided these services [5]. For the future, it would be useful to seek to clarify why those who do not provide services, paid or otherwise and whether to individuals and/or businesses, do not do so.

6. Conclusion

Australia's future is inextricably linked with that of its digital economy, which in turn is linked to the use of e-Technology by individual users and businesses. LGAs are aware of the need to promote their regional digital economies and, within their capacity, are actively working to do so, including working to enable maximum t-Engagement. This is occurring on a proactive basis individually and through associations such as the BTA and other regional and government initiatives. The provision of free WiFi through local libraries and other buildings and areas was notable. Enabling t-Engagement, however, requires more than just providing free WiFi. Unfortunately, some LGAs appear to consider that the role of enabling access, awareness raising and up-skilling program provision, only belongs to commercial enterprises. It is not enough for LGAs to wait for someone else to take the lead. To ensure the future of their regions requires LGAs to act now to facilitate t-Engagement.

Wanting to act however is not the same as having capacity to do so. Even with the support and collaboration enabled by groups such as the BTA, and appropriate acknowledgement within the governing body, capacity within some LGAs appears constrained. Similarly to the findings of Purser (2012) the results of the Survey indicate that lack of funding is a barrier to the adoption, use or promotion of programs designed to facilitate t-Engagement. This includes both lack of financial capacity to develop and provide programs, and lack of financial capacity to appoint dedicated digital economy personnel. A concern for the future is that with increasing budgetary concerns internal LGA funding may be diverted to other activities. Ensuring appropriate funding for staff and program participation needs to be made a priority. This is particularly so in Queensland, where a number of LGAs are facing the possibility of de-amalgamation with the associated costs to be paid by the 'new' LGA.

For the immediate future, the BTA clearly can provide assistance to LGAs in a number of areas. In particular, this includes assistance with blackspot assessments and working to overcome this issue. Future areas of research will include seeking to determine why particular programs are used by LGAs; why there is not consistency of use; and what can be done to facilitate program staging. Ensuring cost savings by making certain there is not a duplication of effort will be an important aspect of future LGA and BTA activities. For the Federal and State/Territory governments ensuring ongoing capacity of LGAs to support t-Engagement and develop their regional digital economies is vital.

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References


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Legislation

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