Information System (IS) Adoption in Small Non-Profits: The Community Legal Centre Sector

By

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Statement of Originality

This work has not previously been submitted for a degree or diploma at any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

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Abstract

The small organisations non-profit sector stands to gain much from using Information Systems (IS), and IS evaluation represents an important field of research through identifying the root causes of IS failure. However there is a gap in research for IS in small non-profit organisations (NPOs). Information systems evaluation in small NPOs is of very high importance, as a failed project can threaten the continuation of the organisation. The Community Legal Centres (CLC) sector in Australia are a type of NPO, composed of small to medium size organisations. A project to implement a Customer Relationship Management system for use within the sector gained the interest of CLCs nationally and this project was the focus of the research presented here.

The primary contribution of the resulting research is in the area of IS implementation in small NPOs, identifying pre-implementation environmental factors which affect the success of IS development, and evaluation. The findings were that individual experiences with technology in different organisations affected engagement, which in turn impacts successful implementation. In addition the findings support previous research which identifies factors creating inter-organisational collaboration among NPOs.

Keywords: Information Systems, Evaluation, Non-profit, TAM, Strategy, Community Legal Centre

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List of Abbreviations

BBS	Bulletin Board System
CLC	Community Legal Centre
CLCNSW	Community Legal Centres New South Wales
CRM	Customer Relationship Management
IS	Information System
IT	Information Technology
NACLC	National Association of Community Legal Centres
NCOSS	NSW Council Of Social Services
NFP	Not-for profit (also NPO)
NPO	Non profit organisation (also NFP)
SME	Small or Medium Enterprises
TAAS	Tenants' Advice and Advocacy Service
TAM	Technology Acceptance Model
TUNSW	Tenants' Union of New South Wales

1. Introduction

Introduction

Information System (IS) evaluation is a very popular and important stream of research, especially due to the contribution it makes towards successful IS implementation. There are multiple models for evaluating IS and different definitions of IS success. Despite growing research interest and theories, in practice there still exist numerous IS failures. An example of a high profile IS failure can be seen in the Queensland state government's new payroll system for *Queensland Health* in 2006 (Glass 2013; Thite and Sandhu 2014). This failure was due to faults found at every stage of the project, ranging from procurement to contracting and project management - the final cost running into billions and years behind schedule. Its failure while not related to adoption, rather a project failure, highlights the costs of IS failure.

Implementing IS can be a risky process due to the possibility of failure. However the benefits of using IT/IS can be significant. Ubiquitous digital devices can offer services to clients both internal and external through networks using IT and increase service availability, while also allowing more efficient use of existing resources for any organisation. Hence this study will be about the small non-profit organisations sector; a sector that can use IS to organise stakeholders to allow better campaigning to achieve goals, better information presentation over the internet, and improve service reach by using automated agents such as chat-bots to solve basic problems, releasing trained workers to handle more complex services.

While high profile failures in large organisations draw significant attention, failures in small organisations do not draw such attention and so remain un-researched (Eshraghi 2015); this is true especially for resource-scarce organisations such as non-profit organisations (NPOs), who can't afford custom IS development and are more likely to adopt badly designed and implemented systems, which are not fit for purpose. This lack of research is highlighted in the literature review section of the thesis where findings of the literature survey are presented. Such IS failures can be critical not only during implementation, but even before they start. Considering that advanced reporting and use of technology is becoming a must for funding proposals, such IS failures can result in small organisations in this case NPOs, failing completely by having scarce resources allocated to a non-recoverable failure.

Size does seem to matter in IS implementation, whether it is resource availability in the form of people or financial viability; i.e. a small NPO might be setup to fail in IS implementation simply

because they are small. In such instances small organisations are justified in being risk averse, thus avoiding relatively complex IS projects, which can prove to be feedback loop leaving organisations 'IT illiterate' where even basic IS operations may not get implemented. In such situations it would seem instinctive to assume that a new information system, custom built at a low cost and lower individual risk, will be met with enthusiasm.

Despite the wide variety of IS/IT available, adoption has not become common especially in smaller organisations. Many organisations which can benefit from IS implementation have not utilised it, by either not exploring their options or by not engaging in the processes involved. In these instances evaluation models looking at post-ante reasoning for success or failure will not be sufficient in identifying this reluctance to event attempt adoption. With most failures being evaluated from the perspective of why intended users do not use them, the evaluation models and success definitions fail to capture prospective users who did not opt for implementation.

Is it possible to evaluate and include IS system failures from pre-implementation stage - i.e. projects that do not even make it past proposal stage? Can post-ante failure models be valid for projects that do not start, as in 'fail to start'? For such models can help identify areas which need not only IS implementation, but also help formulate strategy for improving the overall environment for IT/IS.

Background

Community legal centres (CLCs) in Australia are a special type of NPO providing legal advice to the disadvantaged, often utilising the assistance of legal volunteers and community members. They have been in operation for a considerable period and have assumed a semi-formal structure, despite being volunteer driven (Giddings and Noone 2004). There are over 200 CLCs located in both in rural and urban contexts (National Association of Community Legal Centres 2018).

This research is centred on a CRM development which was undertaken by Community Legal Centres New South Wales (CLCNSW) as part of a wider program to develop IT services for their membership. CLCNSW is the peak body for CLCs in New South Wales (NSW). The main analysis will be carried out on a dataset which was made available to the author by CLCNSW. The data is from a survey carried out by CLCNSW in 2017 (Appendix A). CLCs provide "individual legal advice and assistance as well as law reform, test case litigation, referrals and community legal education activities aimed at addressing systemic problems" (Giddings and Noone 2004, p. 258).

The development of the CRM took place in accordance with recommendations from a report auditing the IT capabilities of CLCs in NSW. The report highlighted a need for an overall improvement in the use of IT in CLC operations. However the projects environment is constrained by multiple complexities, key among these being funding. Funding for CLCs are often limited, even

for the services, let alone additional administrative improvements such as IT/IS development. Placing funding limitations into context, it was reported nationally in 2017, that 109 reporting CLCs were turning away 169,513 people due to lack of resources and capacity (National Association of Community Legal Centres 2017).

Financial constraints are at the forefront of issues this project contends with. In such a situation project failure can be considered fatal. For an organisation to successfully adopt a CRM it needs to have features compatible with the organisation, and for the CRM to be compatible it will be important for target users to be engaged in the functionality identification and design process, i.e. engagement at project inception can affect success. The varied levels of engagement and technological receptivity provide an interesting background to study the interaction of IT/IS and small non-profits.

The collaborative nature of the project adds an extra layer of complexity. However the CLC sector has a long history of collaboration, the most notable of these being the Bulletin Board System (BBS) provided by National Association of Community Legal Centres (NACLC), used by CLCs nationwide. The BBS was in operation for a very lengthy period of time providing email, calendaring, discussion groups, file storage and more for all the services. The idea of a community or network is a strongly present idea among CLCs. Therefore a project seen as being community owned and providing a better cost alternative creates a good environment for collaboration.

Research problem

Background and motivation

In 2016 CLCNSW undertook a state wide audit of member IT capacity. This project identified room for improvement in IT service procurement & provision, customer & stakeholder engagement, communications and networks, hardware, and software. The audit report identified improvements which individual CLCs could undertake, as well as several recommendations for CLCNSW as a state peak body to explore and deliver.

The author is the Strategic Information Technology Officer at one of the member CLCs of CLCNSW, which was identified as being well resourced in IT; this was due to the organisation proactively allocating a position for IT, and the author consistently reviewing and planning strategies for replacing outdated systems and identifying, integrating and improving activities in all areas under review. There was interest by CLCNSW to try and use the expertise developed within the CLC sector. Consequently the author's organisation was invited to be a stakeholder and resource provider in upcoming projects.

Several projects were identified and several were successfully completed. However most complex among the identified projects, was the development of an integrated CRM aimed at providing a cost effective suitable alternative to the member network. Planned as a project for the state of NSW, there was strong interest from the national body as well as other state peak bodies. Its complexity was also compounded by the fact that it had to be suitable for many diverse organisations, with an aim to becoming self-sufficient (raising its own finances) through an eventual fee-for-service arrangement.

The author was interested in following the outcome of this project as it would be about non-profits, small organisations, collaboration, and information systems. The thesis will be a secondary research on data collected by CLCNSW regarding ICT use among its member organisation staff. CLCNSW granted access to their data for the purpose of this research (Appendix A).

Research Question

While there is a significant amount of research into large organisations in the for-profit sector, there is a lack of research in small NPOs which can be due to lack of funding, or due to the lack of IS implemented in small NPOs. Therefore in studying this specific project, which is a collaboration between small NPOs for implementing an IS, the following research questions were considered.

1. What environmental factors affect project participation and can lead to minimisation of overall project failure?
2. What affects participation in collaborative IS development among NPOs?

Aims and objectives

This research will analyse data gathered from a user survey to investigate the relationship between individual engagement levels and organisational factors present in small non-profit organisations. Case studies will be used in combination with Activity Theory to add depth to the analysis of these relationships. It is expected relationships identified will assist in formulating strategies which will improve IS/IT uptake in the small non-profit sector, while also improving the success of such systems.

The aim of the research will be to explore whether existing tools such as evaluation models can be used to identify factors which affect a small organisations ability to adopt IS/IT. This is to be done explicitly in the context of small NPOs, and to propose strategies which can be used to improve adoption.

Chapter summary

This chapter highlighted some of the more prominent IT/IS failures which have captured the attention of the public. This chapter has also brought attention to failures not actually categorised as failures; this is due to these IT/IS not even being conceptualised or proposed. While models for evaluating projects post-implementation exist, this chapter presents the question as to whether models can be used for pre-implementation evaluation.

This project was motivated by several contextual factors for the author, some of which relate directly to improvements in strategy, which can help motivate organisations to consider IT/IS investment and involvement. This chapter also highlights a NPO sector rather than a single organisation as the focus of the research. This identified sector is largely composed of relatively small organisations.

This thesis is structured into the introductory chapter which sets the background and motivation for the research. This is then followed by a literature review, which highlights the lack of direct research into IS/IT evaluation in small NPO sector. Thereafter a methodology chapter follows highlighting the survey data analysis process, followed by another chapter analysing the results and findings gleaned from the survey. A discussion chapter is then followed by a conclusion.

2. Literature review

Introduction

Research into IS use in non-profits is relatively scarce. A broad term search using *Google Scholar's* advanced search function was conducted, limiting the search to the "senior scholars basket of journals"[1] published by the *Association for Information Systems*. The search terms were "Information Systems Non-profits", with articles containing only all three terms anywhere in the article being counted. Use of Google Scholar rather than a specialized search engine, was driven by reason of maximizing the search result. The search was conducted covering a period of 10 years 2008-2018.[2] The results for this are found in Table 1.

Table 1: NPO IS research 2008-2018 in the AIS 'basket of eight'

	'08	**'09**	**'10**	**'11**	**'12**	**'13**	**'14**	**'15**	**'16**	**'17**	**'18**	**Total**
Journal of Information Technology	8	9	5	10	13	6	7	9	8	10	1	**86**
Information Systems Research	3	6	10	7	5	11	5	2	9	4	2	**64**
Journal of Management Information Systems	1	3	6	3	5	1	2	3	0	2	2	**28**
MIS Quarterly	1	3	4	3	3	3	2	2	4	2	1	**28**
European Journal of Information Systems	0	1	0	0	1	1	0	0	1	8	2	**14**
Journal of the Association for Information Systems	0	0	0	2	0	1	2	1	1	0	2	**9**
Information Systems Journal	1	0	0	0	0	1	0	0	0	0	4	**6**
Journal of Strategic Information Systems	0	0	1	1	0	0	0	0	0	2	0	**4**
Total	**14**	**22**	**26**	**26**	**27**	**24**	**18**	**17**	**23**	**28**	**14**	**239**

A brief analysis of the NPOs and research areas, showed that a majority of the NPOs studied in these papers were large NPOs, or the NPOs were studied as a part of a mixed group of organisations with a focus on Health IS and education. There was also lack of IS evaluation research among NPOs. The research area focus in the papers tended to be on security or evolution of IS and benefits as well as case studies.

[1] The basket of eight is a list of journals curated by the Association of Information Systems. The AIS identifies them as the top journals in the field of IS research.
[2] The research was carried out in February 2019.

Narrowing the search parameters for non-profit and "information systems" in the title for the same period in all sources, produced only 13 results for the 10 year period of 2008-2018. Of this only four were from IS research journals. Adding 'evaluation' to the search terms in the title produced zero results, and adding 'adoption' produced just one result.[3]

Due to the scarcity of literature on the topic, this chapter will contain material from related fields which forms the basis for research assumptions and justification of the research model. The research will look at the use of IS in non-profits and specific challenges of non-profits regardless of whether an IS is present. This will be followed by a review of any research relating specifically to CLCs, and try to uncover characteristics unique to them, and also justify the reasoning of classing them as a small NPO. And finally a brief review of available IS evaluation models, with specific emphasis on the model most suitable for the research.

Defining IS success

Defining IS success and measuring it is a complex task due to the multiple factors used by different models and studies (DeLone and McLean 1992; Delone and McLean 2003; Sabherwal 1999; Sabherwal et al. 2006; Seddon et al. 1999). Seddon et al. (1999) considered over 186 empirical studies and determined that the multitude of measures is not an issue, as success can be perceived from different viewpoints in an IS. That is to say, different people in the system will have different views on whether the system is successful or not; this is succinctly summarised by Seddon (1997): "a value judgement [is] made by an individual, from the point of some stakeholder"(p. 248). Similarly Sabherwal (1999) found advanced planning does not necessarily create positive IS outcomes. In all instances the study considered success to be the adoption or the non-rejection of a system by intended users (Distel and Ogonek 2016).

The DeLone and McLean (1992) model represents a very popular approach for measuring IS success. The authors studied over a 100 papers and identified a significant difference in the measures and ambiguity in the definition of success. In doing so DeLone and McLean (1992) identified six categories of how IS success is defined: system quality, information quality, use, user satisfaction, individual impact and organizational impact. This model has been extremely popular and successfully tested in many empirical studies (Agourram 2009; Rai et al. 2002). It should also be noted the DeLone and McLean model received a 10 year update (Delone and McLean 2003).

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[3] A book chapter authored by Eshraghi, A. (2015). "Revisiting Information Systems Research in Nonprofit Context: (Non) Adoption 2.0 in a Small Voluntary Club".

Clearly there is considerable variation in considering success as it appears to be very subjective. Research which consider the previously mentioned popular models of DeLone and McLean (1992; 2003) and Seddon et al. (1999) add or recommend adding extra dimensions such as culture to the definition of success (Agourram 2009; Rai et al. 2002). Therefore considering the nature of the research where the observation is a system in implementation, it is necessary to carefully establish the boundaries of the definition. For our purposes the definition of IS success is drawn from the management science literature. Ein-Dor and Segev (1978) identify the different criteria for success: profitability, application to major problems of the organization, quality of decisions or performance, user satisfaction and widespread use. Among these they make note of the need to clearly separate the success of an IS project - i.e. completing it on time and on budget and meeting all functional needs from IS success which is the end output - in this case user adoption. Since the research aims to identify environmental factors affecting IS adoption and the observation is of a condition prior to an IS being implemented, it is necessary to be clear that adoption and not implementation will be the focus.

Use of Information Systems in a small NPO

ISs are a commonly used tool in many organisations, especially in developed countries. However research in the field of public administration has clearly identified differences in the use of technology between for-profit, public and NPO sectors (Corder 2001; Thatcher et al. 2006).

While these new information technologies increase funders' and program evaluators' expectations as to what can be delivered, NPOs that lack such resources fall further behind in the delivery of services (Schneider 2003). Furthermore it has been identified in some of the broader public administration NPOs literature, that they are very much behind in their adoption of IS (Burt and Taylor 2000; Corder 2001; Hackler and Saxton 2007). Schneider (2003) found organisations providing services to the under-privileged - in their case minorities, lost out on funding due to having trouble meeting expectations regarding proposals and record-keeping for being unable to use IT/IS effectively (Schneider 2003).

Smaller NPOs also tend to not prioritise IS as they see it as secondary to their mission; this is identified by Berlinger and Te'eni (1999) in their study of small religious non-profit organisations. In their study they note Management Information System (MIS) research regarding success, assumes a systems approach with a well ordered hierarchy of goals (Berlinger and Te'eni 1999). They further note that while this is useful for administrative evaluation, when it comes to NPOs, administrative goals are not weighed against organisational goals in the same manner as in the business world (Berlinger and Te'eni 1999).

Research into IS success in the management field provides insight into factors which affect its success. Ein-Dor and Segev (1978) in their study of the effects of organisational context, make the proposition that "the likelihood of a successful MIS effort declines rapidly the lower the rank of the executive to whom the MIS chief reports [to] (p. 1073- 1074)". This proposition though drawn from a 'for-profit' context, is bound to be valid in a small organisational context: i.e. small NPOs tend to not be as hierarchical, therefore the operational oversight of the IS will likely be at the higher levels. This could be both a positive as well as a negative factor depending on the importance of operation placed on the IS by the leadership. Berlinger and Te'eni (1999) in their study of NPOs note this relationship between success and leadership is quite valid: i.e. they find that attitudes of NPO leaders towards use of IS in relation to organisational goals, is key in influencing overall adoption. In small NPOs there may not be many mid-level managers with large teams; this makes each employee's participation more important. This also means that unlike in large organisations where mid-level managers are important, the leader and other employees may all have an equal say in the success of an IS.

CLC sector research

CLCs provide services and information to disadvantaged segments of community. Te'eni and Young (2003) note that NPOs face a broadening of their role in serving information needs; this assertion is based on NPOs "facilitating transactions and creating relationships based on their information-related advantages (Te'eni and Young 2003, p. 398)". Giddings and Noone (2004) highlight that CLCs started by providing access to legal information, advice and representation through a collective and activist approach. CLCs are therefore clearly an information providing NPO, which will face pressure to broaden their information providing role.

The NPO sector needs to have viable models and examples of successful IT/IS to be able to positively accept the idea. Zorn et al. (2011) "suggest that NPOs adopting and using ICTs tended to be self-perceived leaders or those who […] tended to have organizational decision makers with the expertise (p. 1)". This clearly means that an opportunity exists for NPOs which have had success to influence the sector. While there is no doubt an opportunity for modern technology to assist in improving CLC services exist, strategies will be required to facilitate adoption in a sector.

Strategic capabilities of CLCs seem to be limited, with Giddings and Noone (2004) noting that a distinguishing feature of CLCs was the lack of formal organisation and administrative systems. Corder (2001) in his research on NPOs found that depending on outside contacts, and that other agencies for technological services stunted innovation in the area, a dependence on volunteers and less elaborate technological support networks disadvantaged NPOs. In addition to this Crump and Peter (2013) note that the lack of comprehensive administrative teams is normal in small

organisations, and that administrative overheads for smaller organisations can be around 10-15% higher than large organisations, making them more likely to engage shared services (Crump and Peter 2013). This lack of administrative and technological support is a limiting factor for CLCs.

Resource sufficiency, institutional factors and network effects influence collaboration among non-profits (Guo and Acar 2005). According to them collaboration takes place more so among organisations that are older, receiving government funding and have board linkages. While the CLC sector has all the factors identified by them, Giddings and Noone (2004) found the CLC sectors strategic capabilities are severely restricted by government "funding policies and practices [which] do not meet the full costs (administration/infrastructure costs) of service delivery". However a background report from the *NSW Council of Social Services* (NCOSS) recommends collaboration between organisations as a means of achieving economies of scale in the absence of increased funds (NSW Council of Social Services 2008).

Benefits, barriers and challenges of IS in NPO

There exists a significant amount of literature which identifies benefits arising from IS use in an organisation. However this research is mostly in for-profit contexts or for public sector or e-government initiatives (Sutanto et al. 2008; Zhang et al. 2010). Liu and Lin (2008) note that "private sector organizations have an overriding goal of profit maximization… public sector organizations, subject to external audit, often have to operate within a tight definition of best value that relates to economy, efficiency, and effectiveness (p. 89)". The fact that public sector organisations are not driven by profit motives, rather by the need to fulfil services in a fair, open, accountable and objective manner constrained by legislation, makes them very similar to the manner in which NPOs operate to fulfil their mission in serving society. To this end workers and organisations in the NPO sector tend to be intrinsically motivated by ideological goals (DeVaro and Brookshire 2007; Mirvis and Hackett 1983; Ruhm and Borkoski 2003).

Table 2: Potential benefits of shared IT services (Crump and Peter 2013)

1. Shared services provide expert service/concentration of specialist skills
2. Shared services facilitate better knowledge sharing and collaboration
3. Shared services result in savings as cost is shared among users
4. Shared services allow standardisation of systems and processes without losing your identity as an organisation
5. Shared services streamline accountability and reporting requirements
6. There is a low system maintenance
7. Shared services encourage and can eventually lead to accreditation and compliance
8. For small NFPs shared services reduce risks
9. We are assured of consistent and reliable service levels at all time

Crump and Peter (2013) in their study on IS/IT use in the NPO sector aimed at identifying reasons why NPOs should be using shared computing services, tested eight potential benefits of shared services. These benefits as perceived by NPOs are presented in Table 2 ordered by the level of agreement in each benefit.

Challenges for IS/IT adoption in voluntary sector organisations have been conducted by Pereira and Cullen (2009). While identifying that technology is proliferating in the NPO sector, they also conclude most research takes place in commercial organisations and that such research has not been extended to NPOs. They assert that "lack of funds and ICT skilled staff in voluntary sector organizations" are challenges when it comes to IS/IT implementation in NPOs. Ruhm and Borkoski (2003) in their work identify that workers in the NPO sector are remunerated at comparatively lower rates than their counterparts in for-profit or government organisations, which (Zhang et al. 2010) point out result in skilled IS users required for effective IS use, being un-willing or not-available to work in NPOs, placing NPOs at a disadvantage.

Table 3: IS in NPO research context adapted from Zhang et al. (2010)

Criterion	**NPO context**
Adoption of IS	Late
View of Information	Information helps accomplish core missions; information needs to be protected
Goals for use of information	Compliance, affecting public policy, serving a greater good
IS project stakeholders	Both internal and external, rather heterogeneous
Sources of funds	Mostly external, grants
Economics of IS	Resources diverted from providing the services
Driving force	Ideology
View of IS	Burden

Dukler (1989) researching the use of IS in human services in the public sector in its early stages, identified that often the delay in using the most advanced functionality available for creating efficiencies in that sector, happened due to limited budgets being allocated and that it often resulted in only mediocre improvements, due to the technology being afforded for the available budget was older and not properly adapted. While conditions for IS use in human services in the government sector has changed due to the rapid e-government utilization, IS in NPO services are now in the stage he identified. In addition lack of management, which includes internal accounting, controls and evidence based decision making has been identified by Herzlinger (1977) as a key factor affecting IS/IT adoption in NPO. Schneider (2003) and Saidel and Cour (2003) identified both lack of training budgets for staff as well as lack of staff with technological capabilities, as a barrier for IS use in NPO.

IS Evaluation Models

There are multiple theories and models proposed for evaluating the adoption of IS in organisations. Lu et al. (2012) in their review of IS evaluation models categorised them into several streams: a User Satisfaction Research Stream, a Behavioural Intention Research Stream, a Structuration Research Stream, an Innovation Diffusion Research Stream, and a Task-Technology Fit Research Stream. Table 4 adapted from Lu et al. (2012) summarises the streams, definitions and the relevant models.

Table 4: Models for IS evaluation and respective research stream. Adapted from Lu et al. (2012)

Research Stream	Definition	Information System Evaluation Model
User Satisfaction	User satisfaction research is believed to address the causal chain of satisfaction, along with the intention to use, the usage behaviour, and the effectiveness of the systems (p. 243)	User Satisfaction, UIS
		End User Computer Satisfaction
		Equity Theory
Behavioural Intention	The behavioural intention research stream investigates explanatory models for adopting technologies; these models help us to understand and predict users' adoption and usage behaviour (p. 244)	Theory of Reasoned Action
		Theory of Planned Behaviour
		Technology Acceptance Model (1 & 2)
Structuration	structuration research focuses on exploring the social interaction of an individual, community and institute (p. 244)	Adaptive Structuration Theory
Innovation Diffusion	Innovation diffusion research delineates a staged model through which an individual chooses to adopt, reinvent, or reject an IS/T application (p. 245)	Innovation Diffusion Theory
Adaptive Fit	research focuses on the correspondence of IS/T functionality and task requirements (p.245)	Task Technology Fit

One of the research streams is that of behavioural intention, which consists of explanatory models on adoption. Of the multiple models, Technology Acceptance Model (TAM) has seen wide use (Venkatesh and Bala 2008). Lu et al. (2012) have reviewed both TAM 1 and 2, but has not included the most recent iteration of TAM 3, perhaps due to the lack of its use and support unlike its predecessors. Their decision to include TAM and TAM 2 in behavioural intention streams also seems restrictive, as all three variants of TAM consider user satisfaction. In addition TAM 2 with its

inclusion of metrics such as subjective norms, image or perception of external control would also fit with the structuration research stream. Considering the suitability of models for the research, streams of innovation diffusion and adaptive fit tend to evaluate the system from a functional and technical perspective which makes them more a post-ante type evaluation and therefore not suitable. Instead using TAM or one of its extensions which focuses on individual use evaluations would seem suitable in the context of this research.

Technology Acceptance Model 3

One of the most popular models for IS evaluation is TAM. There are several iterations of TAM with the most recent being TAM 3. TAM (Davis 1985) was theorised in order to provide a better set of measures which can help in identifying why users do not use systems (Davis 1989). TAM was an adaptation of TRA looking specifically at user acceptance (Davis et al. 1989); it measures perceived ease of use and perceived usefulness of a system in both predicting and explaining user behaviour towards systems. TAM 2 extended TAM by explaining the two measures - primarily that of perceived usefulness, through the terms of social influence and cognitive instrumental processes (Venkatesh and Davis 2000).

Table 5: TAM 2 extension measures and definitions (Venkatesh and Bala 2008, p. 277)

Determinants	**Definitions**
Perceived Ease of Use	Belief that using IT will be free of effort.
Subjective Norm	An individual's perception of how people important to them think about whether they should use the system or not.
Image	An individual perception of how using the system will increase their social status.
Job Relevance	An individual's belief that the system is relevant to their job.
Output Quality	An individual's believes about the systems contribution to performing their job tasks well.
Result Demonstrability	An individual's belief the results of using a system are tangible, observable, and communicable.

TAM 3 (Venkatesh and Bala 2008) combines TAM 2 (Venkatesh and Davis 2000) and determinants of perceived ease of use presented by Venkatesh (2000). Table 6 lists the added measures.

Venkatesh and Bala (2008) further note and highlight several relationships which occur with the introduction of the measures stemming from experience. The theorised model of TAM 3 is seen in Figure 1.

TAM, TAM 2 and TAM 3 have been used extensively to explain user acceptance of IS. Venkatesh and Davis (2000) assert that TAM explains about 40% of variance in usage intention and behaviour in a large number of empirical studies using the model. In doing so they also make the initial assessment and validation that TAM 2 explains about 40%-60% of variance in usefulness perception and 34%-52% in usage intention. The wide use of TAM and its extensions gives good reason for selecting TAM 3 for use in this study.

Table 6: Determinants of perceived ease of use for TAM 3 (Venkatesh and Bala 2008, p. 279)

Determinants	**Definitions**
Computer Self-Efficacy	An individual's belief on their ability to perform a specific task/job using the computer.
Perception of External Control	An individual's belief about availability of organisational support and resources to use the system.
Computer Anxiety	An individual's fear in using computers.
Computer Playfulness	". . .the degree of cognitive spontaneity in microcomputer interactions" (Webster and Martocchio (1992, p. 204) as cited by Venkatesh and Bala (2008).
Perceived Enjoyment	The perception of whether using the system is enjoyable by itself in addition to other consequences.
Objective Usability	A "comparison of systems based on the actual level (rather than perceptions) of effort required to completing specific tasks". (Venkatesh (2000, pp. 350-351) as cited by Venkatesh and Bala (2008)

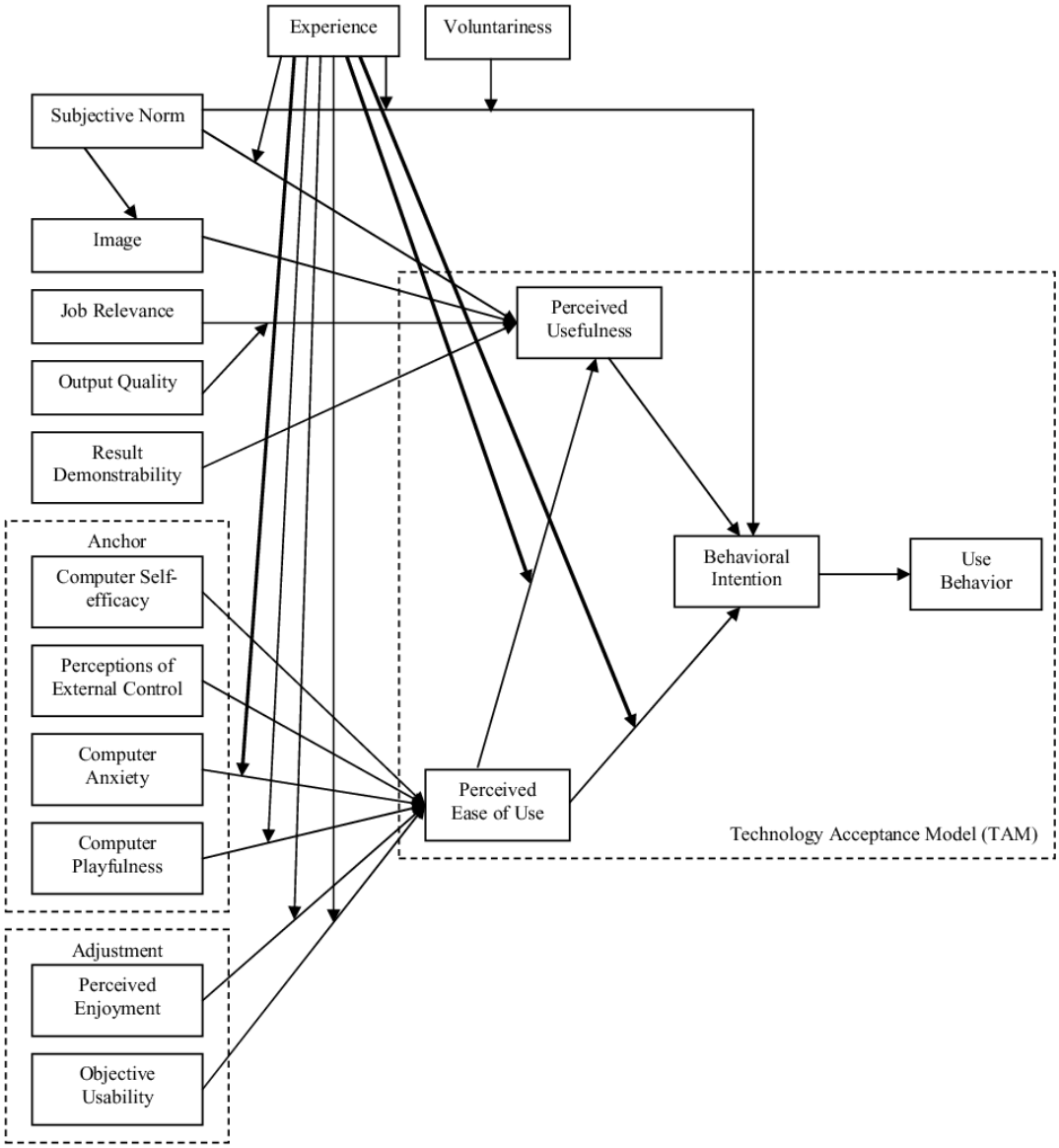

Figure 1: Technology Acceptance Model 3 (Venkatesh and Bala 2008)

Chapter summary

This chapter began by highlighting the lack of research into information systems in NPOs in the Information Systems research literature. This was done by a broad keyword search for any research on IS in NPOs in the most prominent IS journals and comparing that to a broad search on a more specific keyword related to the thesis. This creates a need to consider research not found in the IS literature. This chapter considers research published in NPO and other management journals to elicit the unique nature of small NPOs and thereafter the nature of the CLC type NPO, which is the focus of the thesis. In order to create a suitable research framework it was necessary to consider existing evaluation models, of which TAM 3 has been seen to be the most effective. The next chapter delves into the mechanics of using the selected framework for the research, and the process used for cleaning and adapting the data provided, as well as outlining some of the challenges present.

3. Methodology

Introduction

This section deals with the different tools, data sourcing and challenges which were present in the research. As such it begins by presenting the theoretical model developed, followed by the analytical methods used. Then a description of the data used and the transformations which were conducted on it are presented. A brief description of the challenges encountered from the dataset are also included in the chapter.

Theoretical framework

The study relates to a pre-implementation project engagement as a possible measure for future IS success. An adaptation of TAM 3 will be used for identifying whether some of TAM 3 metrics will reflect pre-implementation engagement. TAM 3 is a post-ante user satisfaction/adoption model which means it has not been previously used for analysing a pre-implementation environment. Considering the measures added in TAM 3, i.e. determinants of perceived ease of use (seen in Table 6), most of these measures are likely to be present prior to an IS being implemented, and are likely to arise from a user's existing experience with IT/IS. Taking it a step further, experiences with previously failed or sub-optimal IT/IS conditions can engender a negative attitude towards 'perceived usefulness'.

The adaptation of TAM 3 will include the determination of factors present in pre-implementation. Table 7 presents the factors which will be present in this pre-IS stage. Furthermore analysis of the factors will also be constrained by the data made available for the purpose of the research.

Table 7: Selected measures from TAM models for pre-implementation engagement analysis

TAM 1	TAM 2	TAM 3
Perceived usefulness	Job relevance	
Perceived Ease of Use		Computer Self-Efficacy
		Perception of External Control
		Computer Anxiety
		Computer Playfulness

Based on the identified factors, TAM has been adapted for pre-IS evaluation as seen in Figure 2. Perceived usefulness of an IS in pre-implementation stage will affect engagement only according to perceived relevance to job, i.e. if a worker believes that the system is likely to assist in their job they will be more willing to engage. Similarly perceived ease of use in pre-implementation will be affected by computer self-efficacy, perception of external control, computer anxiety and computer playfulness.

Perceived ease of use will be the more complex of the two factors, as experiences can determine perceptions significantly. For example a worker who has not had much IT support or has had their work hampered by IT is likely to perceive that the IS will be difficult to use and would be unwilling to engage in the belief that it will be an added burden. In addition computer playfulness can also affect their engagement. It is possible that perceived ease of use will therefore be affected by organisational environment factors such as resourcing and training.

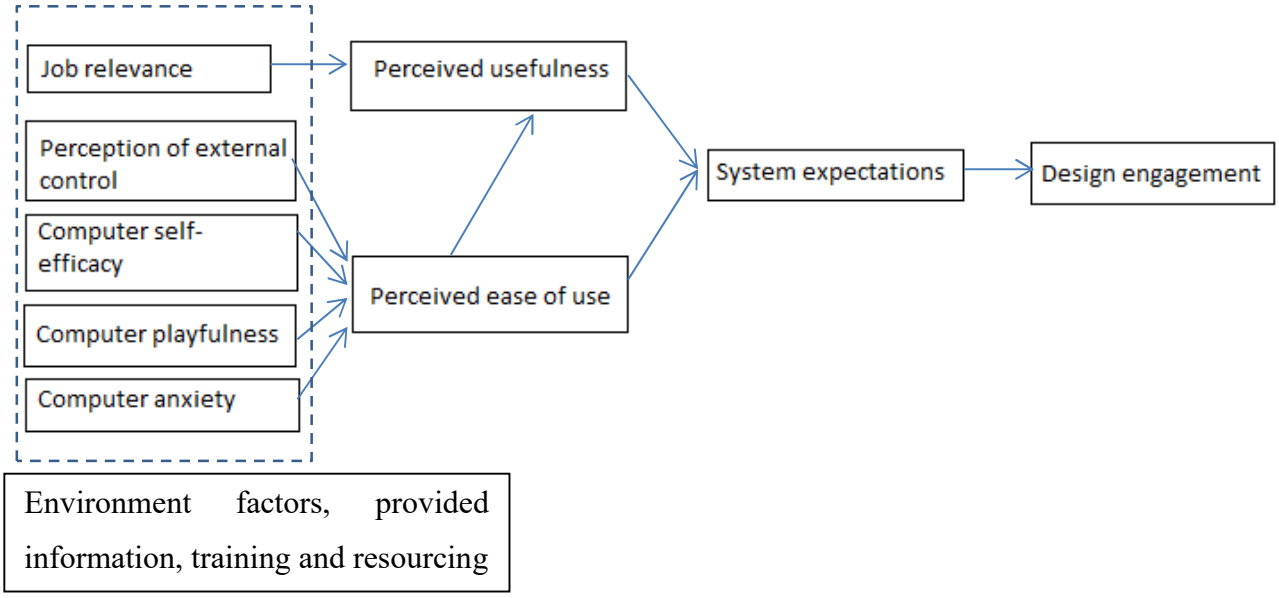

Figure 2: Proposed model for engagement evaluation

Considering these possibilities, engagement will be tested against job role and organisational factors. The following hypotheses will be tested:

H1: A person's job role will affect their indicated engagement level

H2: An organisations sophistication level will affect their indicated engagement level

In addition to testing these two hypotheses, grounded theory will be used to analyse the available data to discover any further theories on evaluating IS implementation in small non-profit organisations.

Analytical methods

The analysis includes survey analyses and case studies. The presence of survey data requires the use of suitable analytical tools to elicit the required information. The following section details the tools used for both survey data and the case studies.

Cross tabulation

Cross tables - also called contingency tables, are a widely accepted quantitative analysis method used when the data available can be categorised into mutually exclusive groups. This is especially

relevant for surveys. The study based on survey data categorised into mutually exclusive responses appears to be a good candidate for this method. Analysing the responses using this method is expected to reveal findings not only related to the research questions but also any interesting patterns.

Stacked graphs

This type of analytical visualisation is useful when a scale is used in a survey. The survey data contained many subjective questions where the respondent was asked to rank the answer. Almost all the users provided complete answers to each question making use of this method possible.

Due to the visual nature of this method and the known issue of identifying actual values assigned to the portion of each bar, it was combined with illustrations of each value. This modified method made the ranking of features in the survey most suitable to represent the scale as it made analysis easier.

Activity theory

Activity theory is a framework used in system description. Described by Hasan and Kazlauskas (2014) as being all about 'who is doing what, why and how', it is a theory based on the work of Russian psychologists Vygotsky, Leontiev and Luria and is very useful in understanding human activity. Vygotsky's work theorizes that human activity is purposeful, with the core of an activity being the relationship between the subject (the do-er) and the object (the deed) (Hasan and Kazlauskas 2014). Activity theory became popular after Engeström published a representation of the collective activity system seen in Figure 3 (Hasan and Kazlauskas 2014). The theory will be useful in observing the different interactions and activities taking place.

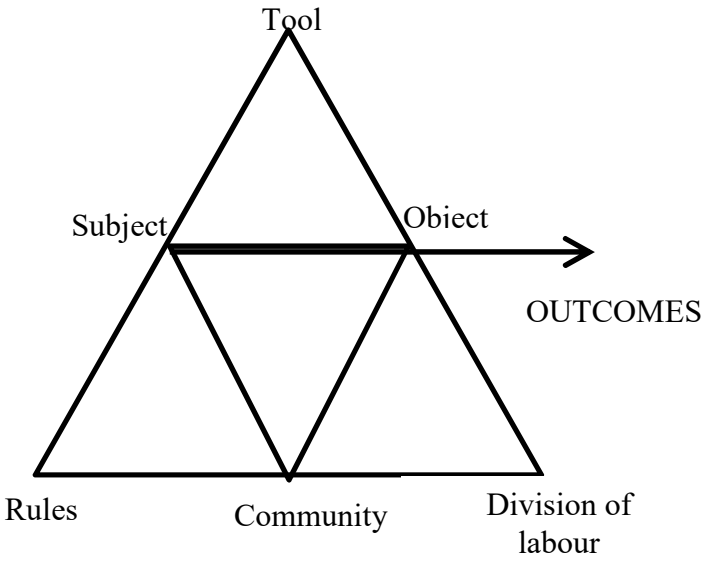

Figure 3: Engeström collective activity system diagram (Hasan and Kazlauskas 2014)

Data collection

The main analysis will be carried out on a dataset which was made available to the author by CLCNSW. CLCNSW granted access and permission to use their data specifically for this research (Appendix A). This dataset consists of CLCNSWs CRM projects' pre-survey among CLC workers. The data set contains 48 records, collected over a two week period in July 2017. The information collected through an online survey tool asked questions regarding the participants' role in their respective organisation, information regarding the systems currently in use in each organisation, features which they would find most valuable and the level of engagement they would consider providing towards the project.

Microsoft Excel was used in de-identifying the data, removing individual identifiers as well as organisational data. The same software was used in re-classifying open-ended answers. Of the 48 records, two were removed as the respondents had only answered one question and had not proceeded further.

Instrument description

The questionnaire designed and delivered by CLCNSW consisted of 13 questions of which three questions concerned personal identification. Responses to these questions were de-identified in the data set used for this research. To accommodate ICT usage diversity in the survey audience, nearly all questions incorporated a free-text answer option. The only questions without free-text answers were those required ranking for priority of desired features.

Response classification

The lowest level of engagement was in being signed up for information updates, unless participants had provided a free text response in addition to that explaining what level of engagement they would be willing to make in the future or under different conditions, such as increased staffing. The next level was those willing to engage in further user surveys to elicit features. The highest level was those willing to engage in the design process and also to engage in testing/piloting the system.

Engagement level classification

The responses allowed selection of multiple levels of engagement. This meant re-classification considered only a respondent's highest level of engagement. Responses which were re-classified as high engagement, were those who were willing to pilot the system or provide input in to the design and development stages. Many of them also wanted to be involved in other types of engagement.

Responses classified as low engagement, were those who indicated they would be willing to participate in feedback collection and surveys. Respondents who said they were only willing to receive news about the development were classified as unlikely to engage. In addition respondents who had left this empty were classified as unlikely. There were only two responses of this nature.

Of those who provided valid responses, 24 responded positively to being highly engaged in the process. Some 14 indicated they would only be interested in hearing about what is happening i.e. the lowest level of engagement which the survey allowed participants to respond. There were 8 respondents willing to participate in surveys, which was classified as a maybe willing to engage, even though it is possible they may not actually engage.

Role classification

The CLC sector - composed of small organisations, often have one person fulfilling multiple roles. To reflect this, respondents were allowed to select multiple roles from a given list as well as an open field to self-describe their role. These roles were then manually classified into legal: workers whose primary responsibility is in the legal field, managers: workers who responded that they didn't have any legal responsibilities, but engaged in administrative or executive or directing roles, and stakeholder engagement: workers who indicated they worked exclusively in work which engages non-organisation external persons.

As the CLC sector is primarily composed of legally qualified persons whose main role is to deliver legal information or advice and provision of legal services requires specialised knowledge, this was defined as the primary role in classification. For example a person who indicated legal and management, is likely to be a legal officer or principal solicitor filling an executive role in the operations of the organisation; this was the reasoning for applying legal as the primary classification for anyone indicating that role. Likewise workers indicating management or administrative responsibilities and no legal roles, were classified as management. Lastly anyone who was neither legal nor management but indicating a role only in engaging outside persons or volunteer management, were classified as stakeholder engagement.

System sophistication classification

The survey had multiple questions regarding existing systems used for collaboration, e-learning, communications and event management. Multiple options were given from pre-gathered knowledge. In addition a free text field was provided for respondents to provide information on systems which were not among the given choices.

Depending on the responses for each of the systems the organisations sophistication level was classified manually as Advanced, Medium or Low. Responses ranged from simple email to CRM

and other commercially available SAAS. The responses with CRM were classified as advanced, as they were given as being used on more than one activity for that organisation, indicating an integrated system fulfilling multiple tasks. If a respondent indicated non-integrated modern commercially available Software as a Service (SaaS) systems used in more than two activities, those too were classified as advanced. Organisations which had non-integrated systems for less than three functions and had older systems in place were classified as medium. Organisations indicating they had no systems or manual systems (pen and paper based) or just simply stand-alone email, were classified as having low levels of sophistication.

Feature ranking

Each respondent was asked to rank their desired features for a proposed system - which was simply a list of features to be ranked. These features were the same functions which they were asked to provide information on regarding what was being used at their organisation. There was no reason to re-classify these responses.

Case studies

Case studies of two groups of resource-strapped organisations will be drawn in order to analyse the relationships and activities conducted in regarding to IT/IS development. These case studies will be on the activities of CLCNSW for their membership, and the *Tenants' Union of New South Wales* (TUNSW) as a resourcing body for the *Tenants' Advice and Advocacy Services* (TAAS) network.

Challenges

The data collected in the survey required re-classification due to multiple open ended or multi-selection questions. This was compounded by each response being self-reported. Especially in the case of evaluating the organisations level of sophistication, the possibility that the respondent is not knowledgeable would have impacted the classification, i.e. a situation might have arisen where two respondents from the same organisation would have responded in a way that would have classified their organisation differently. Due to this reason respondents were not grouped into organisations, so this approach would strengthen the relationship between a respondent's experience and their engagement perception.

A second challenge was present in the question which required the respondent to select the level of engagement possible. Some respondents such as those in management, would be aware of capacity issues indicating lower engagement, while a respondent who was unaware would indicate higher engagement capability. This means actual engagement on an organisation level during the project may not reflect the findings of the survey.

There is a possibility the author might have influenced some of the responses as he is employed in one of the organisations with an advanced level of sophistication and was also involved in a consulting capacity to the project. Two of the 48 responses were from the author's organisation. The author's colleagues who responded to the survey may have approached the author for clarifying the organisation's state as well as the nature of the project, and also been part of general organisation meetings where the author provided updates. This additional information not available to other respondents may have influenced their responses.

While the proposed model specifies many measures which can impact engagement, the limited nature of the data available does not facilitate a complete analysis of the model's relevance.

Data limitations

The data limitations facilitated only a limited evaluation of the model. The data was obtained from a secondary source, and unlike a primary data source the questions administered could not be customised specifically for the research question. The survey data could only provide information regarding engagement level and several environmental factors.

The environmental factors, organisational IT/IS sophistication, was derived from a subjective categorisation of systems already in use. It was assumed that this environmental factor will influence 'perceptions of external control' (as seen from the model), as lower levels of sophistication will be equivalent to poor resourcing.

Job relevance was the other measurable factor from the data. It was again through a subjective categorisation of individual job roles, to identify the relevance of IT/IS to respondent roles. The other determinants from TAM3 (computer playfulness, computer self-efficacy and computer anxiety) could not be analysed as they were not measured in the survey data provided. An in-depth survey using customised questions and qualitative methods will be required to fully evaluate the relevance of a post implementation model (such as TAM 3) in pre-implementation. However this is beyond the scope of this research which serves only as a basic evaluation of using an adapted TAM 3 to ascertain pre-implementation conditions of the CRM.

Chapter summary

This chapter described the model adapted for the research. In addition the data source and the process used for cleansing and adapting the data was presented. The relationship between the extracted metrics and the model was also presented. The challenges of using the supplied data was also discussed. The next chapter will take an in-depth look at the findings from the data after which an analysis is presented.

4. Results and Findings

Survey findings

Engagement level and organisational role

The data provided a surprising outcome. Sentiment about IT systems among legal practitioners are usually negative due to what they consider risk, which can occur from unplanned disclosure of confidential client information. However in the sample it appears around 61% of respondents in an organisational role were willing to be highly engaged in the project. Only 1 out of 13 indicated they were unlikely to engage in the project; this is in contrast to 8 out 24 respondents in management roles saying they were unlikely to engage. Even more surprisingly 50% of those most likely to benefit from a system of this nature - respondents in stakeholder engagement roles, indicated they were unlikely to engage.

Table 8: Engagement by organisation role

	Legal	Management	Stakeholder engagement
Unlikely	1	8	4
Low	4	3	1
High	8	13	3

Engagement level and organisational sophistication level

The data comparing engagement levels showed that respondents indicating familiarity with a high level of sophistication in the systems being used, were more likely to engage with the development process i.e. 10 out of 18 accustomed to advanced systems, indicated high levels of engagement. This willingness to engage numbers were comparable to respondents who were used to lower levels of sophistication, with 9 out of 18 indicating high engagement.

Table 9: Engagement by organisational sophistication

	Medium	Low	Advanced
Unlikely	4	5	5
Low	1	4	3
High	5	9	10

Respondents using medium sophistication systems however, indicated an almost equal likelihood of being engaged with four out of 10 (40%) indicating they were unlikely to engage; this is in contrast to 27% of both low and advanced sophisticated system users, indicating engagement being unlikely.

Engagement level and organisational sophistication and respondent role

Cross tabulating the data to examine the role and sophistication in engagement, showed that most stakeholder engagement respondents were from organisations with high levels of sophistication. Two of three stakeholder engagement respondents who were unlikely to engage, were from low sophistication organisations. All stakeholder engagement respondents from organisations with high sophistication levels were willing to engage at a high level.

Table 10: Engagement breakdown by organisational sophistication and role

	Unlikely	Low	High
Advanced	4	3	10
Legal	1		1
Management	2	2	6
Stakeholder engagement	1	1	3
Low	5	4	9
Legal		3	6
Management	3	1	3
Stakeholder engagement	2		
Medium	4	1	5
Legal		1	1
Management	3		4

For respondents in legal roles, most of those (six of eight) willing to engage highly, were from low technology organisations. However the only legal respondent unlikely to engage was from a high technology organisation.

Feature ranking

The respondents' prioritisation of the proposed features was presented in Figure 4. The combined results are clear in the features requested. Volunteer and stakeholder management tools comprise the most immediate need, with the ability to have an easily manageable public website being the second top priority.

Further down the priority rankings the clear difference disappears with features being prioritised by almost equal numbers of respondents. The only clear second priority was online donations and payment management tools (11 respondents), however this was very closely followed by event management (nine respondents), volunteer and stakeholder management (eight respondents), e-learning (seven respondents) and adaptable website templates (six respondents).

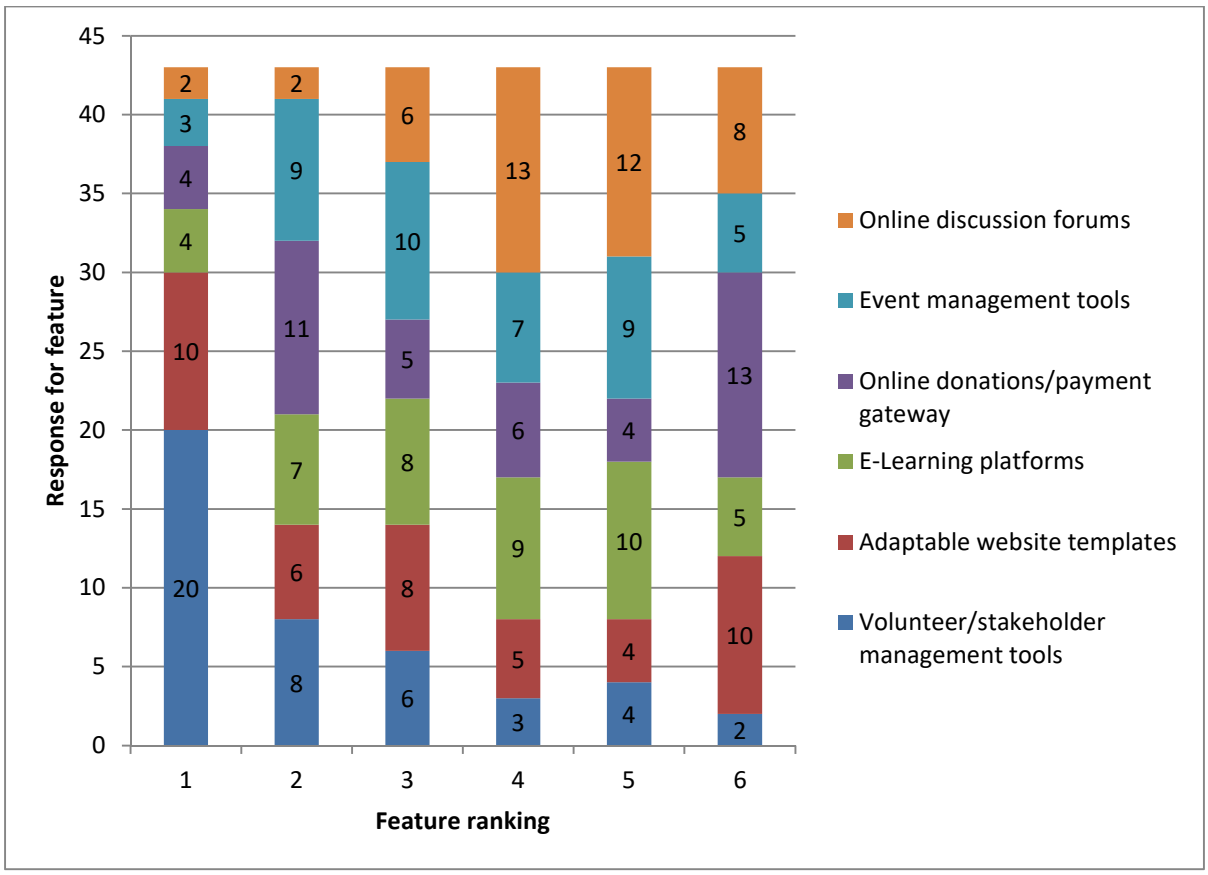

Figure 4: Feature ranking by all respondents

The top three results in feature priority were: volunteer and stakeholder management tools (34 respondents), adaptable website templates (24 respondents) and event management tools (22 respondents).

Engagement and Feature priority

Segmenting the feature prioritisation by expected engagement level indicates those who are willing to engage the most, prioritised the volunteer and stakeholder management tools. Those with lower engagement levels, prioritised website management tools. Those unlikely to engage, preferred volunteer and stakeholder management tools.

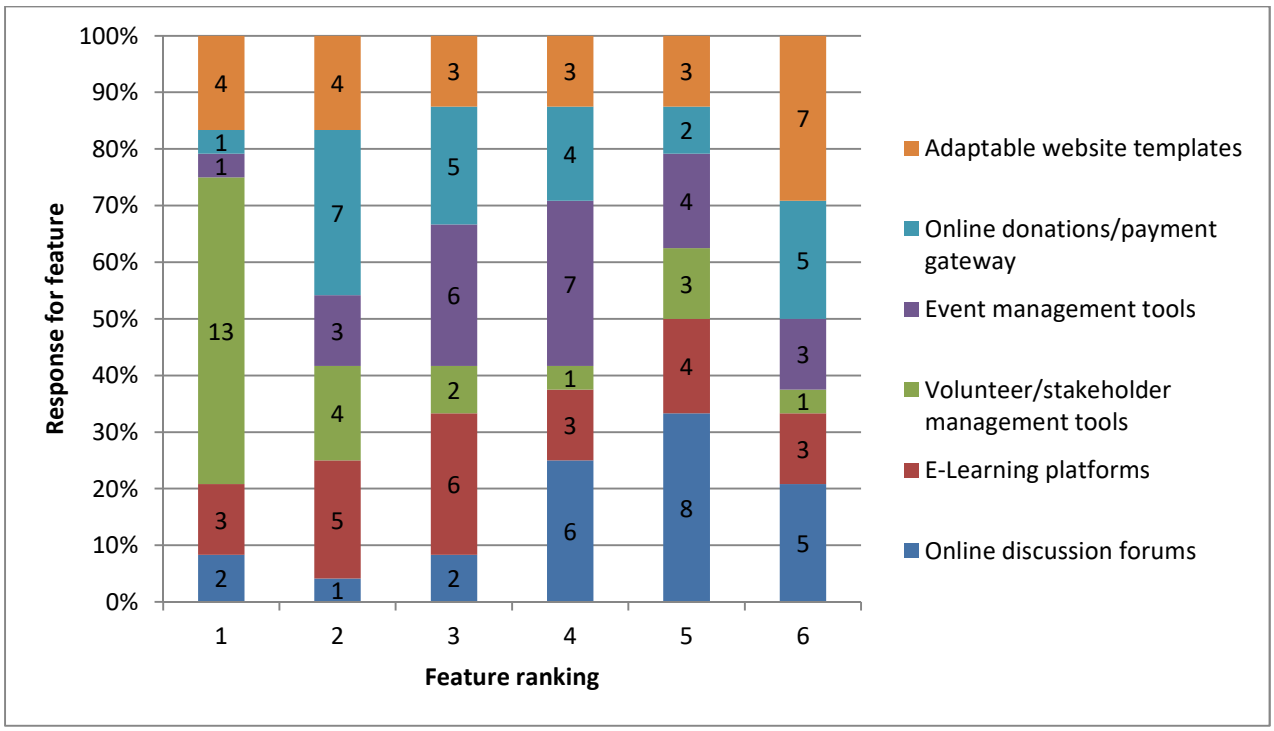

Figure 5: Feature ranking by highly engaged respondents

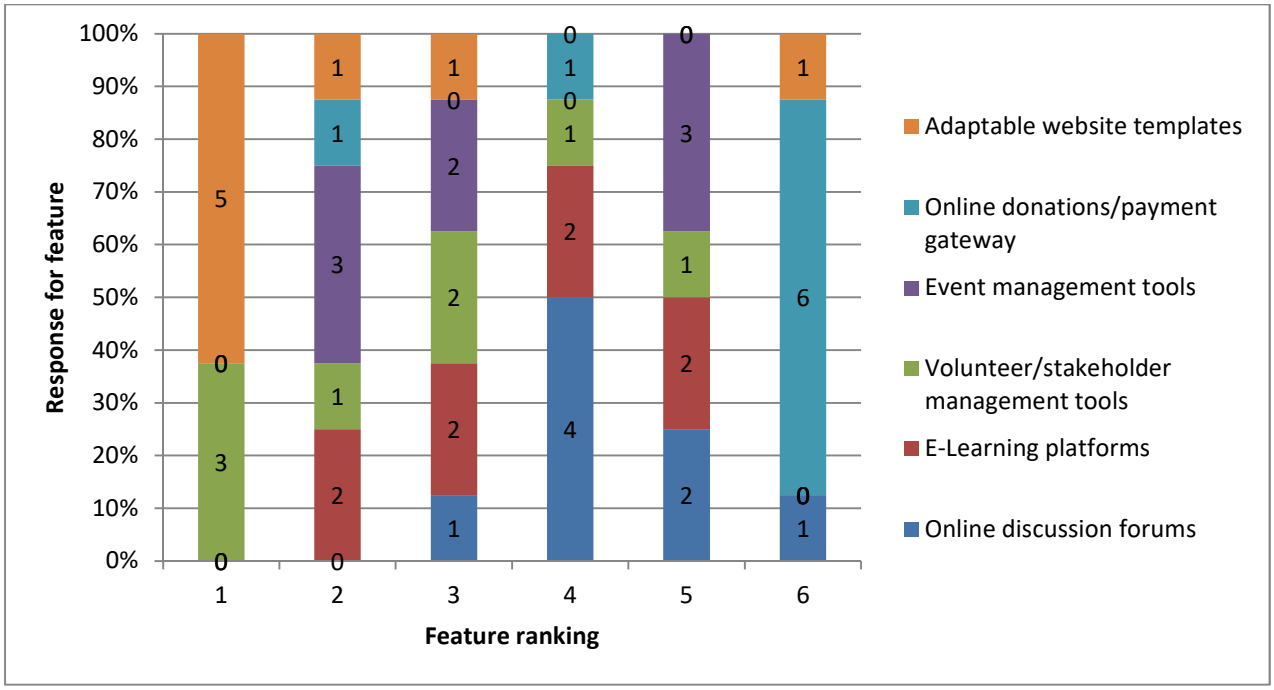

Figure 6: Feature ranking by low engagement respondents

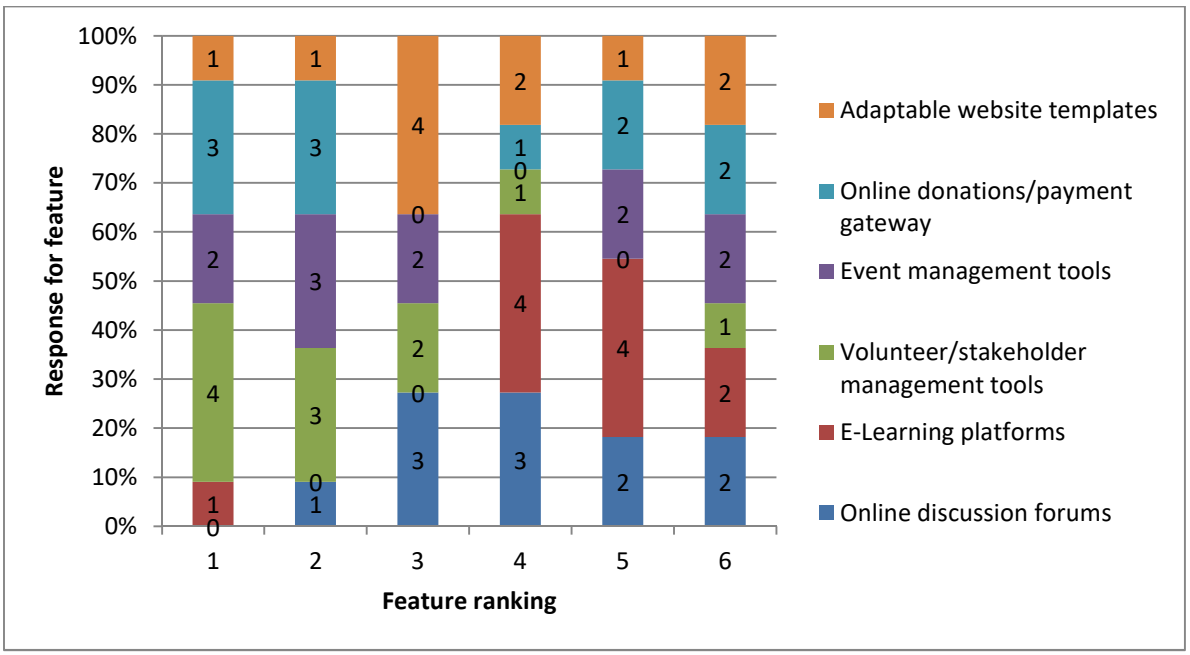

Figure 7: Feature ranking by respondents unlikely to engage

Sophistication and Feature priority

Segmenting results by level of sophistication does not provide a clear difference between the priority rankings. All three types of sophistication level organisations prioritised the same feature of volunteer and stakeholder management as highest. Website templates were also a highly ranked feature in organisations with low sophistication.

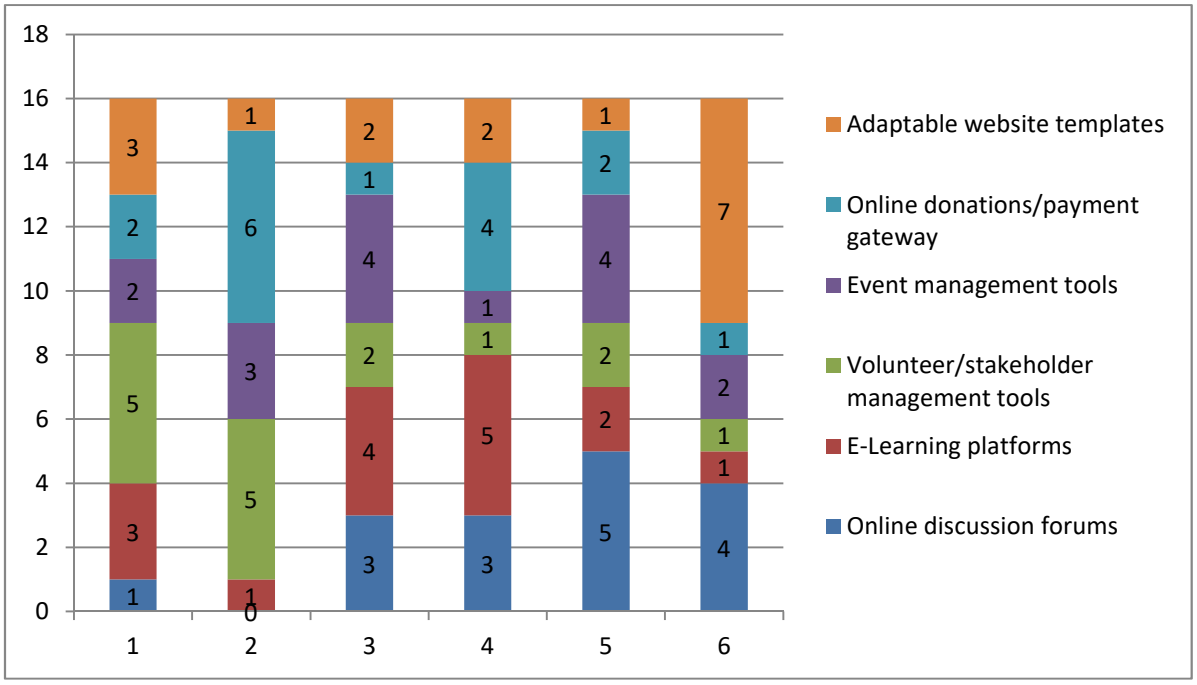

Figure 8: Feature ranking by respondents in organisations with advanced IS/IT utilization

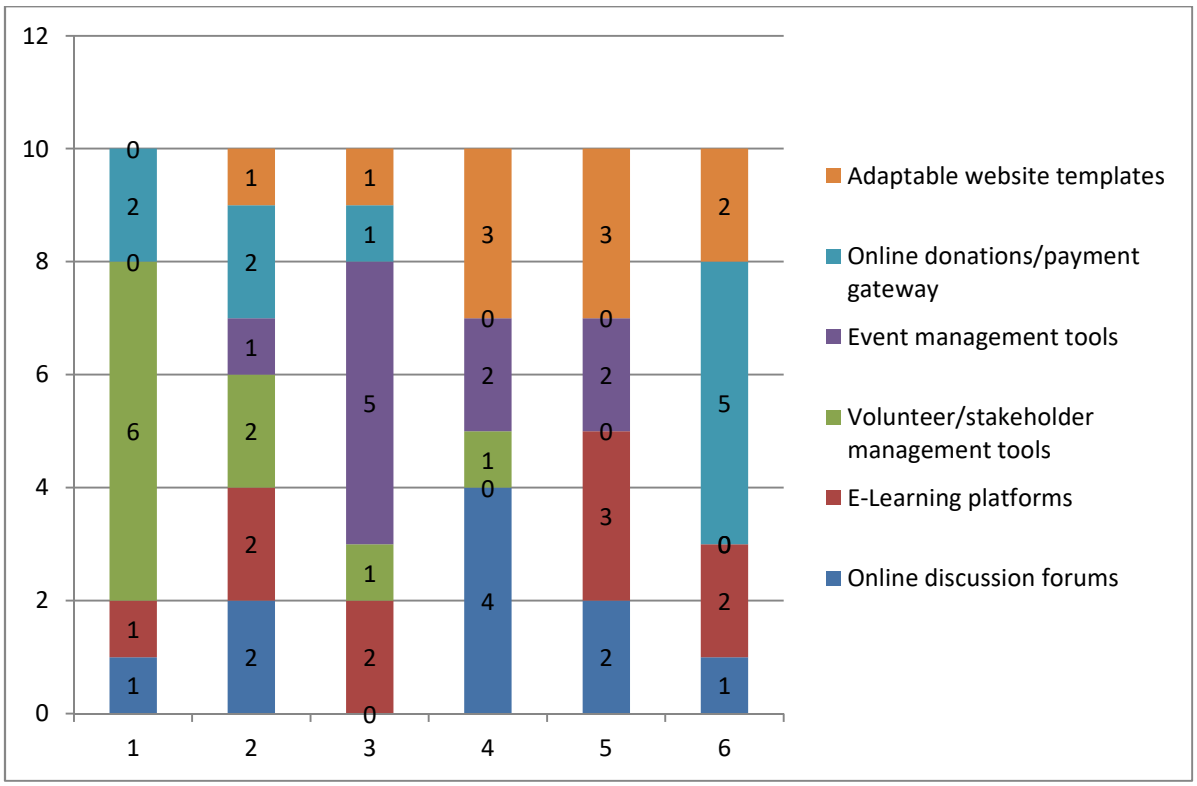

Figure 9: Feature ranking by respondents in organisations with medium IS/IT utilization

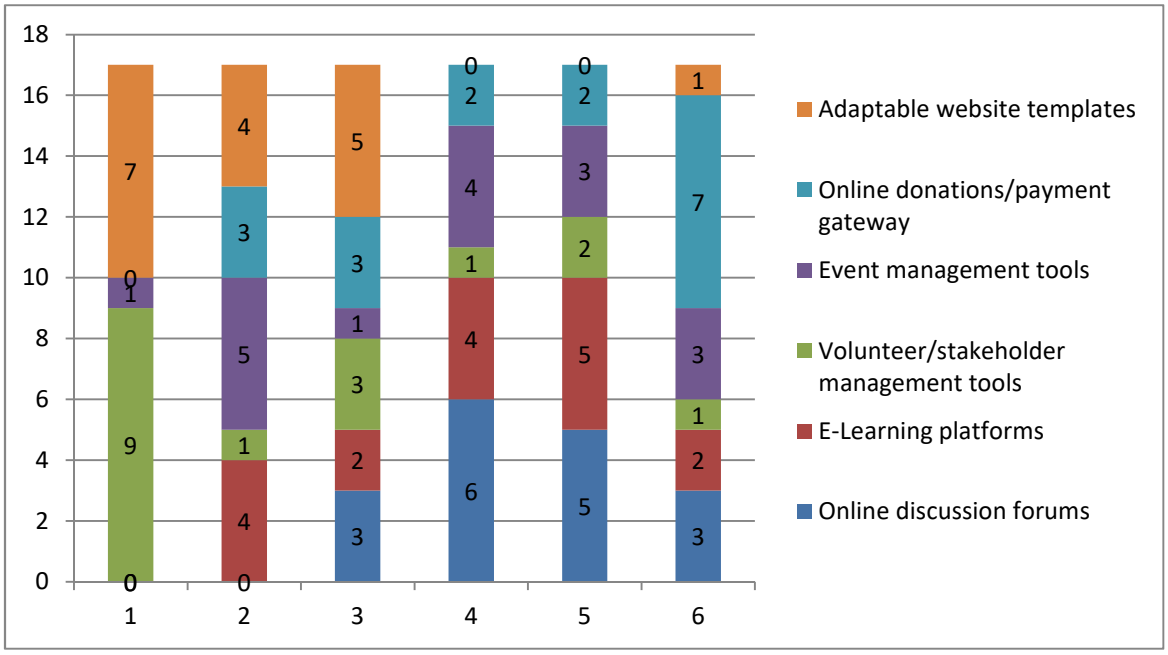

Figure 10: Feature ranking by respondents in organisations with low IS/IT utilization

It is also interesting to note that the highly prioritised website templates of low sophistication organisations (seven respondents), was seen to be lowest priority for respondents from advanced sophistication organisations

Role and Feature priority

Segmenting feature priority results by respondent role, provided a similar result as that of sophistication, with all three role types prioritising volunteer and stakeholder management tools. However it was only respondents in legal roles that prioritised the website tools highly (five respondents) - almost as highly as volunteer and stakeholder management tools (six respondents). Those in management roles ranked volunteer and stakeholder management tools at a much greater rate than the other roles (11 respondents).

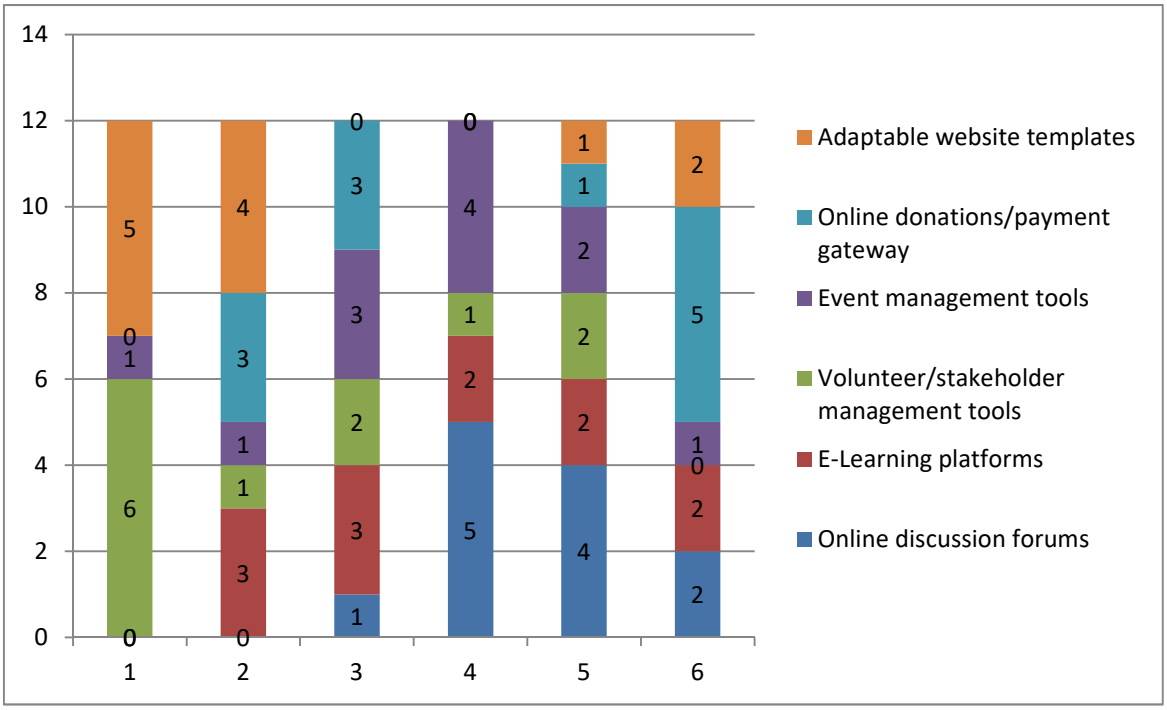

Figure 11: Feature ranking by respondents classified into legal roles

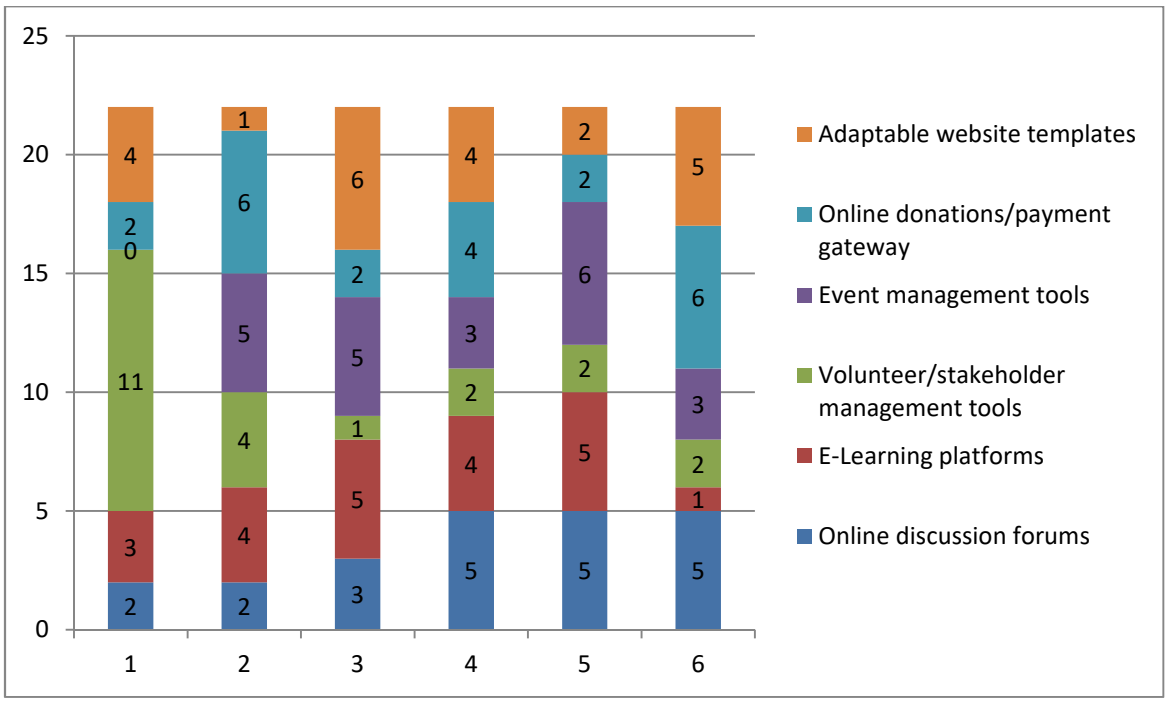

Figure 12: Feature ranking by respondents classified into management roles

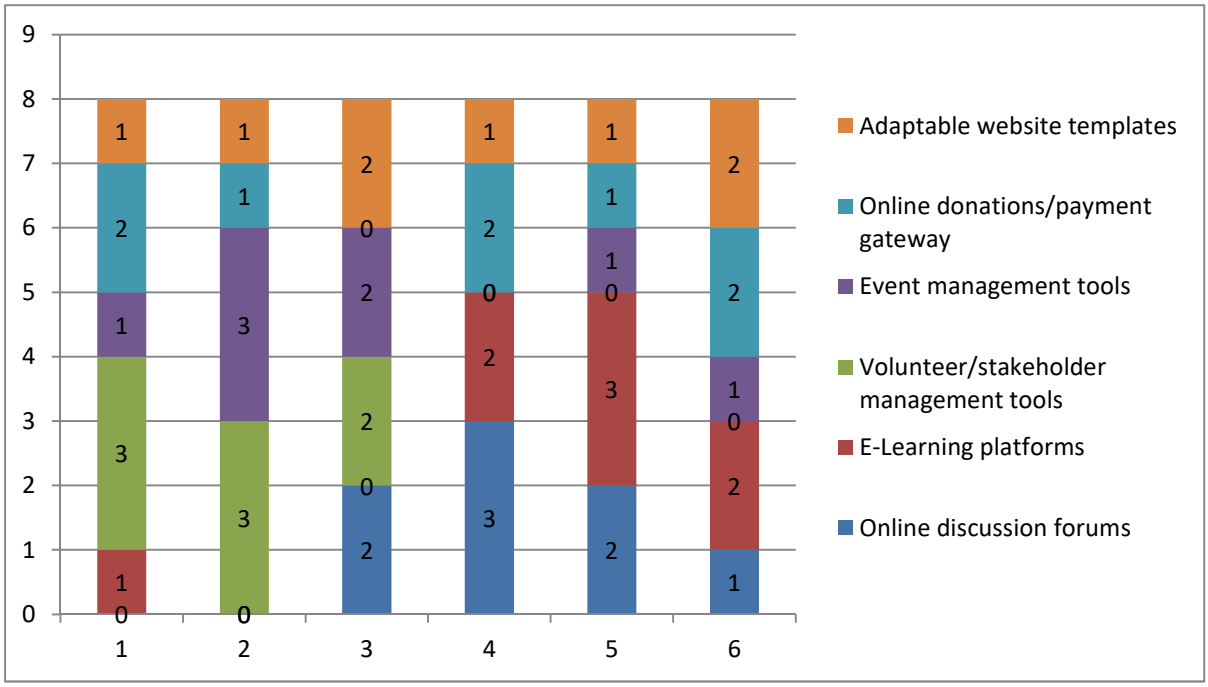

Figure 13: Feature ranking by respondents classified into stakeholder engagement roles

Analysis

Impact of role

Overall 46% of respondents indicated they are either unlikely to engage or can only commit to engagement at a low level; this can be detrimental to the overall feasibility of the project - to have nearly half the sample unable to engage and/or provide feedback on the solution. What potentially results is a system suitable for only half the intended audience. The reason for low engagement can stem from multiple reasons. Resource constraints (time and knowledge), IT literacy (familiarity and ease to use), and prior experience with IT systems which are part of the TAM framework being most likely. However this can only be ascertained with further detailed research.

Considering the different roles in engagement, it was interesting to note that as a ratio respondents in legal roles were more favourable in engaging with the project; only 7.7% indicated they were unlikely to engage. Those in management roles were less likely to engage, with 33% of them indicating engagement would be minimal. Surprisingly respondents in stakeholder engagement - those most likely to benefit, were the most *unlikely* to engage. These results seem counter-intuitive as IT systems are most expected to impact and improve efficiency and capacity for managing communications, and allowing management tasks to be carried out better.

The reason for the lower number of management respondents to be willing to engage cannot be easily explained. It could be due to respondents in management having a better grasp of the resourcing required along with the resources available in the organisation, deciding to provide feedback in that manner, rather than an aversion to the use of technology. This aspect is not explicitly included in TAM3, however it would seem related to 'perception of external control', i.e. perception of availability of resources. If perception is an issue, the system will not only be less suitable for such users due to the lack of feedback, but also be perceived negatively during use which will lead to a failed outcome during evaluation.

Impact of organisational sophistication

There was overall higher interest in engagement from organisations which already have a high level of sophistication; this seems to confirm the idea that respondents who had a positive IT experience were confident to engage in the design of a new system, and are looking to further invest as they are aware of positive outcomes. However organisations with medium levels of sophistication that could be expected to be more interested, were not; this indicates there is some barrier for these organisations to evolve their IT. Such barriers can be broadly theorised to comprise either resource constraints or experience with IT. Resource constraints would mean these organisations have plateaued and are unable to evolve further due to lack of expertise or funding, which also means

they are unlikely to devote further resourcing to projects of this nature. Experience would mean respondents in these organisations have a negative experience with their medium level systems, and are concerned they will have future bad experiences, preventing them from engaging in activities such as this project.

Other findings

Analysis of feature ranking by segment

In addition to the analysis related to the research questions, the available data was analysed to see if feature rankings varied depending on the role of the respondent or the sophistication of the respondent's organisation. In addition to this a comparison of feature ranking each respondent's engagement level, was conducted to identify any additional information of interest.

Job role

Analysing the impact of job role on features, while all users placed volunteer and stakeholder management as a priority, it appears that respondents in management roles placed an even higher priority on this feature. This greater prioritisation of volunteer and stakeholder management is possibly explained by the nature of CLCs: the perception of the importance of communication in campaigning, fund raising and outreach. In resource constrained conditions NPOs, especially CLCs position themselves as effective vehicles of producing greater returns on investment due to being able to leverage volunteer services. Respondents in management roles are more likely aware of the role of volunteers and the value they produce to the organisation, thereby increasing their prioritisation of this feature.

Sophistication

Segmenting the respondent's feature prioritisation by their perception of organisational sophistication, resulted in a fairly even split of 16 advanced IS/IT utilizing organisations, 10 medium IS/IT utilizing organisations and 17 low IS/IT utilizing organisations. There was no apparent difference with regard to which feature was most important; however there was diversity in as much as a few respondents ranked systems with a greater number of features as being important. That is to say, advanced organisation respondents indicated up to six features as rank 1, medium organisation respondents ranked up to 4 features at rank 1, while low organisations noted only 3 features at rank 1. This clearly seems to indicate respondents with lower IS/IT facilities had a clear preference for some features such as websites and volunteer and stakeholder management. As organisations become more sophisticated, the users who responded would be feeling less constrained to prioritise something which is seen as basic, resulting in them prioritising other

features. Stated another way, increased organisational sophistication results in a diversity of IS/IT priorities.

Table 11: Diversity of features at rank 1 against organisational sophistication

Organisation type	Advanced	Medium	Low
Features ranked 1 by at least one respondent (in descending order)	1. Volunteer and stakeholder management tools (5) 2. Adaptable website templates (3) 3. E-learning platforms (3) 4. Online donations payment gateway (2) 5. Event management tools (2) 6. Online discussion forums (1)	1. Volunteer and stakeholder management tools (6) 2. Online donations payment gateway (2) 3. E-learning platforms (1) 4. Online discussion forums (1)	1. Volunteer and stakeholder management tools (9) 2. Adaptable website templates (7) 3. Event management tools (1)

Engagement

Segmenting the priorities by their engagement level did not provide an even split of respondent's feature preferences. There was no additional information obtainable from the analysis, as those highly engaged preferred volunteer and stakeholder management tools, than those with lower engagement – and both of those categories being higher than those unlikely to engage.

Case study 1– NSW CLC sector

The CLCNSW CRM project, funded by *Legal Aid NSW* was based on a report from a state-wide analysis (Table 12) indicating low technology maturity in member organisations. The project was developed as a collaboration between CLCNSW, the *Tenants' Union of NSW* (TUNSW), and the *National Association for Community Legal Centres* (NACLC). The TUNSW is a CLC, which has a dedicated resource team performing in-house design and technical development of IS. Similarly NACLC is the national body with experience deploying a national IS.

The primary reason for low technology maturity related to funding limitations combined with a low priority IT strategy - as is common in NPOs (Giddings and Noone 2004; Guneratne 2018; Schneider 2003). The CLCNSW report obtained its recommendations on the ability of the peak body to use trust relationships to develop needed services. CLCNSW as a peak body had already developed other non-IT services for their membership, and the CRM was to be delivered alongside other strategic IT services.

Table 12: Recommendation for stakeholder engagement from sector wide IT audit (Community Legal Centres NSW 2016)

Client and Stakeholder engagement		
Supporter base	There is a critical and urgent need to find a solution to help CLCs effectively manage their supporters, and expand their supporters and donors.	CLCNSW is required to provide the centre with some recommended options for managing supporters moving forward, as key stakeholders are also a source of funding/donations**.**

Due to previous experience with commercial capture and resulting poor service and outcomes, it was planned to use open source products, or otherwise a system fully owned by the sector through the peak body to avoid repeating previous mistakes. Also part of the plan was to use as much experience as possible from the sector - minimizing external consultant engagement.

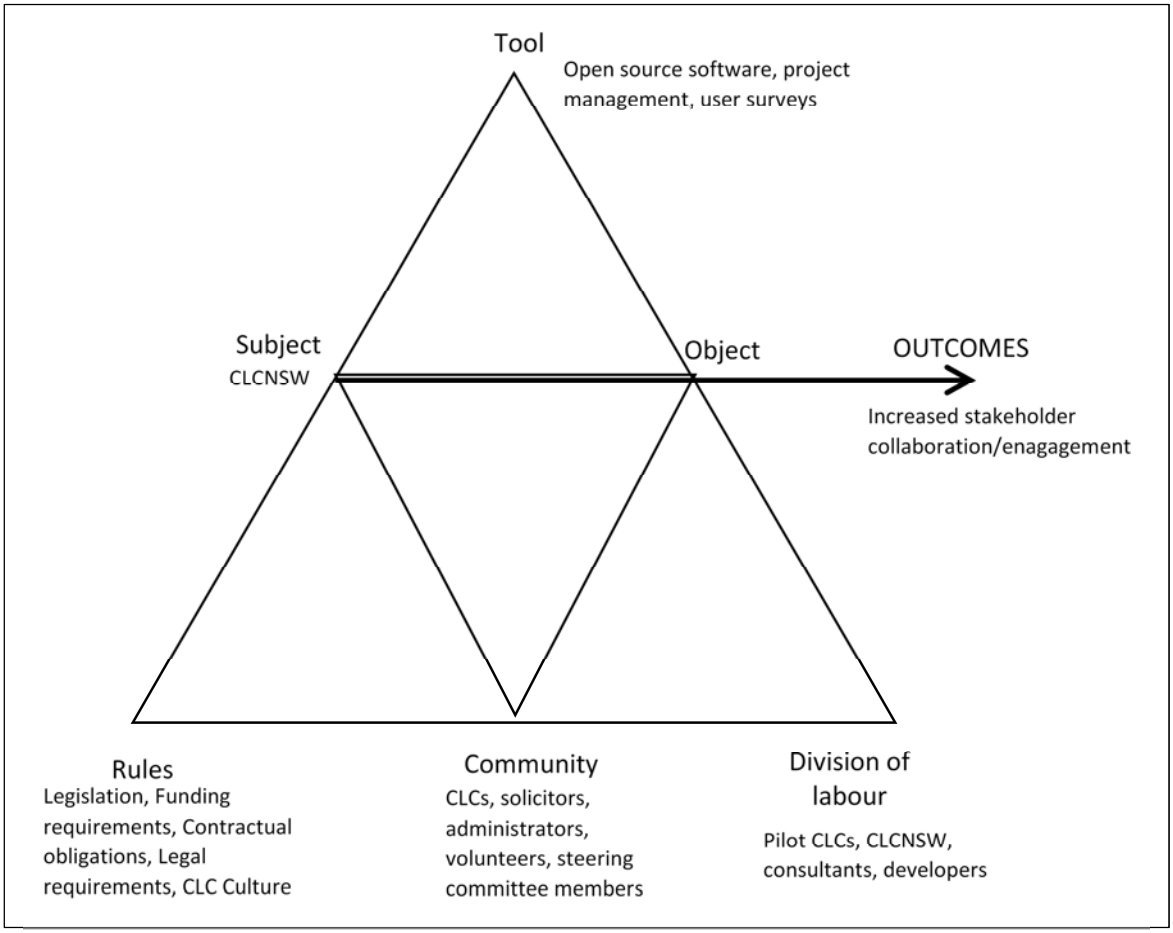

Figure 14: Engeström activity diagram for CRM development collaboration among NSW CLCs

This project also drew national interest with other state peak bodies expressing their willingness to collaborate. This willingness points to a national level requirement of IT/IS, indicating that issues identified in the report in terms of technological maturity, were present in other states.

Case study 2 – Tenants' Advice and Advocacy Program

The *Tenants' Union of NSW* (TUNSW) is a CLC and member of CLCNSW. The former is a resourcing body for the state wide *Tenants' Advice and Advocacy Services* (TAAS). The TAASs' comprise 19 independent agencies tasked with providing tenancy advice to renters. These services are quite different, of varying size and in a resource constrained environment as they have not received a real funding increase in 15 years, despite the 50% increase of clients requiring services during that time.

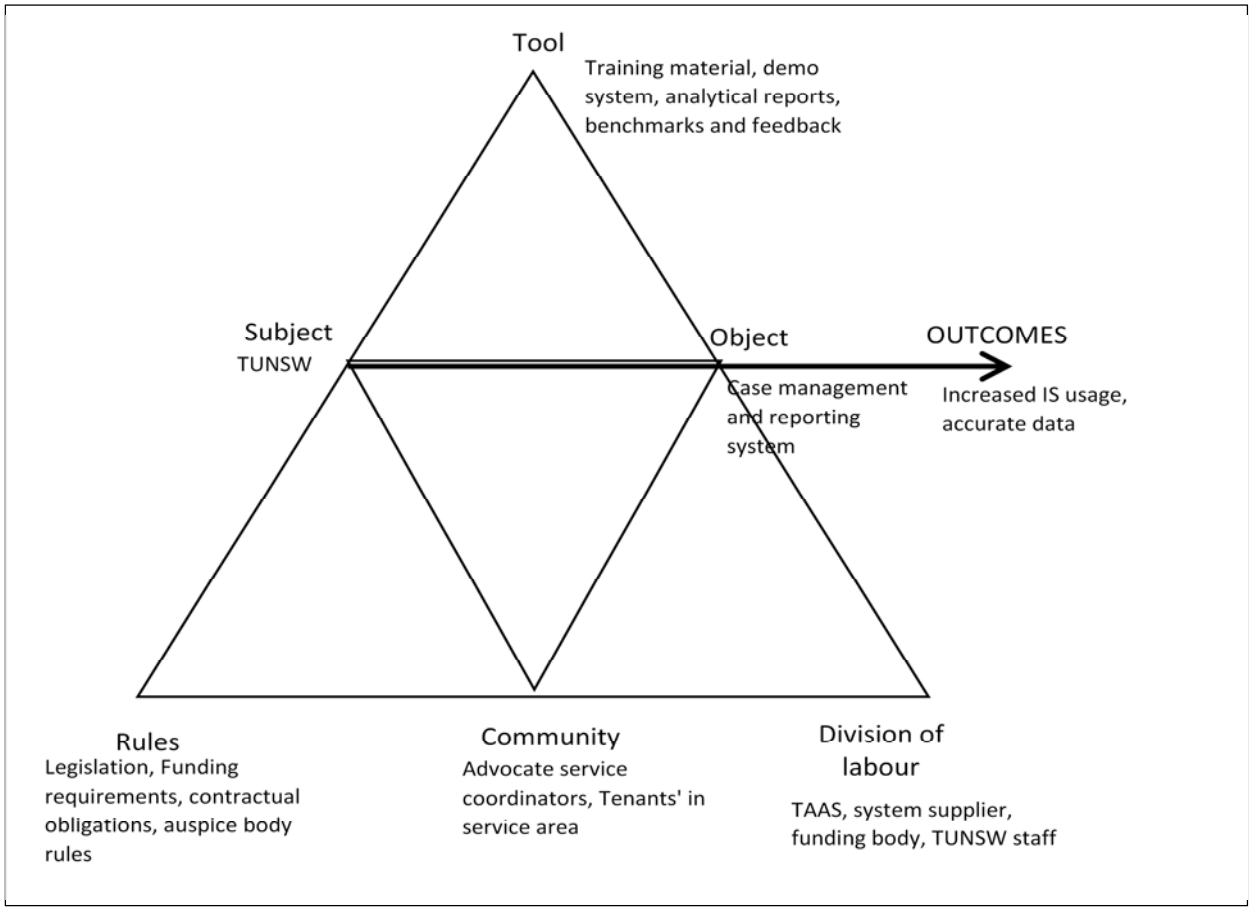

Figure 15: Engeström activity diagram for TAAP network

The TAAS program has been running for an extended period of time while the TUNSW provides IT/IS assistance and resourcing for the agencies. The primary IS made available was the 'TAAP Database' - a network based case management and reporting tool which serviced the agency for managing their clients as well as extracting reports for the programs' funding agency. This IS was replaced after many years of service by a third party IS. This new IS (based on an open source

CRM) was developed with extensive involvement of the TUNSW to facilitate maximum acceptability by the TAASs'.

The TUNSW also manages the knowledge base for the TAASs'. The knowledge base was a bulletin board system which was replaced by a wiki, which in turn was replaced by an online portal containing discussion forums, training resources including online training and event management, among other features.

The TUNSW has a dedicated IT person who oversees strategic use of IT for both the organisation and the TAAS network. Each TAAS is independent and except for the mandatory reporting IS, has the option of selecting or opting into the services offered. Most TAASs' rely on internal knowledge coupled with external consultants, to develop their IT/IS needs; in this context the trust relationship and constant networking has allowed information sharing at very high levels. During the implementation of the new reporting and case management IS, not all services were exploiting it to its optimal level. The networking relationship and constant and widely available training with exemplary use of the data, has allowed reporting and IS use to improve gradually over three years.

Case study analysis

The following table (Table 13) summarises the observations generated in the two case studies. It can be clearly identified there is a significant commonality between the rules and norms within which both groups of organisations in the case studies operate. While not clearly identifiable, there is also commonality in the community as well. Both CLCs and TAASs advise their local communities about state laws and rights. Some TAASs are situated within CLCs.

The analysis supports the existing research and findings of Guo and Acar (2005) who found that for inter-organisational collaboration to arise in the NPO sector, organisations should have frequent government funding, must be mature and have board linkages. However this contradicts their stance that such collaborations do not arise in the social and legal services sector (Guo and Acar (2005). Considering their hypothesis and conclusions on the social and legal services sector were drawn based on how large groups of employees in a single organisation might be unwilling to collaborate with organisations different to them, the CLC sector's relatively small organisation size might be the reason for collaboration to arise.

Table 13: Summary of Activity diagrams for the two case studies

Case study/ Subject	Tools	Object	Rules and Norms	Community	Division of Labour
CLCNSW	Open source software, project management, user surveys	Increased stakeholder interaction, collaboration	Legislation, funding obligation, contractual obligations, legal requirements, CLC culture	CLCs, CLC staff, solicitors, administrators, volunteers, steering committee members	Pilot CLCs, CLCNSW, system consultants, developers,
TUNSW	Training material, demo system, analytical reports, benchmarking and feedback	Reporting and case management system use	Legislation, funding requirements, contractual obligations, auspicing body rules (CLC and other organisations)	Advocates, service coordinators, tenants' in service areas	TAAS, system supplier, funding body, TUNSW

Chapter summary

This chapter presented the findings of which some were surprising - especially relating to the impact of roles. The results uncovered so far now make a case for conducting in-depth interviews to establish the effect of the metrics which could not be considered due to a lack of information. The next chapter is a discussion of the overall thesis, and the limitations and biases present in this research.

5. Discussion

Introduction

The literature identified a lack of IS research into the NPO sector while highlighting the absence of IS evaluation in NPOs, especially research into small NPOs. Also highlighted was a clear and important difference between small NPOs and either large NPOs or other commercial entities which was the focus of existing research. This absence of such research can stem from either a lack of IS implementation in small NPOs or the lack of funding into such areas. Regardless of the reasons behind the absence of research, this topic is important considering the necessity of NPOs in our society. However the contribution of this thesis is only one of many areas needing to be explored to gain a better understanding of IS adoption in NPO.

Intra organisational relationship

Small non-profits tend to have fewer paid staff and often a dedicated base of volunteers. The role of leaders in small NPOs is very important (Berlinger and Te'eni 1999). Even in large organisations the role of managers and leadership in general has proven to be important to the success of IS (Harley et al. 2006; Schweizer and Patzelt 2012).

The project studied is being implemented on a state-wide level among independent organisations. Data was gathered from multiple organisations without paying heed to the structure and relationships of individual organisations. It is necessary to gather detailed organisational and employee level information as well as important volunteer perceptions, to identify specific factors for engagement decisions. The project is now in its' pilot stage in a select few organisations which should be studied to gain such level of detail.

Inter organisational relationships

There are no known studies which study collaborative behaviour among similar organisations when implementing an IS. An activity of this nature appears to be useful in reducing risk and creating resilience (Guneratne 2018). The research did not study variation between organisations and how that variation might affect their decision to participate. CLCs are identified as being specialist and generalist services. Specialist services focus on a specific area of law and tend to cover the entire state in providing services, while generalist services cover multiple areas of law and tend to limit themselves to defined geographical areas. Such variations do create relational complexities with limited forms of competitiveness, which might affect engagement in collaborative projects of this nature.

Strategic service development models

The project was driven by CLCNSW as a peak body attempting to resource its members and is one of several resource sharing models highlighted by NCOSS (NSW Council of Social Services 2008). The research was conducted on IS development in one of 11 identified possible models; while it is noted that some of them are similar, these models create different avenues of research for IS evaluation in small non-profits.

Peak body relationships

The project used for the research was coordinated by a state peak body. Especially when NPOs receive government funding and are older, it is known they are more likely to collaborate (Guo and Acar 2005). The peak body (CLCNSW), may have been able to tap into these relationships when embarking on the project.

- Shared Services within an organisation
- Peak body providing business centres
- Consortium/partnerships models
- Outsourcing to specialist provider
- Co-location and forming a company
- Amalgamation or merger
- Large/small NGO partnership
- Other co-location models
- Group buying schemes
- Management service organisations or shared service centres
- Umbrella organisation (Quasi amalgamation)

Figure 16: Resource sharing models for the community sector (NSW Council of Social Services 2008)

Non-profits receive funding from various other sources in addition to government funding. It is also possible some NPO sectors do not have a coordinating peak body which would fill an equivalent role. Therefore the research needs to expand to encompass other NPO sectors composed of small organisations, to identify other IS development activities in the absence of collaboration.

IS type consideration

This research is based on an IS meant to be a CRM only for internal use, with an opt-in type approach. However organisations in this sector have IS in place for accountability purposes for their funders. There are also instances of different funding bodies requiring data entry and reporting into different systems, creating a negative perception due to the added double-data entry, which increases workload as well as cognitive load to remember different procedures in associated systems.

The presence of IS with no capacity to inter-operate or integrate affects perceptions of an individual's willingness to engage if any new IS appears to add to their workload. These perceptions are likely to vary within an organisation based on a person's work responsibility towards prospective IS.

Legal, policy and contractual obligations

Organisations are bound by legal and contractual obligations - these include stringent data privacy requirements which can drive up compliance costs for any IS being implemented. In addition there is one funder-mandated IS in all the organisations - this IS was developed both as a case management tool and a report generator for the funder.

The author is aware of organisations which have to engage in double data entry to funder reporting tools to enable legal compliance to in turn prevent conflict, such as providing advice to both sides of a dispute. The fact that these systems do not interoperate causes extra work and creates negative perceptions which may affect engagement or enthusiasm.

Research Limitations

The primary limitation previously highlighted lay in the data set provided for analysis. While multiple determinants were available for analysis, the data revealed only a limited set of determinants. In addition the research approach may have generalised some of the information due to data re-classification.

Additional questions raised

In addition to answering the research question, the responses raised some interesting questions outside the scope of the thesis.

Chapter summary

This chapter provided a discussion regarding other factors not considered a part of this research; these factors can serve future research and would be useful to improve the work undertaken.

6. Conclusion

Conclusion

NPOs provide valuable services to society, and using technology will improve such services. Despite their important role, the literature gap showed that IS research into small non-profits is almost non-existent. This thesis attempted to fill a small gap through addressing IS evaluation in small non-profits, focusing on pre-implementation conditions in a collaborative project, asking the following questions:

1. What environmental factors affect project participation and can lead to minimisation of IS adoption failure?
2. What affects participation in a collaborative IS development among NPOs?

As a basis for answering the first question, I theorised that TAM 3 which evaluates technology adoption can be adapted for understanding why an organisation or in this instance organisations, may refrain from participating in IS implementation projects. While multiple determinants were identified from TAM 3, the analysis focused mainly on the perceived usefulness through application to job role, and perceived ease of use measured through the organisation's technological sophistication, both of which are directly affected by existing experience. The data indicates the role or perceived usefulness (H1) does not appear to have a major influence on project participation, though it did indicate staff in management roles were receptive. More importantly the data indicated the IS/IT sophistication level of an organisation or the user's experience of the organisation's sophistication, impacted engagement willingness. This indicates that an organisations existing technological environment (H2) has an impact on user engagement.

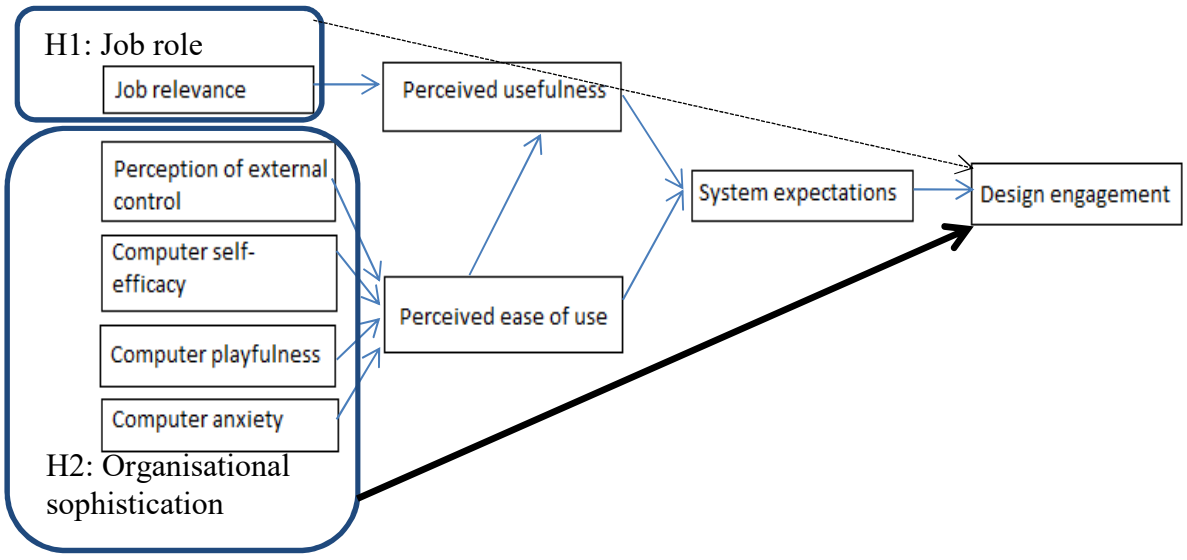

Figure 17: Summary of findings

Figure 17 depicts these findings in the context of how the use of a post implementation model before implementation can assist in identifying organisational environmental factors which can improve overall system acceptance in the implementation stages. In the case of the CLC sector it was established there existed significant reliance on third party consultants to provide basic IT services. The lack of strategic IT servicing, as well as the limited contracts for basic services created an environment detrimental to both perception of external control as defined in TAM 3, and could possibly be creating computer anxiety'; this is the role of experience in IS pre-implementation stage which needs to be managed in order to improve implementation processes, adoption and eventual success. Experience therefore plays a key role in helping improve engagement.

The use of TAM 3, i.e. an adaptation of TAM 2 and its apparent validity in linking an individual's willingness to engage with the system design process, is related to the user's experience and indicates the possibility of using TAM 3, not only as an IS adoption success methodology, but that TAM 3 can be adapted to identify existing factors in an IS implementation environment which points to success or failure of adoption. Identifying such factors can feed into a methodology for formally studying and planning interventions preventing IS failure and even possibly reduce extra costs or forecast costs downstream.

The activity diagrams generated in the case studies identified the communities of the CLCNSW CRM project and the TUNSW resourced TAAP program, as sharing a significant number of rules and norms, while also benefitting from improvements in the goal activity of improving stakeholder engagement and improving reporting statistics respectively. In addition it was known that collaborative projects or shared service use has been a common feature among the CLC sector for a long time. Existing literature identifies likely causes for such collaboration stemming from resource sufficiency and networking. Considering the research subjects, both peak bodies were actively working towards advocating for better resourcing while using the trust relationships cultivated, while also relying on existing relationships. The literature also identified mature organisations, organisations receiving government funding and those possessing board linkages, would be more likely to collaborate. All the factors identified in previous literature were found in the research subject organisations. Therefor these collaboration factors can be used in supplying answers to the second research question.

There were additional findings from the data which are also worthy of notice. The surprising finding that job role - i.e. perceived usefulness, does appear to have an impact on engagement would be worth further studying, considering that PU's value has already been established in countless other studies involving TAM. I would like to propose the theory that this represents a complexity found in small or medium enterprises (SMEs) when a single person is called to fulfil

multiple roles. That is to say if the individuals role is not clearly defined, it will be difficult for them to establish usefulness with respect to all their responsibilities; this in turn magnifies the importance of individual consultation for successful IS development in small organisations.

Another noteworthy finding was an apparent link between organisational sophistication and feature priority diversity. For users working in organisations with lower IS/IT utilization, are likely to consider only fewer basic features as being of higher priority, compared with users from more sophisticated organisations, who consider a wider variety of features as being important. This would indicate as 'computer anxiety' decreases, user confidence in system feature requests increase.

Practical and theoretical contributions

A major practical contribution would be to draw attention to the lack of research in a very valuable area of society, namely the lack of research into IT/IS in small NPOs despite a pressing need. Small NPOs are quite different to large NPOs or businesses, therefore expecting research conducted on large organisations to be universally applicable would be wrong. The research also forces us to reconsider what an IS failure would be; not just projects undertaken and failed to complete or be adopted, but implementations which are not even considered by organisations due to the high risk to organisational survival. NPOs which do not mature digitally fall into this category of failure, despite not even having an IS - and this course of action is detrimental to society.

The research tracked and analysed a project developed collaboratively among a group of small NPOs - an activity which would be useful for mitigating risk, while improving chances of success by using available resources and sharing of developed resources. These activities are strategies which can be used for creating successful IS for small NPOs, while representing a policy recommendation for group resourcing through a peak body or resourcing body for an NPO sector. At an academic level the study of existing resource organisations and peak bodies can reveal a wealth of knowledge helpful in establishing an academic discipline.

Another practical finding was the role of individual user experience in small NPOs for IS/IT success. It provides a reason to invest in better strategies, training and activities helping individuals to perceive IT/IS as a valuable tool aiding in the organisational mission - rather than a mandatory activity detracting from their work due to familiarity problems and implementation issues. This finding is of strategic importance to the studied sector.

Overall the research explored the possibility of adapting a model used as a post-implementation evaluation tool in a pre-implementation stage. While the data available limited exploration, the findings indicate that there certainly is a possibility in doing so thereby creating an area for further theoretical exploration.

Project Future

The project is on-going and is facing a variety of challenges, not in the form of technical complications but rather in environmental factors; the main factor being the original grant ending. A responsive approach is taking place with reduced staffing with the most financially viable project components being completed. The funding situation has caused a slowing down in the overall project resourcing extending timelines. The project presents itself as an interesting source of data for studying many factors applicable to the small NPO sector.

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Appendix A – CLCNSW Data user permission letter of this thesis has been removed as it may contain sensitive/confidential content