A Digital Systems Approach Across eGovernment Services: The Australian Taxation Office and The Health Environment

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Abstract— The public sectors shift to digital first service provision has had a considerable impact on how individuals interact with public sector entities. This research highlights the similar assistance requirements and concerns with different public sector digital services. Evidence for this research is presented through a case study on the Australian Taxation Office and two digital health platforms, MyAgedCare and My Health Record. By understanding the different issues and assistance seeking requirements across the public sector digital services, digital service designers and policy makers can better create services that meet the needs and expectations of users. A primary finding of this research highlights the expectations of users that human interfaces for assistance-seeking are maintained, in order to maximise an individual’s capacity to interact with the system successfully.

Keywords- Digital Health; Assistance Seeking; Digital Inclusiveness; Digital Ecosystem; Public Sector.

I. INTRODUCTION

As public sector services adopt new technologies and start to identify the considerable benefits associated with utilising digital services, the availability and use of legacy systems will decrease [1]. Public sector services are fundamental in a modern society and service availability is crucial. However, with the use of digital services in lieu of legacy systems, especially in the mandatory service space, users are becoming more and more limited in their choices [1]. Therefore, this paper argues that for governments to be truly inclusive, legacy systems must remain in place, to enable and provide access to all who require them.

This paper explores the application of findings from an Australian Taxation Office (ATO) case study, used to understand the barriers and opportunities affecting digital service provision in the public sector. The findings are used to start the discussion on the digital health environment, including the most common Australian digital health platforms known as My Health Record and MyAgedCare [2], both services which are displayed with similar digital formats. This paper does not argue against the use of digital approaches for service provision, however it questions the inclusiveness of providing digital first services in mandatory service space (e.g., tax lodgement or aged care referrals).

The purpose of transitioning public sector services to digital platforms is clear, to provide easy access to government services, and to promote the transformation and delivery of modern and future proof digital services to those who need them [1] [3]. There are millions of Australians who utilise online government services through the central platform “myGov”, as well as numerous state government online services [1]. The large numbers utilising the services demonstrate how Australian public sector digital services are well adopted within the community. However, there are still pockets of the community who are struggling to access necessary services [1].

All Australian Public Sector Organisations were impacted by the introduction of the Australian Digital Continuity Policy 2020, mandating the use of digital first channels for every public sector service provided [4]. This policy put considerable pressure on both public sector organisations and service users. Through exploration of previous literature, a considerable gap was identified between what is known about digital service users and non-users, and those individuals who are required to use them. Therefore, the impact of shifting mandatory public sector services to a digital first platform is still largely unknown. As digital first service provision is the way forward for all public sector organisations (especially in Australia), a holistic view of users is needed. Research needs to support and assist users, improve services and inform policy to increase long-term voluntary compliance obligations in a mandatory service space. To support this view, this research is exploring the relevance of previous research based on a case study on the ATO, and comparing them to different services provided by the Australian Department of Health.

This paper will explore the barriers to digital adoption in the public sector space, specifically comparing mandatory and voluntary spaces. These comparisons will be based on understanding that ATO and MyAgedCare services are mandatory and My Health Record being voluntary. This research explores the common reported themes among digital barriers and proposes additional research to be undertaken to address the gaps. The themes will be derived from an ATO case study (conducted previously) and comparing to a pilot study undertaken on MyAgedCare. Additional research has explored the identified barriers to the use of My Health Record (a voluntary service), to understand the similarities across digital health and digital taxation, as well as mandatory and voluntary. Through the
use of thematic analysis outlining the barriers to digital adoption, links between the ATO case study and the digital health platforms are introduced to demonstrate the similar issues across the different eGovernment services. By exploring the various barriers and their links to the User Centred Model (Figure 1) the analysis provides lessons learned applicable to both policy makers and digital services designers.

The structure of this paper is divided into six sections. Section one contains the introduction, section two outlines the literature reviewed, section three discusses the ATO, My Health Record and MyAgedCare, the fourth section outlines the methods, the fifth section highlights the results of the study and the final section is the conclusion.

II. LITERATURE REVIEW

A. Digital inclusion

Inclusion is complex as it incorporates numerous concepts including; awareness, acceptance, respect and understanding, to provide equal participation opportunities [5][6]. An inclusive environment encourages people with different characteristics, backgrounds and ways of thinking, to work together to fulfill their potentials [5][6]. These environments require considering both internal and external stakeholder perspectives, and placing equal value on all perspectives regardless of where they originated [7]. Digital inclusiveness is also increasingly complex, as it involves multiple components within the specific digital ecosystem of an individual. Therefore, digital inclusion identifies the importance of access to information and communications technology and the resulting social and economic benefits for users [8]. An individual’s level of digital inclusion is impacted by digital skills, connectivity and accessibility. Digital skills include the capacity to use technology to connect with the services (internet and computer), connectivity involves having internet access (the infrastructure) and accessibility is the user friendly digital services that assist in accessing the service [9]. Thus raising the question, does digital health have potential negative implications on levels of digital inclusiveness?

B. Digital divide

One of the most significant issues towards the use of digital public sector services is the digital divide, whereby in Australia more than 2.5 million individuals are still not online [9] and the digital divide is largest in those older than 65 [9]. The digital divide is defined as the gap between individuals or groups with limited access to digital information and services, compared to those who have effective access [9]. With the shift of government services to online delivery methods, there is considerable potential for older Australian’s to be disadvantaged from the greater use of emergent and dominant communication technologies [13], as digital services tend to leave older Australian’s out [10]. An aging population is vulnerable and in some cases reluctant to use digital technology, raising concerns about ability to use technology, scams, privacy, self-diagnosis resulting from misunderstanding of information and the desire for face-to-face explanations [11]. Thus raising the question, how do digital health platforms affect service use?

The digital divide is an issue that effects lower income earners, individuals with poor access to the internet and/or those individuals who lack the skills to use technology, making it harder to access. Furthermore, lower levels of digital inclusion are associated with individuals who only access internet through mobile devices. Digital exclusion often exacerbates other forms of social exclusion; this includes unemployment, low education and poverty [12]. Therefore, the importance of digital inclusion is undeniable; all Australians require access to both technology and skills to ensure they can take part in every aspect of social and economic life. There are practical concerns for achieving equitable levels of access between different social groups and public services, as society is not homogenous, providing basic accesses to the community is not sufficient. Services provided to citizens by government need to align their design and application to the needs of the community, to encourage digital inclusiveness and begin to breakdown the digital divide.

C. Barriers to eGovernment

Previous research has explored the specific barriers to digital adoption within the eGovernment space. The European Commission, defines a barrier to eGovernment as the, characteristics within the contexts of legal, social, technological, or institutional which negatively impact the development of eGovernment [11, P.3]. This can be caused by users’ lack of demand and the obstacles preventing engagement with services, or disincentives for the government to supply the eGovernment services or prevalence of obstacles preventing its supply [12]. This research identified barriers and compiled them into seven key categories; leadership failures, financial inhibitors, digital divide and choice, poor coordination, workplace and organisational inflexibility, lack of trust and poor technical design [12]. However, research suggests that regardless of the platform, the impact of stakeholders (internal and external) can negatively influence its use [13]. Therefore, successful eGovernment platforms depend on understanding the environments in which they operate [14]. These elements including stakeholder inclusiveness should be considered more in-depth, with their relationship to the multiple barriers preventing eGovernment/digital service adoption and their applicability across disciplines.

III. eGOVERNMENT SERVICES: ATO AND HEALTH

For this research, mandatory environments are classified as “Public Sector Organisations who must by legislation provide Digital Platforms for their services” [15][16]. Whereas mandatory interactions are defined as “Users who meet certain characteristics and must by legislation interact
with the public sector service provider to meet these obligations” [15] [16]. Therefore, users must engage with providers, but under the digital first mandate expectations around how they do so has changed. In contrast voluntary public sector services are similar to those provided by the private sector, in that an individual can decide whether they want to utilise the service or not.

A. ATO

The ATO was the first service provider to adopt digital first service provision, with the introduction of myTax for individuals, business portals, and tax agent portals. The ATO requires all individuals to interact annually with them to submit their tax return, all individuals who derive income within Australia. Since the digital first transition, the majority of services are digital and require an understanding of both taxation and computer systems. Taxpaying population is in Australia is over 16 million; of these 84% are individuals [16]. The ATO has high digital adoption rates of the MyTax platform, with 95% of individuals eligible to utilise the service [16], however there are still gaps within the population that need to be explored and understood.

Progressively the myTax platform became more inclusive, through annual and ongoing adoptions, and the progressive changes in the manner in which digital adoption and service provision has occurred [17] [18]. Each iteration incorporates the feedback from users to ensure ongoing viability of the platform, while also ensuring ongoing success [24]. The iterative approach of ongoing improvements has been a key component outlining the success of the myTax platform, which makes the platform a good case study on the creation of inclusive government services. This is not to say that the platform is 100% inclusive, there are still issues with accessibility, understanding and willingness to change that impact its use [19].

B. Digital Health

Healthcare systems are becoming significantly more complex, with more professionals becoming involved in each individual patient’s care, and ever-changing healthcare needs of the population [20]. Healthcare is the product of a complex adaptive system, comprised of people, equipment, processes and institutions which all work together [21]. Healthcare systems operate at their best, by undertaking ongoing improvements. However, when the system fails to improve it negatively impacts the system [22]. Therefore, the research argues that through the application of a systems thinking lens, the complexity of the different interacting internal and external environments within organisations, health systems and society for example, can be better identified and understood. The systems complexity highlights both problems and opportunities and requires responsive organisations and systems capable of adjusting to changes. The ability of the system or components of the system to respond to changes, all depends on one’s ability to understand influences [23]. Systems thinking can provide a holistic view and assist in identifying areas requiring revisiting [24].

C. My Health Record

My Health Record is an online platform containing a summary of an individual key medical and health information (including histories). The site provides information for individuals and health practitioners who opted into the service to view medical histories, previous tests, medication (history and current) and diagnosis. The My Health Record platform was piloted in 2016 [25]. The aim of the platform was to provide a single location for all medical details of a patient that is readily available for health practitioners and users. The service is voluntary, there was an opt-out process between 2018 and 2019, where eligible Australians indicated whether or not they wanted the service [25]. To be eligible an individual must be registered with Medicare. Although there are a number of benefits from the provision of the online health record, more than 2.5 million Australians opted out of the platform [26]. The primary reason was privacy concerns, specifically because not only doctors can view the records (any registered health provider can); data can be used for research; once created the record cannot be deleted and there is fear of hacking data [27].

D. My AgedCare

MyAgedCare is an online platform for individuals aged 65 or older which is the starting point on an individual’s aged care journey [28]. The site provides information for government-funded services available at home to enable individuals to continue living independently. The MyAgedCare platform has undergone numerous changes since its launch in 2013, aiming to provide a consistent, streamlined and holistic assessment of clients. However a study published in 2018 demonstrates service demand significantly outweighs supply. With 127,748 on waitlists or not receiving adequate levels of assistance based on their needs [29], and the waitlist growing by 20,000 every six months [30]. Furthermore, 96,000 people waiting since 2013 have found nursing home placements faster than their preferred option of home care, and more than 16,000 people died waiting for services [30]. Numbers are impacted by geographical location, types of services, financial outlay and availability of qualified staff. Although this backlog in services is important to note, it is not the key issue raised in this paper, this study focuses on the implications of MyAgedCare as a digital platform and how this, in turn, affects patient centred care.

Both digital health eGovernment platforms under analysis are relatively new, having not undergone as many iterations as the ATO myTax platform. However, these platforms have a considerable impact on end users and the Australian population, as they are both critical for providing
information and links to information that outline individuals health profiles, where and how to access services and has the capacity to act as a facilitator of medical services in Australia. This research intends to highlight the key lessons learned from the ATO digital experience, to help inform digital health service designers, to provide avenues for designers and policy makers to obtain guidance on how to develop more inclusive digital services in this space. Simultaneously, other eGovernment platforms can take advantage of the key learnings from the ATO digital experience, as this is transferable to eGovernment.

IV. METHODS

A qualitative approach was applied to this research. An integration of both interpretative and exploratory approach to obtain an in-depth understanding of the key barriers to digital adoption and how they were overcome was considered appropriate to the ATO, MyAgedCare and My Health Record cases. This approach provides evidence to describe the eGovernment environment and provide insights to promote ongoing service adoption.

This research has two components, the first component was the analysis of the ATO digital experience. The ATO study component for this research used primary data collected during a 4-week period over July 2018. A survey form was provided to 11 call centre operatives who populated numerous fields outlining reasons for call and demographics of callers; to understand why people were seeking assistance. Once collected the data (N = 3,990) was anonymised through aggregation techniques to group like individuals into similar groups to understand the population. As this research was designed to be exploratory in nature, the focus was to understand the different issues facing users, a thematic analysis was completed on the qualitative data obtained.

The second component incorporates the Digital Health sector platforms, My Health Record and MyAgedCare. For the MyAgedCare component of this research, data has been collected from concerns, interpretations and perceptions of various stakeholders engaged with the MyAgedCare platform. Data analysed underpinned the actor’s perception on “What do they think of the MyAgedCare platform?”. The same method was utilised to explore the My Health Record platform which works on similar digital integration system approach. The main focus of the discussions was to understand what different actor’s perceptions are on “What do they think of the My Health Record Platform?”. The data was consolidated and anonymised when analysed to identify common themes and trends within the responses. The data collected for this component has been treated as a pilot and comparative form to the ATO digital environment and therefore was only based on answering a singular question. The additional analysis conducted was on existing data provided outlining environmental components.

V. UNDERPINNING FINDINGS: USER CENTRED MODEL

The research adopted an interpretive lens to guide analysis with a systems view. Through the analysis of the 11 call centre operatives’ surveys, a conceptual model is proposed for the complete integration of key stakeholders influencing end user digital adoption: User Centred Model (see Figure 1). The key factors and element of this model emerged by observation and interpretation of all the stakeholders and interactive elements within the system and all the parts of the broader environment. The purpose of adopting a systems lens to build this model was to provide a user-centred research approach which can guide policy making as well as provide better support and understanding of the various needs of the different users. This conceptual model contributes to knowledge by initially identifying a number of factors within a user’s environment and their degree of impact on willingness or capacity to adopt mandatory digital services.

![User Centred Model](image)

Figure 1. User Centred Model

<table>
<thead>
<tr>
<th>Theme</th>
<th>Users comments</th>
</tr>
</thead>
</table>
| Platform support and technical support | - Do not know how to access the page  
- What are the security measures in place?  
- How do I link between the MyGov and MyTax platforms?  
- I have not used this before  
- Where is my prefilled data?  
- How do I change my details/or name?  
- The identification questions were incorrect  
- I am having technical difficulties |
| Lacks computer skills, preference to use non digital | - I want to use MyTax by I don’t know how to use a computer  
- I have no email address or digital presence  
- Do not own a computer  
- How do I do this digitally?  
- I always do my taxes this way  
- Language barriers prevents the use of digital  
- Only completes old non digitalised forms |
| Requires education in the system, platform awareness | - How do I lodge?  
- Why do I need to?  
- How does tax work?  
- Why do I have to pay money?  
- How does income work?  
- Where do I put information on the form?  
- What are tax offsets?  
- How long does this take?  
- What is a deduction? |
Table 1 outlines the thematic analysis conducted within the ATO, this table demonstrates the different barriers individuals face when interacting with the myTax platform and creates a basis for the analysis of the digital health platforms. The thematic analysis demonstrates that individuals seek assistance and advice on both tax technical components and general platform and technical support. Both of these scenarios are relevant for the digital health space, as language used in services and information provided can have a considerable impact on end users.

When comparing the themes outlined within Table 1, all themes influence an individual capability and willingness to utilise digital services. There are links within each section to legislation, mandatory services and the environmental impacts. From this, the research can infer that there is a lack of understanding of mandatory services, specifically what the legislation is requiring the shift to digital. Therefore, to address this, users need to be informed of the changes and the provision of transparent policies are required, these policies need to be easily interpreted by all users. Furthermore, by understanding how different policies interact with the mandatory services users can be more informed as to the security and safety of their data, without this understanding it is unclear how end users will feel confident and comfortable using the services.

When comparing the findings within Table 1 to the preliminary findings within Tables 2-4, lessons can be learned in relation to the potential inclusiveness of digital services, especially when looking beyond mandatory systems and simply exploring the various policies and involvement of stakeholders. For example, in both mandatory and voluntary systems, an important issue for end users is the security concerns related to their private data, how they access the digital services and their level of digital literacy. The users for these services also differ considerably, which demonstrates interesting findings when it comes to across the board generalisability of barriers to digital inclusiveness.

### Table II. Responses To "Why Are You Not Using Digital Services?"

<table>
<thead>
<tr>
<th>Theme</th>
<th>Users comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scams/Fraud/Security</td>
<td>- Fear of scams</td>
</tr>
<tr>
<td></td>
<td>- Not sure which is the real website and which is fraudulent</td>
</tr>
<tr>
<td></td>
<td>- Computer/cyber security concerns</td>
</tr>
<tr>
<td>No computer/Internet access</td>
<td>- Have no experience utilising a computer or accessing the internet</td>
</tr>
<tr>
<td></td>
<td>- Unclear on what a digital health service is</td>
</tr>
<tr>
<td></td>
<td>- Have no access to the internet of computer</td>
</tr>
</tbody>
</table>

The results within Tables 1, 3 and 4, highlight how regardless of platform, the assistance required relates to end-user concerns about terminology, accuracy of information and representation. Furthermore, there is a clear and direct relationship between digital awareness of the operations of online platforms (eGovernment) and the types of questions asked within the digital space (e.g., digital literacy questions, obtaining the correct information).

### Table III. Responses To "What Do You Think of MyAgedCare?"

<table>
<thead>
<tr>
<th>Theme</th>
<th>Users comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonenumber</td>
<td>- Rude staff</td>
</tr>
<tr>
<td></td>
<td>- Staff demanding to speak to client directly despite</td>
</tr>
<tr>
<td></td>
<td>- Acknowledgement of advocate availability</td>
</tr>
<tr>
<td></td>
<td>- Hearing impairment impacting communication</td>
</tr>
<tr>
<td></td>
<td>- Language barriers</td>
</tr>
<tr>
<td>Confusing</td>
<td>- Terminology used by staff</td>
</tr>
<tr>
<td></td>
<td>- Questions deemed by clients as intrusive and unnecessary</td>
</tr>
<tr>
<td></td>
<td>- Inaccurate information provided on website</td>
</tr>
<tr>
<td></td>
<td>- Clients unable to understand the different services and costs involved</td>
</tr>
<tr>
<td></td>
<td>- Written information only with a lack of visual representation</td>
</tr>
<tr>
<td></td>
<td>- Sometimes inaccurate representation of available services</td>
</tr>
<tr>
<td></td>
<td>- Availability of services for under 65 years</td>
</tr>
<tr>
<td>Difficulty accessing</td>
<td>- Vision impairment</td>
</tr>
<tr>
<td></td>
<td>- A lack of comprehension</td>
</tr>
<tr>
<td></td>
<td>- Unreliable or no internet in the home (particularly rural and remote)</td>
</tr>
<tr>
<td></td>
<td>- Mobility impairment - unable to leave home to use public access computer</td>
</tr>
<tr>
<td></td>
<td>- Inability to express urgency</td>
</tr>
</tbody>
</table>

### Table IV. Responses to "What Do You Think Of My Health Record?"

<table>
<thead>
<tr>
<th>Theme</th>
<th>Users comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privacy</td>
<td>- Confidentially and privacy concerns</td>
</tr>
<tr>
<td></td>
<td>- Concerns for the ongoing privacy for their data stored online</td>
</tr>
<tr>
<td></td>
<td>- Unhappy that it cannot be deleted once created</td>
</tr>
<tr>
<td></td>
<td>- Unclear who can access my records and why?</td>
</tr>
<tr>
<td></td>
<td>- Allied health services can access my records</td>
</tr>
<tr>
<td></td>
<td>- What if my medical history is shared an</td>
</tr>
<tr>
<td>Confusing</td>
<td>- Terminology used online</td>
</tr>
<tr>
<td></td>
<td>- Accuracy of information provided on online</td>
</tr>
<tr>
<td></td>
<td>- Not every doctors client and hospital is represented</td>
</tr>
<tr>
<td>Difficulty accessing</td>
<td>- Vision impairment</td>
</tr>
<tr>
<td></td>
<td>- Do not understand how to use the portal</td>
</tr>
<tr>
<td></td>
<td>- Low levels of digital literacy</td>
</tr>
<tr>
<td></td>
<td>- Unreliable or no internet in the home</td>
</tr>
<tr>
<td></td>
<td>- Mobility impairment - unable to leave home to use public access computer</td>
</tr>
</tbody>
</table>

### VI. Conclusion

The preliminary findings from the digital health space in comparison to the ATO case study demonstrates significant similarities between the digital/online platforms and the issues associated with digital awareness, acceptance, assistance seeking, accessibility and support. As demonstrated within the results of the ATO case study, the value of face-to-face or human interaction based assistance is still a necessary component of the success of eGovernment service inclusiveness. Digital health too quickly removed the face-to-face component of assistance in regard to both My Health Record and My Aged care, decreasing the inclusiveness and making it difficult for individuals who preferred face-to-face support. Human interaction support is available in this space, however does not provide the same emotional support often expected within the delicate situations evident in healthcare.

My Health Record and MyAgedCare have a considerable amount to learn from the ATO, who have maintained high adoption and satisfaction ratings within their digital service. Furthermore, through multiple iterations, ongoing improvements were made possible,
while ensuring that different avenues for obtaining support and assistance were available to suit the user’s needs (e.g., in person, over the phone and through intermediaries). What this research has indicated is that the digital health services have moved too quickly in their transition from legacy to digital services. The ATO learned within their transition to digital first services, specifically what legacy systems they could do without and which ones they need to maintain and improve.

REFERENCES


