Exploring the Use of Web 2.0 Tools to Support Knowledge Sharing Within the Non-Profit Sector

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I certify that this dissertation which I now submit for examination for the award of MSc in Computing (Knowledge Management), is entirely my own work and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the test of my work.

This dissertation was prepared according to the regulations for postgraduate study of the Dublin Institute of Technology and has not been submitted in whole or part for an award in any other Institute or University.

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ABSTRACT

This project will investigate the challenges of knowledge sharing and communication in non-profit organizations with a high dependence on volunteers. Projects of this type typically rely heavily on the knowledge of the volunteers for success and while many projects have some mechanisms through which they communicate and share knowledge such as a web presence, typically the knowledge is disparate, highly tacit, embedded in the people involved. A scattered approach is typical with knowledge and information on several different forums managed by several different people with no obvious connection. There is unlikely to be a cohesive, coherent approach in place to retain volunteer knowledge, facilitate knowledge sharing and make use of valuable knowledge to improve current and future projects.

This project will focus on identifying how such projects store, communicate and facilitate sharing of necessary knowledge between the project and its volunteers and among volunteers themselves, use the knowledge of its volunteers and manage such knowledge to support current and future activities. The project will identify and implement appropriate mechanisms, to enhance the capture and recording of knowledge, the transfer of knowledge from person to person, the exploitation of knowledge and stimulate the generation of new knowledge within the project. A light-weight open-source knowledge sharing and communication tool-kit will be designed and implemented. Particularly, Web 2.0 technologies will be investigated. Existing tools may be leveraged however, tools will be selected to support the types of knowledge identified and communication and sharing mechanisms identified as most effective.

A range of volunteer dependent projects will be used to conduct the required knowledge acquisition and elicitation to identify the knowledge needs of such projects. The processes and toolkit designed will be implemented in a specific project, the desireland project, to test and evaluate their effectiveness.

Key words: *Knowledge sharing, volunteers, Web 2.0 tools, tacit knowledge, knowledge generation, forums, non-profit*

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TABLE OF CONTENTS

TABLE OF FIGURES

TABLE OF TABLES

1.   INTRODUCTION

1.1 Overview of the project area

This dissertation was developed in conjunction with another dissertation, both dissertations addressing the requirements of a non-profit organisation called desireland. This dissertation as previously described is focussed on the internal knowledge sharing and creation and the support of these processes with open source lightweight tools within the organisation. The other dissertation investigates the introduction of light-weight open source tools which encourage volunteerism, user participation, community awareness between stakeholders. A single acquisition was conducted to serve the purposes of both projects. This was possible and effective in that some areas of the acquisition were common to both projects, and other areas were very distinctively pertinent to the knowledge sharing project while other sections were related to the other dissertation. It was less time consuming on both the interviewers and interviewees, and easier on the interviewers to arrange one meeting with the interviewees instead of two separate meetings.

This project will investigate the challenges of knowledge sharing and communication in non-profit organizations with a high dependence on volunteers. Projects of this type typically rely heavily on the knowledge of the volunteers for success and while many projects have some mechanisms through which they communicate and share knowledge such as a web presence, typically the knowledge is disparate, highly tacit, embedded in the minds of the people involved. A scattered approach is typical with knowledge and information on several different forums managed by several different people with no obvious connection. There is unlikely to be a cohesive, coherent approach in place to retain volunteer knowledge, facilitate knowledge sharing and make use of valuable knowledge to improve current and future projects.

The attrition of volunteers has a potentially significant impact in a non-profit organization as the loss of volunteer knowledge can be extremely difficult to replace, New volunteers usually need a period of training within a non-profit organization, the loss of existing knowledge can make the training process more problematic. It's crucial

that such knowledge is retained in the organization preferably explicitly in electronic format, to allow new volunteers to access, share and contribute to the knowledge base.

This project will focus on identifying how such projects store, communicate and facilitate sharing of necessary knowledge between the project and its volunteers and among volunteers themselves, use the knowledge of its volunteers and manage such knowledge to support current and future activities. The project will identify and implement appropriate mechanisms, to enhance the capture and recording of knowledge, the transfer of knowledge from person to person, the exploitation of knowledge and stimulate the generation of new knowledge within the project. A light-weight open-source knowledge sharing and communication tool-kit will be designed and implemented. Particularly, Web 2.0 technologies will be investigated. Existing tools may be leveraged however, tools will be selected to support the types of knowledge identified and communication and sharing mechanisms identified as most effective.

A range of volunteer dependent projects will be used to conduct the required knowledge acquisition and elicitation to identify the knowledge needs of such projects. The processes and toolkit designed will be implemented in a specific project, the desireland project, to test and evaluate their effectiveness.

1.2 Background

This project builds on work completed as part of the Knowledge Acquisition and Modelling module of this MSc programme. An initial knowledge and elicitation was conducted for a volunteer project in partnership with the DIT Students Learning with Communities (SLWC) programme. SLWC promotes and supports community-based learning and community-based research initiatives for mutual benefit. The initial work was completed with the desireland project, a broadly-based community project grounded in "experiments in living systems technologies". It is a citizen-led action-based project located in Dublin 7 and as such is an exercise in social constructivism. This work resulted in the creation of an initial conceptual knowledge model for the desireland project and identification of key challenges and barriers faced by this project in terms of volunteer recruitment and management.

This dissertation project will extend this work, working with a broader range of projects with the focus on investigating need, challenges and barriers to knowledge sharing in non-profit, volunteer dependent projects and designing a toolkit to support knowledge sharing in these projects. This will again be conducted in partnership with the SLWC.

A generic set of mechanism and a generic tool-kit will be designed to fit the needs identified by this group of projects. These mechanisms and tool-kit will be tuned to the specific needs of volunteers within the desireland project, and will be deployed and tested in this environment.

The desireland project offers a very appropriate test bed for this project. desireland is a community based project and therefore volunteers and participation are core elements of the project essential not only to ensure its survival and continuation but to its effectiveness as a project. The core issue is that the majority of the active desireland knowledge-base is tacit. Of approximately 50 individuals involved with the project, the primary driver and knowledge source is the project founder. If for any reason the project co-ordinator is unavailable, all project progress slows. There is a definite need to capture the founder's vision and how it is comprised, in order that the Project may progress in her absence. Similarly there is an issue with how people interact and participate with the project in any formal codified manner. There is no formal mode of interaction or scheduling of participation. Rather activities and interactions appear to be in an *ad hoc*, unrecorded but creative manner. The situation as described is a classic Knowledge Management issue – how may tacit knowledge be converted into explicit knowledge.

1.3 Research problem

This project will investigate the challenges of knowledge sharing and communication in non-profit organizations with a high dependence on volunteers.
Emphasis will be on sharing of internal knowledge and retention of knowledge when volunteers leave. This project aims to codify and externalize existing tacit knowledge.
 Focus will also be on collating, storage, categorization and making accessible existing knowledge within the organization for existing volunteers, potential volunteers, stakeholders and donors.

Mechanisms will be investigated to facilitate user participation and sharing within the non-profit organization. Focus will also be on making the organization and its projects visible, ensure it has a strong on-line presence and have the ability to attract and retain volunteers. The project will identify and implement appropriate mechanisms, to enhance the capture and recording of knowledge, the transfer of knowledge from person to person, the exploitation of knowledge and stimulate the generation of new knowledge within the project.

A light-weight open source toolkit will be investigated to support these processes and in particular Web 2.0 technologies will be explored.

A range of volunteer dependent projects were used to conduct the required knowledge acquisition and elicitation to identify the knowledge needs of such projects. The processes and toolkit designed were implemented in a specific project, the desireland project, to test and evaluate their effectiveness.

While the system will be tested and used in this environment, it will be capable of being implemented and used for any community group with limited technical knowledge. Knowledge acquisition will be used as a key tool to carry out research into similar projects in the area. The main area of focus will be around knowledge sharing between volunteers, volunteers and projects, between projects and retention of knowledge when a volunteer leaves. Communicating knowledge to the proposed volunteers, and providing a forum for feedback and knowledge sharing about projects will be highlighted.

1.4 Research objectives

The following objectives have been achieved throughout the dissertation and contributed to the overall outcome:

1. Conduct an academic literature review of the Knowledge Management domain (breadth) and in particular of knowledge sharing (depth) to inform the design of the elicitation and acquisition, and to identify mechanisms, tools and techniques to promote and support knowledge sharing with particular focus on resource limited, non-profit organisations.

2. Conduct an academic literature review to identify the potential of Open Source tools, in particular Web 2.0, to support knowledge sharing.

3. Conduct a knowledge elicitation and acquisition exercise with a range of volunteer dependent organisations to investigate knowledge sharing within the non-profit area, with focus on knowledge sharing and retention internally within projects, tools currently in use, and requirements for tool-support.

4. Develop a set of knowledge sharing mechanisms to support knowledge sharing in volunteer organisations with particular emphasis on knowledge sharing and creation between volunteers, within projects, between volunteers and projects and retention of knowledge when a volunteer leaves.

5. Develop a Web 2.0 open source web generic toolset to address the knowledge sharing mechanisms as identified in 4, and to address the identified requirements suitable for the level of users involved, with supporting materials, ensuring that the tools are easy to learn and use, and are perceived to be useful which can be used by a range of volunteer communities.

6. Evaluate the effectiveness of the mechanisms and tool-kit developed by deploying and testing them in a specific volunteer community - The desireland project. Measurement will be achieved by qualitative and quantitative measures using appropriate quantitative and qualitative tools.

7. Assess and evaluate the outcomes of this project within the partner groups used, the broader volunteer sector, and with respect to existing literature.

1.5 Research methodology

Both primary and secondary research was conducted during this project.

The secondary research involved performing a literary review to compare with case studies of best practice and to assist with meeting of the project objectives.

The areas covered in the literature review were:

- Knowledge – what is Knowledge?
- Knowledge Sharing
- Knowledge Management in non-profit organisations
- Web 2.0
- Web 2.0 and KM
- Web 2.0 in non-profits

Various different sources were used to complete the literature review, which include the following:

• Journals

• White Papers

• Conference proceedings

• Books

• Organisational websites

Both quantitative and qualitative research methodologies were employed during this research. Knowledge acquisition was a key tool in this process. This method was selected to offset the weakness of individual approaches and to provide more comprehensive answers to research questions going beyond the limitations of a single approach. A broad acquisition was conducted initially with a number of selected partners, followed by a more specific elicitation with a sub-set of these. These organisations were carefully chosen as a broad representation of non-profit organisations in Ireland.

Initially knowledge acquisition questionnaires were distributed to these organisations, focussing on internal knowledge sharing and retention of knowledge when a volunteer leaves. The questionnaire focussed on questions relating to current practices for knowledge creation and sharing, identification of gaps in this process, identifying of areas where knowledge sharing solutions can be identified.

Questions were also focussed on barriers, challenges and enablers to knowledge sharing investigating culture, structure and current knowledge sharing processes and tools.

Semi-structured interviews were conducted with a small number of organisations to validate and expand on the information acquired during the questionnaire process.

This type of interview was chosen as opposed to the structured interview. The structured interview is very formal and as the questions are set by the interviewee, important questions may be omitted. It is proposed to conduct these interviews with representatives from a number of volunteering organisations with a view to obtaining a more in-depth view of the volunteering sector and their knowledge management issues. Consequently semi structured interviews were used in preference to structured or unstructured interviews, for gathering information from key persons. This is

because it is important that those being interviewed are able to expand upon their expertise and experience, rather than being confined by very specific questions. As part of the semi structured interviews additional questions were to probe the interviewee for more detail, for specific answers, or to allow them to elaborate or expand on specific issues.

All of the interviews were transcribed and text analysis software was used to enable the interviewer to analyse specific texts or groups of texts and, among other things, determine the frequency with which words or phrases are used, view words in context, study patterns in texts, create text matrices and compare different documents with regard to text, views and concepts contained therein. The use of text analysis software was useful to compare all interview transcripts and enable evaluation of any contrasting perspectives for all interviewees. An analysis of all interview transcripts has added to the quality and depth of the insights provided by the interviewees about the volunteering projects.

- Coded and analysed thematic comparisons between project conceptual model, presented back to groups for refinement
- Results from experiment- usage of system (quantitative) and interview results (qualitative)
- One to one interviews on usage of system
- Follow up surveys
- Usage of tools (metrics)

1.6 Resources

Technical:
- Personal Laptop
- Internet Connection
- Microsoft Word
- Back Up External Hard Drive
- Olympus Voice Recorder/iPhone 4 as backup
- Google Docs (for survey implementation)
- Express Dictate - NCH Software (for transcribing interviews)
- MAXQDA text analysis software

- Open source software (Web 2.0)
    - WordPress and numerous Plugins (for experiment)
- Email and Skype for communication both with Project partner and Project supervisor,

Non Technical:
- Library
- Survey candidates
- Interview candidates
- Partner Organisations
- Experiment subjects
- Project supervisor guidance

1.7 Scope and limitations

The aim of this research was not to be exhaustive, but to be a snapshot of knowledge sharing and communication in the non-profit sector. A range of volunteer dependent projects were used to conduct the required knowledge acquisition and elicitation to identify the knowledge needs of such projects.

These volunteer dependent projects ranged in size, social missions and background. The non-profit with the largest amount of volunteers in Ireland (approx 9,500) was included as was also a non-profit with only 50 volunteers. Their social missions range from caring for the elderly, relief of poverty and assistance to underprivileged and facets of urban regeneration and healthcare design. One of the partner organizations receives 65% of their funding from the government, while one of the organizations receives no formal funding at all.

All of the non profits have one common goal – to help the less privileged and thereby contribute   to   society.
The results of the knowledge acquisition and elicitation were used to inform the design of the open source toolkit. This dissertation was conducted in conjunction with another dissertation as referred to in 1.1. A single acquisition was conducted to serve the purposes of both projects. This was both possible and effective as there was some overlap in the information requirements for both projects. Areas of overlap included the face sheet information i.e. organizational background, IT use and social media.

Each interviewer focused on the section of the acquisition that was relevant to their individual project. In the case of this project, along with the face sheet, funding, IT and social media use, the other sections relevant were Information Management, Knowledge Sharing, Formal Handover and Lapsed Volunteers.The processes and toolkit designed were implemented in a specific project, the desireland project, to test and evaluate their effectiveness.

While the system was tested and used in this environment, it will be capable of being implemented and used for any community group with limited technical knowledge. Thorough research was carried out into similar projects in the area. The main area of focus was around knowledge sharing between volunteers, volunteers and projects, between projects and retention of knowledge when a volunteer leaves. Communicating knowledge to the proposed volunteers, and providing a forum for feedback and knowledge sharing about projects was highlighted along with volunteer track. The research indicated that most partner organisations did not have any platform for knowledge sharing among its users, and all respondents indicated that they thought it would be a useful tool for their organisation.

"Interviewer 1: Do you think the volunteers are happy with knowledge sharing practices at the moment?

Respondent C: No.

Interviewer 1: They would be interested in improving it in some way.

Respondent C: Absolutely. That's a real challenge too because volunteers fill out their quarterly reports and then it goes to the programme office and they don't hear."

The experiment ran over a three week period, and while initial results and feedback were encouraging, it is difficult to gain an accurate assessment over this limited time.

1.8 Organisation of the dissertation

This dissertation is divided into seven chapters and is organised as follows:

- Chapter 2 - Knowledge Management in non-profit organisations

  The concept of Knowledge and Knowledge Management is introduced, followed by an introduction to knowledge sharing; Knowledge sharing in the non-profit sector will be discussed in detail.

- Chapter 3 – Web 2.0

  Web 2.0 and its principles will be discussed in detail, followed by a discussion on Web 2.0 tools and systems used to support knowledge sharing in the non-profit sector.

- Chapter 4 – Knowledge Acquisition

  The design of the experiment is described, beginning with the design of the survey, who was targeted and how it was executed, followed by the design of the interviews and the execution of these. The purpose of each question and what it was trying to address will be discussed. The survey findings and results and analysis from the subsequent interviews informed the experiment, which addresses knowledge sharing in non-profit organisations.

- Chapter 5 – Design and implementation of toolkit

  The background to the desireland project will be discussed in more detail, the relationship of the knowledge acquisition and elicitation artefacts to the experiment design will be discussed, and the experiment artefact and its implementation will be described.

- Chapter 6 – Evaluation

User feedback - one to one interviews on usage of system

Follow up surveys

Usage of tools (metrics) of project sponsor and participants

Discussion on how effective the implementation addressed the needs identified in the survey and subsequent interviews

- Chapter 7 – Conclusions

This chapter will summarise the project, and discuss possible future work and research in this area.

2. KNOWLEDGE MANAGEMENT IN NON-PROFIT ORGANISATIONS

2.1 Introduction

This chapter will address the key issues surrounding knowledge, knowledge management, and knowledge sharing in the non-profit sector. They will be discussed in relation to organisational culture and structure and comparisons will be drawn with the profit sector. The importance of knowledge sharing particularly within the non-profit sector will be discussed with focus on the key challenges and barriers to knowledge sharing within this sector.

2.2 What is Knowledge?

Davenport and Prusak (1997) define knowledge as a fluid mix of experiences, values, contextual information and insight that provides a framework for evaluating and incorporating new experiences and information.

Japanese management expert Ikujiro Nonaka, published a series of articles and books in relation to knowledge management (Nonaka, 1991; Nonaka, 1994) in which the 'knowledge creation process' was described as an iterative cycle, known as the 'spiral of knowledge'. In the spiral, Nonaka describes two main types of knowledge – tacit and explicit. Tacit knowledge which is knowledge embedded in people minds and explicit knowledge - knowledge codified in books, documents, reports, training courses, etc. Tacit knowledge can be described as elusive, as it exists only in peoples' minds. It can be difficult to extract and articulate. Sometimes people are unaware that they even possess the knowledge and in fact people nearly always have far more tacit knowledge than they realise.

The Spiral of Knowledge process helps us understand how knowledge is transformed or converted from one knowledge category to another, how knowledge is shared how knowledge may be acquired, created, improved or expanded.

"The key to knowledge creation lies in the mobilisation and conversion of tacit knowledge."(Nonaka and Takeuchi, 2005)
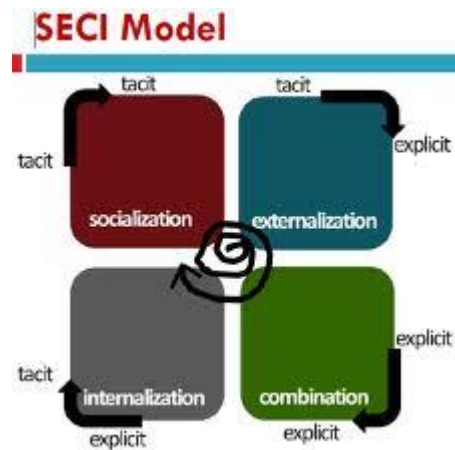
Figure 1 (2.1) Spiral of Knowledge creation

By Nonaka and Takeuchi (1995) taken from

"The Knowledge Creating Company: How Japanese Companies Create the

Dynamics of Innovation"(1995)

In Nonaka's spiral of knowledge, tacit knowledge can be exchanged and shared between individuals during interpersonal communications – (the socialisation process) and subsequently the tacit knowledge is converted to explicit knowledge through the use of metaphors, analogies, diagrams, figures, stories etc (the externalisation process). Explicit knowledge can be evaluated, analysed, enhanced, criticized and combined with other knowledge – (the combination process) to simulate new insights and ideas - i.e. to create new knowledge. Finally, explicit knowledge can be converted back into tacit knowledge (the internalisation process) through learning and experience for the process to begin again.

Nonaka's S-E-C-I model proved to be quite successful, it had a very significant influence of the field of Knowledge Management, but it was not however without is criticisms. Those involved in the more philosophical aspects of knowledge such as Gourlay (2006) felt it was too limited in scope to be philosophically satisfactory. Nevertheless *"Despite these criticisms, Nonaka's model had the advantage of suggesting practical ways of addressing knowledge that could be of real benefit to working businesses."* (Thompson, J, 2010). In contrast to this Polyani's assertions satisfied the philosophical criteria, but were found not to have any real practical application.

2.3 Knowledge Management

John Thompson (2010) says that KM aspirationally may be said to hope to enhance the recording of existing knowledge, enable the transfer of existing knowledge from person to person, facilitate the exploitation of existing knowledge, and to stimulate the creation of new knowledge.

According to Huck et al. (2011) KM facilitates the sharing of tacit and explicit knowledge between individuals and across organizations to meet organizational knowledge needs

KM embraces any practices, cultures, processes, mechanisms, techniques and technologies espoused by related disciplines that might assist with any tasks that have a knowledge element and can deliver potential commercial advantages. (Thompson, J, 2010)

KM is about making the right knowledge available to the right people. It is about making sure that an organization can learn, and that it will be able to retrieve and use its knowledge assets in current applications as they are needed. In the words of Peter Drucker it is "the coordination and exploitation of organizational knowledge resources, in order to create benefit and competitive advantage" (Drucker, 1999).

According to WIIG (1997) *"the objectives of knowledge management (KM) are: To make the enterprise act as intelligently as possible to secure its viability and overall success and to otherwise realize the best value of its knowledge assets."*

Knowledge Management has its origins in the economic slump that affected American manufacturing in the late 1980's and early 1990's. (Thompson, J, 2010) At this time there was widespread concern that American companies were increasingly unable to compete with foreign competitors, not just on price but on quality also. This was particularly notable with respect to the success at the time of Japanese electrical and mechanical goods in penetrating American and European markets. Business managers and strategists began investigating the reasons why traditional working methods were hampering success and they began to explore the role that knowledge and knowledge processes could play. The first introduction of KM to business management was by Peter Senge's book in 1990 called 'The Fifth Discipline'. His book defined learning organisation' as an organisation that emphasises learning by promoting the exchange, use and creation of knowledge, and where "people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are

nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together". (Senge, P,1990). This is essentially an organisation in which KM is a primary activity.

"*Knowledge is a critical factor affecting an organization's ability to remain competitive in the new global marketplace. Organizations therefore need to recognize it as a valuable resource and develop a mechanism for tapping into the collective intelligence and skills of employees in order to create a greater organizational knowledge base. Knowledge management accomplishes this goal.*"(Bollinger and Smith,2001)

2.3.1 Why is Knowledge Management necessary?

- Organisations don't know what they already know; knowledge in the organisation is not visible. Organisations can often waste time and money in rediscovering knowledge that they already knew.

- Employees don't know what their colleagues know; knowledge is not shared rapidly within the organisation. There may be a localisation of expertise; this may result in competitors innovating at a faster rate.

- Knowledgeable employees leave the organisation or retire; the impact of this can be grave on the organisation. Critical expertise built up over years is lost overnight .Expertise may move to competitors without being retained within the organisation, Key customer relationships may be affected and overall organisational knowledge is reduced, hence tacit knowledge walks out the door and will not return.

- Employees closely guard their individual knowledge

- Organisational knowledge is unreliable or out of date, the ways and means of keeping knowledge up to date are not available or not being used.

- Organisational functional barriers prevent the rapid innovation of new products/services, The ways and means of multidiscipline collaboration are not available, there is no collaboration on the design of products or services. Incorrect assumptions can be made; time and money can be wasted.

- The organisation is slow to respond to changes in the market and is unable to use organisational knowledge to anticipate market trends; this can lead to loss of business, loss of customer confidence and loss of competitor advantage.

2.3.2 What is good KM?

Good Knowledge Management strives to achieve the following

- Makes organisational knowledge visible no matter where it is
- Provides access to an organisation's collective expertise
  Anywhere in the organisation
- Retains the organisation's knowledge in times of change
- Exploits knowledge as an organisational asset
- Helps to ensure that knowledge is up to date and relevant
- Helps the organisation to do the "right" thing
- Embeds knowledge in the organisation's processes
- Assists the survival of the organisation

2.3.3 Typical KM systems and what they are used for?

Knowledge management is essentially about people, processes and technology.
It is mainly about people and capturing, organising and maintain the tacit knowledge that these people possess. Bhatt (2001) argues it is, rather, the interaction between technology, techniques, and people that allow an organization to manage its knowledge effectively. By creating a nurturing and 'learning-by-doing" kind of environment, an organization can sustain its competitive advantages.

"IT, at best, can be used as an enabler to turn data into information. It is only through people, that information is interpreted and turned into knowledge." (Bhat, 20031

It is achieved through five main processes, capturing knowledge, organising knowledge, target knowledge, transfer knowledge and maintaining the captured knowledge (Awad and Ghaziri 2004). KM is about making an organisations knowledge visible and accessible.

It is about capturing and codifying tacit knowledge of employees, which is very important if any employee leaves the organisation or retires. Tacit knowledge is information that employees have in their heads, it can be described as common senses, rules of thumb, heuristics etc. Explicit knowledge also needs to be properly captured, organised and maintained. It is also beneficial for new staff to be able to access the codified tacit knowledge and the organised, maintained explicit knowledge. Information technology is used to support KM systems. There is huge diversity in the

types of system or application considered under the banner of KM. Some of the most common forms as discussed in KM literature are as follows:

- Communities of Practice - for sharing and developing knowledge.
  "*Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly*." (Wenger, 2006)
  A community of practice is a group of stakeholders who share a common interest in a specific area of competence, and are willing to work together. They are not a formal team or workgroup, normally "volunteers" and may often involve who are people geographically dispersed and cross organisational, may often includes internal and external people, and while they have scope, they have no formal outputs. CoP's may operate in the following way:
    - Poses and answers questions
    - Discusses best practices
    - Solves problems that arise in day to day work
    - Explores new insights
    - may initiate new knowledge creation
    - Communicates and shares using various technologies (mail, chat, on-line forums/blogs, etc.)

- 'Knowledge Repository' for making explicit knowledge visible and accessible. The technology behind these initiatives may range from a large corporate intranet in the profit sector to a small on-line forum or blog in the voluntary sector. A knowledge repository is a place where explicit knowledge (knowledge content) is held. Knowledge content is accessible by everyone who is authorised to access it, there may be varying access rights. Knowledge content can be presented in a form that can be understood by the majority of users. Users are generally active in setting up and maintaining knowledge content and keeping up to date and relevant.

- Knowledge Yellow pages lists the sources of tacit knowledge, internal and external to the organisation , in essence, a directory of people with specific tacit knowledge classified or structured by "knowledge area". A "knowledge area" is something that is important to an organisation's business. The yellow pages

does not contain knowledge itself but rather points to individuals who have tacit knowledge.

Employees often hoard knowledge, they believe knowledge is power. Employees sometimes don't know what they know or what their colleagues know. This can lead to duplication of knowledge as in creation of knowledge that already exists in the organisation, but no one is aware of it. Knowledge Management is about capturing, organising and maintaining this knowledge and making it visible and shareable among an organisations employees, to contribute to the performance of the organisation as a whole and by treating knowledge as a very valuable asset, thereby increasing the organisations competitive advantage in the market place.

Both information and knowledge are grounded on data. The two can be differentiated if one considers interpretation and meaning. Information by definition is informative and, therefore, tells us something. It is data from which meaning can be derived. Knowledge is directly related to understanding and is gained through the interpretation of information. Knowledge enables one to interpret information i.e. derive meaning from data. The interpretation of meaning is framed by the perceiver's knowledge. So what one person perceives as information can equate to meaningless data to another.

So information that is interpreted generates meaning and new knowledge. Thus, information can be added to knowledge to increase what is known. It is also valid to state that knowledge comes before both information and data since one needs to know the context of data before it can be interpreted as information. Hence it can be seen that knowledge is subjective and can only reside within the mind of the individual. So what do we mean by sharing knowledge, if knowledge cannot exist outside the individual?

2.4 Knowledge Sharing

According to Davenport and Prusak (1998) knowledge is increasingly been seen as the most important strategic asset in organisations and a crucial resource to achieve sustainable competitive advantage. As a significant amount of organisational knowledge is in the minds of the employees, it is important for organisations to determine what motivate employees/volunteers to share knowledge, and what constitutes barriers to sharing knowledge.

*"Sharing is a process whereby a resource is given by one party and received by another. For sharing to occur, there must be an exchange; a resource must pass between source and recipient. The term knowledge sharing implies the giving and receiving of information framed within a context by the knowledge of the source. What is received is the information framed by the knowledge of the recipient. Although based on the knowledge of the source, the knowledge received cannot be identical as the process of interpretation is subjective and is framed by our existing knowledge and our identity "(*Miller, 2002).

By definition, an information system shares information. So then what is the difference between information-sharing and knowledge-sharing? The sharing of information covers a broad spectrum of exchanges and does not necessarily lead to the creation of new knowledge (Van Beveren, 2002). Knowledge-sharing intrinsically implies the generation of knowledge in the recipient.

There are many approaches to knowledge sharing. Knowledge sharing within the business sector can take the form of meetings, brainstorming sessions, and the use of knowledge yellow pages (listing employees and their knowledge specialist area) and technology based platforms such as intranets, forums, wiki's and blogs, and internal communities of practice. CoPs have been described as "groups of people informally bound together by shared expertise and passion for a joint enterprise"(Wenger & Snyder 2000). They differ from teams or functional units as they are self-organising and their lifespan is determined by its members. Such communities are not constrained by time and space and therefore can span organisational boundaries (Wenger 1998). CoP's are very relevant to the not for profit, highly dependent on volunteer organisations, as by their very nature volunteers are coming together to contribute" their shared expertise and passion" for a common goal.

When discussing knowledge sharing it is important to understand what exactly is being shared. An understanding of knowledge is key. There are two main types of knowledge- Tacit knowledge which is Knowledge embedded in people minds and Explicit knowledge - Knowledge codified in books, documents, reports, training courses, etc. as discussed in the previous section and referred to previously by Nonaka (Figure1(2.1) Knowledge spiral in 1995)

A knowledge-friendly organizational culture is one of the most important conditions leading to the success of KM initiatives in organizations (Davenport & Prusak, 1998). A seismic cultural change is sometimes necessary for the introduction of KM processes, as traditionally organizations usually reward employees for individual performances. Specifically, cultural barriers to KM (e.g., cultural norms that promote and encourage knowledge hoarding) must be replaced by an organizational culture that promotes and encourages knowledge sharing. It is important that the new culture promote attitudes and behaviors that encourage, allow, and reward sharing of knowledge and insights. An employee must not perceive that his or her value to the organization is worth more if important knowledge is withheld i.e., knowledge hoarding. (Hurley et al., 2005).

Organisational structure can either enhance or prevent knowledge sharing. Organisations with a centralized bureaucratic management style can stifle the creation of new knowledge, whereas a flexible decentralized organizational structure encourages knowledge sharing, particularly knowledge that is more tacit in nature. (Sharratt and Usoro, 2003). It is argued that the flatter that organizations with a less hierarchical structure may benefit from increased levels of knowledge sharing.

Technology can be both an enhancer and an inhibitor to knowledge sharing. McDermott (1999) argues that technology can inspire knowledge management and sharing but cannot deliver it. While traditional technologies can facilitate knowledge collaboration and transfer of knowledge, they are limited in their ability to transfer knowledge that is more tacit in nature (Hildreth and Kimble, 2002). For technology to be an enhancer to knowledge sharing the technology itself must be easy to use, and there must be a perception that outcome of using the technology is useful in itself. In order for technology to be successful within a knowledge sharing system, it must be seen to be used by many. Knowledge attracts knowledge! Knowledge sharing systems must be easy to use, and participation must be encouraged by the perceived value and benefit of the content, which in turn will encourage further participation. This builds on O'Reilly's (2005) principle of active participation of users.

"The greater the use of a knowledge sharing system, the greater one's use of the systems for knowledge sharing" and *"the greater the perceived usefulness of the knowledge-sharing system the greater a user's participation in knowledge sharing"*. (Sharrat and Usaro, 2003)

As knowledge resides within individuals, they must be encouraged and motivated to share their tacit knowledge. It is argued that some incentive may be necessary to encourage the sharing of knowledge. These may be extrinsic as in financial rewards or intrinsic as in if an employee feels that he is well supported by an organization they tend to be more willing to participate in an organizations knowledge sharing initiatives.

A study by Dell and Grayson (1998, cited by Sharratt and Usoro 2003) argues that if the "*process of sharing and transfer is not inherently rewarding, celebrated and supported by the culture, then artificial rewards won't have much effect*".

Hertzberg (2003) in his Hygiene and Motivation theory found that although extrinsic factors such as financial rewards and other external factors are important to avoid unpleasantness at work, they are not necessarily motivating. He argues that that motivational factors are based on an in individuals need for personal growth, and that motivating factors can create job satisfaction and can encourage an individual to achieve above average performance. Herzberg (2003) includes the following as intrinsic motivating factors – status, opportunity for advancement, gaining recognition, responsibility, challenging / stimulating work and sense of personal achievement and personal growth in a job.

A sense of community, as in communities of practice, by their very nature motivate individuals to participate and share knowledge as they feel that that knowledge sharing is beneficial to the group as a whole, and to themselves individually
.

"To direct individual knowledge for the organizational purposes, an organization should develop and nurture an environment of knowledge sharing, transformation, and integration between its members" (Nonaka and Takeuchi, 1995).

In order to make knowledge management initiatives work in practice, the employees within the organisation must be willing to share their knowledge with others. Leaders must promote this culture of knowledge exchange and sharing within its workforce.

2.5 KM in the non-profit sector

The non-profit sector or non-governmental agencies is a collective label for a variety of very different organisations. They differ from other organisations as they are not profit oriented and they work towards common goals from which the public benefits.

They have a very different culture and structure to for-profit organisations. Their culture is based on community values and they tend to be flatter in structure, de-centralised and more flexible.

"*The less hierarchical an organisation's structure, the greater the instances of knowledge-sharing.*"(Sharratt and Usoro, 2003). For non-profits the knowledge of their members is an important asset and a resource that may have to be called on in specific complex situations during their working day. While non-profit members/volunteers frequently posses valuable tacit knowledge drawn from their field experience, they do not always share it. While one volunteer in a non-profit is struggling with a problem, another may have already solved it previously. Non-profit members need both factual knowledge and procedural knowledge (knowledge on how to perform an activity) combined with tacit knowledge (drawn from their own experience) to perform their functions within their non-profit community.

There is an enormous amount of tacit knowledge in non-profits that is difficult to exchange, but is nevertheless important to the non-profit's development and success.

Consequently, non-profits need to have a way of harnessing this knowledge to facilitate this knowledge exchange and sharing within its community.

Despite the different range and number of non- profit organisations (approx 15,000 in Ireland, Volunteer Ireland) according to Matschke et al. (2012), many of them have the following features in common:

- Voluntariness – much of their work is dependent on volunteers
- Participation - non-profits usually have less hierarchical, flatter structures and decisions are often taken at grass-roots level, using democratic procedures
- Personal relevance – a person's voluntary contribution is closely tied to his personality – volunteering requires strong personal commitment
- Non-formalisation – As many not for profit organisations have neither the human or financial resources to provide significant training, volunteers often

learn their knowledge through observation and are in this way socialised into their responsibilities.

2.6 Knowledge sharing in the Non-profit sector

According to Huck et al. (2011) KM facilitates the sharing of tacit and explicit knowledge between individuals and across organizations to meet organizational knowledge needs.

"While KM has found strong support in the large for profit organisations comparatively less attention has been given to KM in smaller Non-Profit Organizations (NPOs) and Non-Government organisations, even less focus has been given to its application in volunteer communities." (Huck et al., 2011)

As managing knowledge is a significant challenge for the profit sector, there is no reason to believe that the non profit sector does not face similar difficulties. Managing knowledge in non-profits indeed has its challenges, not least due to lack of or insufficient funding for use on KM systems. KM has its roots in the domain of business, its early development and theories addressed the large for profit organisations. Large non-profits have similar needs to large for profits such as human resources, IT resources, and customer service. " *Much like FPOs, NPOs and NGOs must compete for sponsors, ensure effective and efficient operations, and undertake public promotion, and KM plays an important role in these functions* (Lettieri et al., 2004; Kipley et al., 2008; Helmig et al.,2004; Kong and Prior, 2008; Gregory and Rathi, 2008, cited by Huck et al, 2010)"

*"Recognition of the unique characteristics of small-scale NPOs and volunteer communities has led to an emerging interest in their KM needs "(*Lemieux and Dalkir, 2006; Gregory and Rathi, 2008, cited by Huck et al, 2010).

KM's significance in any domain cannot be underestimated, and there are many questions concerning the use of KM in volunteer communities that need to be addressed. For example, how can KM benefit small volunteer communities, what are the technological barriers to adopting KM systems, what is the perception of KM among volunteers, and what innovative approaches should be adopted by volunteers to manage knowledge within a community? Although small voluntary community organisations do not have the financial resources to implement large scale intranets or KM systems, they can still benefit from KM to enhance their delivery of service.

Organisations with a flatter less hierarchical structure tend to benefit from increased knowledge sharing. In contrast to many state or profit based organisations, non-profits tend to be flatter in structure, hence less hierarchical. Differences in status where they exist, are less formalised, and are more difficult to recognise than in other organisations.

To promote knowledge sharing in organisations, most of the KM literature stresses the importance of developing an organisational culture that is based in a sense of community and that encourages interaction between employees in order to enable knowledge sharing among individuals. Non-profits by their very nature are based on a sense of community. An important aspect of a KM strategy is to promote gathering of people for meetings and brainstorming sessions. Another important facet is the inclusion of people onto projects that have experience on similar projects before, in order to access the tacit knowledge of experienced people thus avoiding costly mistakes.

The use of user friendly and appropriate technology is an important part of a KM strategy and it is vital that new technology is used efficiently. "Technology and KM does not provide you with an answer to your problem, rather it facilitates the learning of the answer" (Call, 2005, p20).

"Despite the lack of KM research in the non-profit sector, it is recognised that sharing expertise and knowledge is at the heart of voluntary sector organisations" (Ragsdell, G, Journal of Knowledge Management Practice, Vol. 10, No. 1, March 2009).

Knowledge sharing within the non-profit sector has been said to be concerned with "connecting people together through the sharing of knowledge and experience" (Gilmour and Stanliffe, 2004, p124). Some barriers to this knowledge sharing can include inaccessibility to technology due to the high cost of purchasing and installation and also in some cases lack of IT skills which could make IT in itself more difficult or sharing of knowledge more cumbersome and also lack of funding.

Knowledge sharing within the non-profit sector is important to ensure provision of an effective service, continuation of a voluntary project etc. The sometimes transient nature of volunteers makes it crucial for knowledge to be shared rapidly and effectively to ensure a stable knowledge base for the volunteer organisation. As in the corporate sector there are common factors that can either inhibit or enhance the sharing of knowledge within the voluntary sector. These are management support and

commitment, a culture that supports knowledge sharing and trust and appropriate technology to facilitate sharing.

Non-profit organisations can learn lessons from corporate knowledge management. In particular the impact of organisational structure, creation of community within an organisation and how this impacts knowledge sharing are useful for non-profit organisations. The Knowledge maturity model is often used as a metric for benchmarking the level of knowledge maturity existing in an organisation. This model is based on the Capability Maturity Model (CMM) of the Software Engineering Institute (SEI) at Carnegie Mellon University

.

Maturity Level	Goals	
	Perceptual Assessment	Infrastructure Assessment
Level-1: Possible	Not discouraged; there is a general willingness to share; some people who understand the value of it, do it.	Knowledge assets are identified.
Level-2: Encouraged	Value of knowledge assets is recognized by the organization; culture encourages all activities with respect to sharing of knowledge assets; sharing is recognized / rewarded.	Knowledge assets are stored in some fashion.
Level-3: Enabled/ Practiced	Sharing of knowledge assets is practiced; KM related activities are a required part of normal workflow.	Systematic mechanisms exist to enable activities with respect to KM; a centralized repositories exist; a taxonomy exists.
Level-4: Managed	Employees find it easy to share knowledge assets; employees expect to be successful in locating knowledge assets if they exist; tools for supporting KM activities are easy to use.	Training instruction is available for learning about KM systems usage; change management principles are used to introduce KM practices.
Level-5: Continuously Improved	Mechanisms and tools to leverage knowledge assets are widely accepted.	Intelligent tools exist; tools and mechanisms for sharing are periodically improved / updated; business processes that incorporate sharing of knowledge assets are periodically reviewed.

Table 1 (2.1) - General Maturity Levels -(Kulkarni, U, St.Louis, R, 2003)

The 5 levels span from level 1 - the willingness of employees to share knowledge to Level 5 - mechanisms and tools to leverage knowledge assets being widely accepted i.e. continuously improved. Within the not for profit volunteering community, the aspiration would be to achieve level four of this maturity model i.e. participants/volunteers find it easy to share knowledge assets and that tools for supporting knowledge management and sharing are easy to use. This can be achieved by the introduction and implementation of open source Web 2.0 tools that facilitate knowledge sharing and knowledge creation as in community blogs and on-line forums that are both intuitive and have a short learning curve for participants/volunteers.

2.7 Conclusion

In this chapter knowledge and its definition and the spiral of knowledge by Nonaka has been discussed. The following chapter discussed knowledge management in terms of people, processes and technology, the benefits of KM and what KM strives to achieve. A brief introduction to the non-profit sector follows explaining that they differ from other organisations as they are not profit oriented and they work towards common goals from which the public benefits. Knowledge sharing is defined, followed by a more in-depth discussion in KS in the non-profit sector and the Capability Maturity Model was introduced.

It has been argued that organisations with flatter, less hierarchical structures are better for knowledge sharing as in the case of many non-profits, whose organisational culture is normally based in a sense of community whose focus provides individuals with a commitment to cooperate.

The next chapter will discuss Web 2.0 technologies, social media in the context of Web 2.0, and how Web 2.0 and its principles align with, and support KM and KS in the non-profit sector.

3. WEB 2.0

3.1 Introduction

This chapter will discuss Web 2.0, what is meant by Web 2.0 and social media and how it can be used to facilitate knowledge creation and sharing in the non-profit sector. Why non-profits by their nature, culture and structure are particularly suited to use of Web 2.0 tools and the similarities of non-profits to the principles of Web 2.0 will also be articulated. Current use of Web 2.0 tools for KM and in particular to support KM and KS in the non-profit sector will be discussed and the importance of social media strategy for use of these tools will be highlighted.

3.2 What is Web 2.0?

The precursor to Web 2.0, Web 1.0 was perceived as the static web, for example - web designers or author's compiled web pages and published them on the internet. These sites were static and provided information for the readers. The term Web 2.0 implies the concept of participation in which users are actively involved in the creation of content; the web has evolved from static to interactive!

"Recent knowledge management literature has emphasised the importance of interactive knowledge management technologies, in bringing the human side into the knowledge management equation "(Ardichvilli et al, 2003). These technologies take the form of blogs, on-line forums/discussions, wikis and other social media. According to Paroutis et al. (2009) such technologies have distinct technical features that unleash passion for engaging in knowledge sharing and address the drawbacks of current technologies in organisations.

There are several different definitions of Web 2.0 by several different authors. McLean suggests "Web 2.0 is the catch–all descriptor for what is essentially much more dynamic internet computing" (McLean, 2007). In effect Web 2.0 is about people and the interactive web.

"Web 2.0 is the reorientation of the Web that promotes unbounded interaction, collaboration and participation of people. It is characterized by the emergence of a

large amount of content generated by a collective of Internet users. It harnesses networking effects and leverages the long tail." (Bebensee, T, et al., 2011).

The term itself was coined by Tim O'Reilly at Media Live International in 2004, and was defined by him two years later as ''the business revolution in the computer industry caused by the move to the internet as platform, and an attempt to understand the rules for success on that new platform. Chief among those rules is this: Build applications that harness network effects to get better the more people use them'' (Musser and O'Reilly, 2006).

O'Reilly (2005) states that Web 2.0 does not have a hard boundary but a gravitational core. The core which O'Reilly refers to, are a set of principles that imply on several aspects of the internet industry from software development, through marketing and content development and day to day operations. These principles are described in many papers (O'Reilly 2005) and also in Wikipedia and are as follows:

- Web as a platform – the web should be treated as a platform and not the main application, for example just as the telephone is considered a channel, and the conversation over the telephone line is the essence. Other examples are eBay and Amazon; they provide the channel through which the content is purchased.

- Active participation of users – in the Web 1.0 era, content managers and experts collected, created, organised and categorised the content for the web. Users mainly accessed this content. In the Web 2.0 era, users are active participants, by means of blogging/WIKI's and on-line forums which gives added value to the content.

- The service improves automatically the more it is used – users participation influences the web – for example with the Google search engine ranking. The ranking is significantly influenced by the number of accesses of previous users to pages on the results domain of the search. The more people search, the more statistics are collected, and hence the quality of the ranking will be higher. This is not a new concept, the academic field has used this metric when assessing a researcher – based on the number of times they were cited by other researchers.

- Collective intelligence – this refers to the 'long tail' i.e. 20 per cent of the customers buy 80 percent of the products. The long tail refers to the 80 percent who perhaps only buy one book. Also referred to as collective intelligence is

the power of small sites that make up the bulk of the web's content. Their collective significance is important. For example eBay enables occasional transactions of only a few dollars between single individuals, acting as an automated intermediary. O'Reilly states that hyperlinking is the foundation of the web. As users add new content, and new sites, it is bound in to the structure of the web by other users discovering the content and linking to it. The link is the foundational element for connecting the entire web together (Hinchliffe, 2006). Wikipedia is a good example of collective intelligence – harnessing the wisdom of the contributors.

- Content is core : Control over unique, hard-to-recreate data sources that get richer as more people use them for example Amazon's database, Amazon relentlessly enhanced the data, adding publisher-supplied data such as cover images, table of contents, index, and sample material. Even more importantly, they harnessed their users to annotate the data, such that after ten years, Amazon is the primary source for bibliographic data on books. Every significant web application to date has been supported by specialised databases for example Google's web crawl and eBay's database of products and sellers.

- The perpetual beta: software is developed iteratively and often, with users being co-developers as in open source systems. For example, WordPress' functionality is extended by 'plugins' that are developed and maintained by an open source community for the community.

- Software above the level of a single device – with the explosion of the Smartphone and tablet revolution, software needs to be developed and optimised for the mobile market.

O'Reilly (2005) argues that the competitive opportunity for new entrants is to fully embrace the potential of Web 2.0. Companies that succeed will create applications that learn from their users, using architecture of participation to build a commanding advantage not just in the software interface, but in the richness of the shared data.
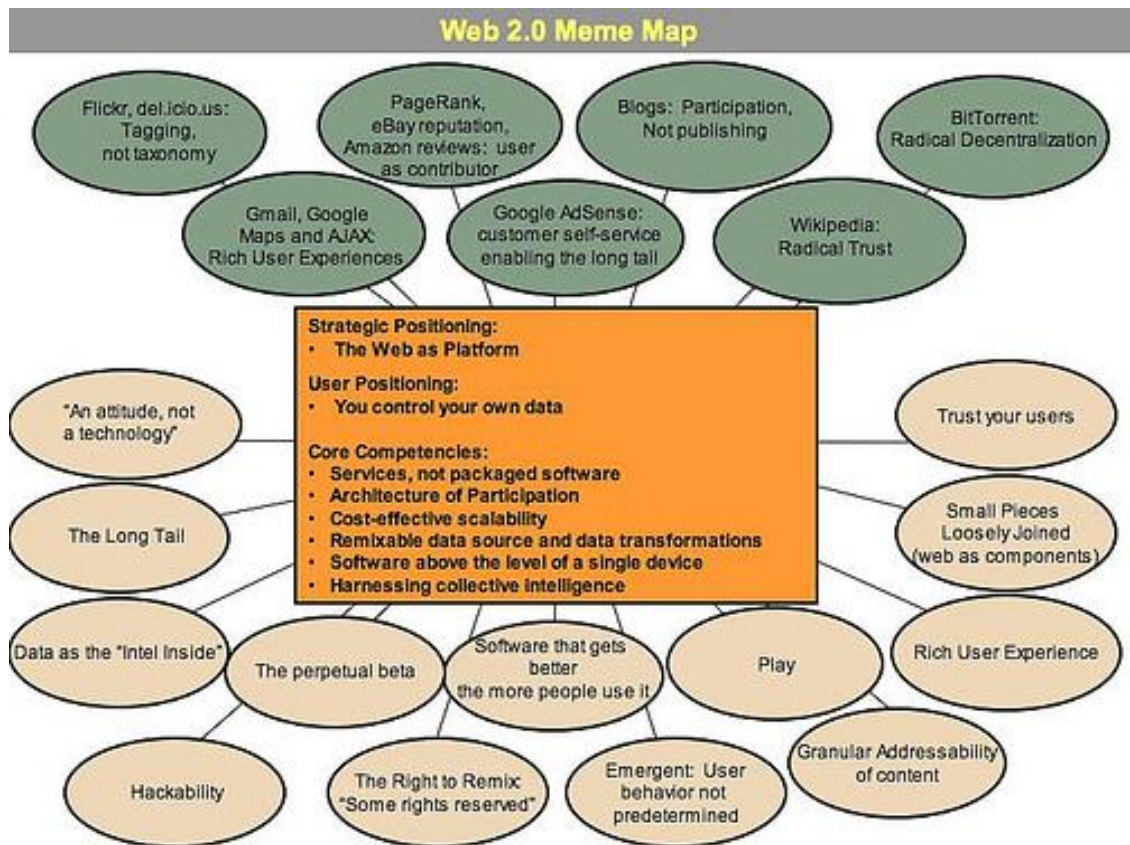
Figure 2   (3.1) "meme map" of Web 2.0, showing the many ideas that radiate out from the Web 2.0 core. (O'Reilly, 2005)

Levy (2009) draws on O'Reilly's (2005) principle – the active participation of users to describe the two types of Web 2.0 users, the passive user e.g. someone orders books from Amazon and are given a history of their previous orders, or recommendations of what they may wish to order based on association of what they have already ordered – added value.

Minimal active user e.g. people writing individual blogs or using tagging, and collaborative users – users that work together over the internet adding collaborative content for example Wikis. A WIKI is a structured website, i.e. collection of pages sharing the same structure using templates. They allow people to work together and collaborate. Wikis allow multiple users, in multiple locations, to work together on a common project. The templates guide the way people write, and it is the ease of use of these templates that differentiate them from traditional content management systems. The elements of collaboration include communication and the ability of disparate individuals to have access to a shared work project, to make changes and see other participants' changes. Collaborative tools are often self-organizing, allowing those

who want to participate to do so, at a level that they choose. Applications like Google Docs and other document-sharing tools provide similar spaces where groups of users can effectively and seamlessly work collaboratively. The most famous wiki is Wikipedia – where this on-line encyclopaedia is written by anyone who wishes to share their knowledge. The reliability and accuracy of this platform can usually be measured by the quality of the references.

3.3 Web 2.0 Tools

Another common Web 2.0 user participating tool is blogging; this term comes from web log, and is a chronological on-line diary. Search engines differentiate between blogs and ordinary content, and give them a higher rating due to their constantly changing content. Tagging is a tool used by readers and writers to create connections and links between pieces of content, sharing the information in common via the tags.

RSS feeds are another web 2.0 phenomenon. RSS stands for really simple syndication and can be seen on most sites and blogs. This service has revolutionised the way searches are conducted. Users do not have to keep checking back with a site to see if it has been updated, rather they subscribe to an RSS feed (much like subscribing to a newspaper), and they receive the updates via the RSS feed reader. The publishers and owners of the site also benefit as they get the content out to the readers in a much faster time.

The social networking phenomenon has exploded in recent years. The largest social networking site, which has been embraced mainly by the younger generation, is Facebook. This site enables users to share information and images about themselves to their friends (and others) who are subscribed to this network. LinkedIn is a website designed for professionals to make contact with prospective employers and like minded members. It has a membership of nine million members.

Other very popular Web 2.0 tools include YouTube, Twitter, Flickr, Pintrest to name but a few. Musser & O'Reilly attempt to explain such outstanding changes to the internet according to the enabling technology:

''One billion people around the globe now have access to the internet. Mobile devices outnumber desktop computers by a factor of two. Nearly 50 percent of all US internet access is now via always-on broadband connections.'' (Musser and O'Reilly, 2006).

3.4 Web 2.0 and KM

Hume and Hume (2008) argue that small non profits should exploit their strengths - such as their large informal networks, and mimic expensive KM functionality with common, inexpensive technologies such as open-source content management systems, blogs and on-line forums. In effect the non profit organisations should harness open-source Web 2.0 tools to manage their knowledge needs. As Web 2.0 tools tend to be free or of minimal cost, and as the nature of Web 2.0 is interactive and intuitive, the cost to nonprofits in minimal in terms of both software investment and user training.
"Applying Web 2.0 applications to KM has the potential to improve the sharing and creation of knowledge."(Bebensee, T, et al.).

3.5 Current use of Web 2.0 in the non-profit sector

The non-profit sector differs from other organisations in that they are non profit oriented, but pursue charitable goals. They fulfil an important social role in society. Due to their restricted funding, they are under even more pressure to make better use of their financial and personal resources.

According to the Matschke et al. (2012), there are a number of characteristics that make Web 2.0 technologies particularly suitable for the non-profit sector. The non-profit sector typically has a large number of volunteers, and similarly, participation by users in Web 2.0 technologies is also voluntary i.e. as in blogging or on-line forums the user decides if, when and where they will participate and are not confined or restrained by work schedules or assignments.

Social Media sites are according to Agichtein et al. (2008 pg. 1), by their very nature "user-generated content" domains that "include blogs and web forums, social bookmarking sites, photo and video sharing communities, as well as social networking platforms such as Facebook and MySpace, which offers a combination of all of these with an emphasis on the relationships among the users of the community". These sites

presented a new medium for people to interact, share knowledge, images, thoughts and ideas. In 2006 Facebook opened registration to businesses. Now according to Miller (2010) *"Today, virtually every business—big, medium, or small—has a Facebook page, a video on YouTube, a company blog, and/or a Twitter account. In short, social media is a strong platform that allows anyone to effectively communicate a message to a worldwide audience."*

Social Media appears to be the perfect fit for the non-profit sector. They can be extremely valuable for non-profit organisations, as they can create new ways to engage with volunteers, donors, constituents, students and others. The tools are free and open-source, and have a short learning curve in terms of training. Sridhar (2010) states *"A plan or strategy for these tools helps to define an organisations goals, audiences and resources. Without a strategy, nonprofits risk wasting resources and missing targets"*.

However, it would appear that not everybody is using social media tools effectively or appropriately—if they should even be using them at all. According to Miller (2010), some professionals become intimidated by these tools and do not know how to effectively use them. Others get so excited about the opportunities afforded by social media that they register their non-profit organization for every single account they can find—even if having a Twitter account will not prove to be beneficial to the organization. Additionally, some organizations are not using social media to promote two-way dialogue, even though user interaction is an important characteristic of the medium.

Social Media has changed the traditional forms of communication for non-profits. It connects people with similar interests and passions, it allows people to interact, and changes the information flow, for example information used to flow in one direction as in a press release to a large audience, now information can flow in many directions with the audience responding to blog posts or partaking in on-line forum discussions.

There are a myriad of social media tools at the disposal of non-profits. Many use blogging platforms such as WordPress, Youtube, Facebook and Twitter to promote their cause, there are many others. It is important that the non-profit has a goal for engaging social media; it needs to know why it is using to social media in order to harness it most effectively. An organisation needs to know what tool can best address their goals. A non-profit has many goals, from marketing to volunteer recruitment,

from volunteer retention to knowledge sharing. Different social media tools can address these individual goals, and it is important that the organisation recognises this.

According to research commissioned by The Wheel, the national representative and support body for community, voluntary and charity organisations in Ireland - Charities are ahead of their private sector counterparts in harnessing social media, with 90.6% of Irish non-profit organisations now using social media, compared to only 64% of businesses, according research released in October 2011.

Below is an infographic of the results of a survey conducted by 'The Wheel'

Conducted: 3 August 2011 – 27 August 2011

Survey mode: Online (Survey Monkey)

Sample: 986 community & voluntary organisations

Respondents   178 (18.5%)

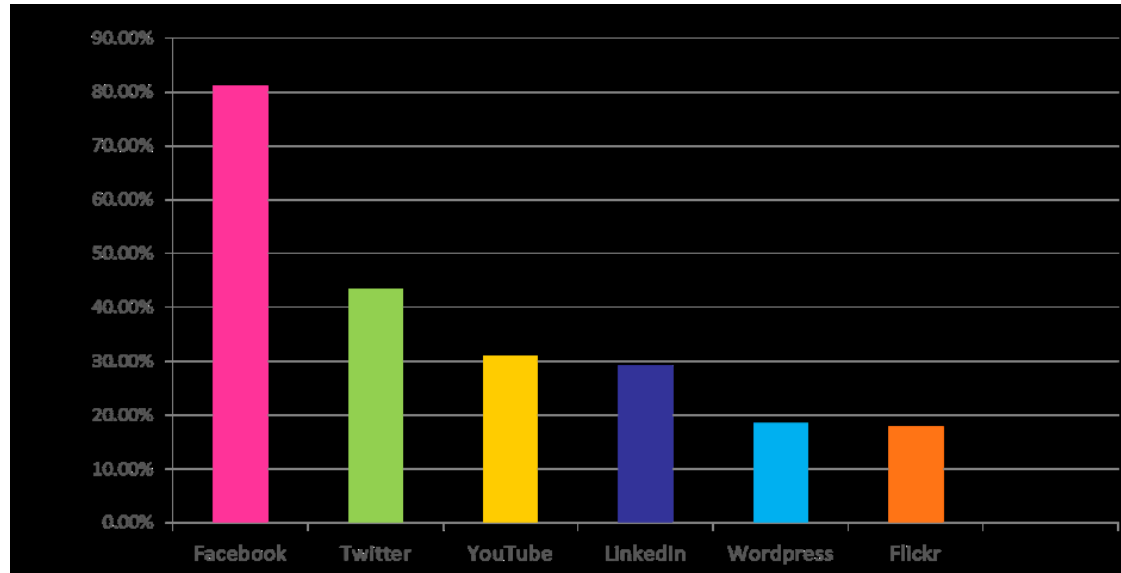**Which 'Types' of Social Media tools does your organisation use?**

Figure 3 (3.2) Types of Social Media being used by Non-profits in Ireland

Facebook is the leader with 81.3% of organisations having set up an account**,** Twitter (43.4%), YouTube (31%) LinkedIn (29.2%), Wordpress (18.4%), and Flickr (17.8%) thereafter.

75% of Irish charities say they either "love" or "like" using social media, 72% report that social media has a positive impact on their relationship with stakeholders, but nearly half (49%) say they struggle to implement it, according to the research findings released as part of Better Together, a national campaign which aims to build public support for community and voluntary groups by leveraging social media. (The Wheel, 2011)

Non-profit need to know why and what for they are using a particular social media tools. It becomes apparent that a digital marketing strategy for Web 2.0 and social media is essential to non-profits in order that a systematic approach can be implemented. It is paramount that any of the social network platforms that are adopted by non-profits are maintained and updated on a frequent basis, and that a record of each platform and its content is maintained to ensure that the knowledge contained within these platforms remain consistent and that duplication is avoided.

"Most nonprofits lack the resources or time to provide constant attention to a Facebook page. Creating a profile and then abandoning it will create only minimal exposure for the organization, and it could turn off potential supporters if they witness inactivity on the site."(Waters et al., 2009)

Failure to implement such a strategy could lead to out of date information, and could lead to the alienation of volunteers and donors if they witness inactivity on the site which could actively discourage knowledge sharing and contribution from the on-line community.

3.6 Using Web 2.0 for Knowledge Sharing in Non-Profits

Non profit organisations with their flatter structure and common aim (to improve social elements of society) are strategically placed to embrace knowledge sharing with the support of open-source Web 2.0 tools such as Blogs, WIKI's, on-line forums and social media.

Non-profits engage in many different activities during their working day, including fundraising, marketing, volunteer recruitment and collaboration and education.

Non-profits can harness the power of social media and Web 2.0 tools in many ways. Non-profits must create the right kind of content to engage their audience, sharing

content that encourages them to act. Measurement of content can be seen by the amount of people who comment, share, like (Facebook) or retweet (Twitter).

The use of multimedia, using photos and videos to engage the audience is very powerful. Uncicef encourages people to think of how they can help, by devoting a Pinterest board to inspirational quotes and photos. Audiences can be engaged by asking questions on Facebook, or by inviting them to participate in on-line forums, by creating discussion topics and inviting participation and sharing of ideas on particular projects relevant to the non-profit. Sharing humorous content can also be engaging. Social media allows nonprofits to interact and share with their audience on a daily basis. Non-profits should use this platform to share their news, announcements events and accomplishments and importantly to post information, photographs and results of events to further engage the audience. Non-profits can further benefit from the relationship they build with their followers. They can now use social media to advertise and recruit volunteers. Volunteer opportunities with links can be posted on Facebook and Twitter. The Red Cross used twitter to post daily relief updates and volunteer needs on Hurricane Sandy in 2012. They tweeted that 90% of their 5,700 workers helping with Sandy relief are volunteers, and linked to a website to sign up for Red Cross opportunities.

3.7 Conclusion

The emergence of Web 2.0 its principles of collaboration and user participation have been discussed. How Web 2.0 can support KM in non-profits has been discussed in detail, and how it can facilitate sharing in non-profits in particular have been articulated. Barriers and challenges to the use of Web 2.0 in non-profits have also been identified.

Most importantly it is imperative that non-profits have goal for engaging social media, they needs to know why they are using to social media in order to harness it most effectively. An organisation needs to know what tools can best address their strategic objectives and achieve their goals. Non-profits strive to achieve their goals in many areas from marketing to volunteer recruitment, from volunteer retention to knowledge sharing.

Different social media tools can address these individual goals, and it is important that the organisation recognises this.

The following chapters will discuss the design and implementation of the Web 2.0 experiment for the community based non-profit organisation desireland.

4. KNOWLEDGE ACQUISITION

4.1 Introduction

This chapter discusses the type of research methodology that was employed during this research. It describes the design of the survey and semi-structured interviews and their execution, what organisations were targeted and why, and an explanation of what each question attempted to address.

It will discuss how the results of the acquisition and elicitation informed the experiment and helped to address knowledge sharing issues in non-profit organisations.

Quantitative research methodology in the form of a questionnaire was deployed in order to elicit as much information from the partner organisations in the first instance.

To this aim, a joint questionnaire was developed with specific sections of the questionnaire devoted to elicitation of information for each different project. The findings from the survey were used to inform the design of the semi-structured interviews, and the findings from both methodologies were used to inform the design of the experiment.

4.2 Research Methodology

Mixed method research using a combination of qualitative and quantitative research methods for data collection and analysis was undertaken during this process. This method was selected to offset the weakness of individual approaches and to provide more comprehensive answers to research questions going beyond the limitations of a single approach. Quantitative research was conducted in the form of a questionnaire.

Each question was designed in order to elicit specific pieces of information and to inform both the qualitative research (semi-structured interviews), that were carried out with a sub-set of the selected partner organisations and to inform the design of the experiment.

4.3 Partner Organisations – organisation profile, profiles of interviewees

The project partners chosen represent a variety of organisation types, ethos and sizes in terms of both volunteer numbers and paid employees, and at varying stages of IT maturity. It is believed that they represent a broad spectrum of the types of voluntary organisation and are ideally suited to this project. Sixteen representatives from eight separate non-profit organisations were surveyed during the acquisition process. Organisations were targeted from the following non-profit charitable areas: relief of poverty, overseas aid, and support for the elderly and underprivileged, disability, and community and environment projects.

The project partners range from small local organisations to organisations which have a worldwide presence. The number of volunteer members in the selected organisations range from relatively small (approx. 50 volunteers in the smallest organisation) to very large – (approx. 9,500 in the largest). Geographically, the selected project partners range from organisations based in distinct local areas to those which have an international presence and are based in many countries. The range of organisations chosen cover a broad spectrum of non-profit organisations, and provide a good snapshot of knowledge sharing and communication in the non-profit sector.

4.3.1 Project Partner Commonalities

Despite the unique nature of the selected organisations, there are a large number of distinct commonalities which make them particularly suitable as partners in this project. These commonalities include the following:

- All selected organisations are highly volunteer dependent.

- The core work of the respective organisations is mainly undertaken by volunteers and includes a large amount of customer facing interaction. The knowledge acquired by these volunteers during their interaction with customers needs to be captured and shared among the other volunteers in the organisation. Indeed the possible transient nature of the volunteers make it crucial for knowledge to be shared rapidly and effectively ensuring a stable knowledge base for the organisation, for use by the current volunteer workforce and to aid training and recruitment for new volunteers.

- Mistakes made by volunteers can be seen by management as problematic and may highlight the unsuitability and possible ability of an individual to complete a similar task in the future. However, tacit knowledge gained from making a mistake is important to be shared with others undertaking similar tasks or roles so that potential problems and pitfalls can be identified to ensure that they are not repeated.

  "*Employees must know that experimentation and well-intentioned failure are acceptable*" (Call, 2005, p25)

- Most organisations have reported issues with attracting sufficient new volunteers especially since the economic downturn

- All organisations regularly undertake recruitment campaigns to attempt to attract new volunteers or encourage lapsed volunteers to rejoin. (Some organisations are currently engaged in the volunteer recruitment process.)

- All organisations have an online presence to promote volunteerism within their respective organisations – this range from very basic to relatively advance. However, all organisations face unique challenges in utilizing their online presence to encourage volunteerism.

- Cross-promotion of services offered by organisations is very evident. For instance, one organisation might advise users of services provided other organisations. This cross-promotion of services may be formal – i.e. included in the organisation literature or online presence or it may be informal and communicated verbally by volunteers of one organisation.

- Resulting from cross-promotion of services, users of the services of one organisation are, very often, users of the services of the other organisations –

- Volunteers in one organisation are, often, current or former volunteers in other organisations.

- Volunteers in all organisations usually meet on a regular or informal basis to complete their work

- All organisations relied on IT to support their activities and processes, but felt that IT was not used to its full potential

- There appears to be distinct knowledge sharing issues in all organisations between the organisation and volunteers and also between volunteers. This was further highlighted in the interview process.

- All organisations have either international branches (Organisation A, Organisation C, etc) or have similar organisations in other countries whose vision has inspired their creation (such as the Lifeline Project which was inspired by the New York Highline Project). It is believed that the potential benefits of this research and, the resulting experiment has potential to have application far beyond the respective project partners.

- Training of volunteers in all organisations is required. This ranges from basic (such as that offered by the desireland project and organisation A, home visitation groups to the extensive professional training offered by Organisation C)

- All organisations had some social media presence – most had Facebook and Twitter accounts.

4.3.2 Project Partner Profiles

In total five representatives from five different organisations were interviewed. The final interview was conducted to validate the findings of the first four interviews. The organisations will be referred to organisations A, B, C, D and E for the purposes of this dissertation. The following is a profile of the organisations and their representatives that agreed to participate in the acquisition.

Organisation A

The goals and mission of organization A are firstly to provide support and friendship to people who need help. Secondly is to promote self-sufficiency; emphasis is on the importance of enabling clients to become self-sufficient and 'getting them back on their feet', as opposed to them becoming beneficiaries of 'handouts'. Thirdly, this organization stands for social justice and advocacy, and they make representations to the government on behalf of the people they visit.

They have over 3,000 volunteers on the east coast to include Wicklow and Kildare and have over 9,500 volunteers nationally to include Northern Ireland. It is in effect the largest non-profit organisation in Ireland.

The representative interviewed from organisation A is the communications and information manager and is both an employee and a volunteer.

She indicated that IT in the organisation was as hoc and usually managed by volunteers. She also said that the organisation used Facebook to recruit volunteers and that IT was not used to its full potential in the organisation. She stated that knowledge sharing between volunteers occurred during face to face meetings, and there was currently no on-line platform for participation and sharing among the volunteers. When asked if an on-line knowledge sharing platform would be beneficial to the organisation, it came to light that a potential barrier to knowledge sharing may exist in this organisation– i.e. reluctance to have to manage an additional area within the organisation.

"Interviewer1: It would be a meeting type of thing? But do you think it would be of benefit to have something technologically based that people could give ideas like a forum that people could….

Respondent A: Yes, maybe. They are setting up a website so maybe yes. My immediate reaction would be who'd man it? Who's going to look after it? 'Hopefully not me'. That's what I'm saying. You might come up with an idea like that. I think they are going to come up with a forum where people can go in and look at different publications and stuff - an interactive website. I don't know what they call it but anyway… people can go in, post comments" (excerpt from interview with organisation A, conducted in January 2013)

Organisation B is a large organisation whose main goal is to help the elderly. It was founded 75 years ago, and there is a strong affiliation with the Catholic Church. This program is under the umbrella of the larger organisation and its aims are to provide the support and services for the most underprivileged older people living alone in Dublin. They have a menu of services for the elderly, from befriending to organising activities including organising activities for elderly men in underprivileged situations, in order to provide them with the quality of life that they should experience in ageing. This organisation is funded through state funding, charitable / church funding and fundraising

The representative of this organisation is a paid employee within the organisation. She is program director and monitors the different programs that are run by the organisation. This organisation has a volunteer base of 150 people. All of their volunteer information is stored electronically in a database. As organisation B is under the umbrella of a larger organisation, their IT needs are catered for by this organisation. Information is shared between the volunteers through email.

They have a presence on Facebook, which they use to attract and recruit volunteers, but have found that the Parish bulletin and local media are more effective for this process.

Organisation C is the largest independent international development organisation that works through volunteers to fight poverty and provide assistance to the underprivileged in developing countries. The representative interviewed from organisation C is executive director and has worked for the organisation for over 15 years. He is a paid employee, but also volunteers. Some state funding is received by this organisation, but it also depends on public donations and church funding. There are six main goal areas – Livelihoods, Governance, Health, Education and HIV and Disability (internationally). These are the framework around their programme and locally in Ireland, their goals are fundraising, volunteer recruitment and advocacy.

Information about volunteers and projects are stored using a mixture of technology and paper-based. It was indicated that some of the volunteer's knowledge was tacit i.e. personal knowledge that was not externalised. This organisation has external IT support, and IT is used to attract and recruit volunteers. They currently use Twitter, Facebook and Blogs as their social media platform. This respondent indicated that he

was not happy with the current knowledge sharing practices within his organisation, and thought that an on-line forum/discussion board would be a very useful tool for his volunteering community.

Organisation D

A single national organisation for volunteering that has both a role to advocate for volunteering generally and to support the local network of volunteer centres. It resulted as a merger between two organisations in 2011. It received 65% of its funding from the government and the remainder through sponsorship and services such as consultancy and training. Respondent D identified 4 key objectives of the organisation the first of which is to increase awareness of volunteering, the second is to increase access to volunteering and the third is to increase quality in volunteering and finally the fourth is ensure their own sustainability to deliver on these objectives

This organisation has an on-line database which a potential volunteer can log on to and seek and apply for a volunteer position in an area that is suitable to the individual. Internal communication is via email and they also have an ideas section on their customer relationship management system.

This organisation had a full time IT person, who has since left, and while technology is of paramount importance to them, they are unsure whether they will have funding to replace this post.

Respondent D has dedicated more than six years of her professional life to developing volunteering infrastructure and creating a more enabling environment for volunteering in Ireland, and also volunteers with the elderly and has associations with other volunteer organisations.

Organisation E

This organisation is where the research and experiment is based on and conducted for this project. It is called desireland and was founded in 2005. It is an umbrella organisation for numerous other projects including the following: SPUDS (The Sustainable Potatoes United Development Study), one of its aims is to raise awareness around GM potatoes and explore the alternatives, The Lifeline Project is a community led campaign promoting the integrated use of urban resources (people, places, materials, systems) to achieve enhanced efficiencies and well-being. The inquiry focuses on the disused Midland Great Western Railway cutting which links

Broadstone to Broombridge in northwest inner city Dublin, as a living laboratory for sustainable development and The Sitric Compost Garden is an urban composting demonstration site and Community Garden located on the corner of Sitric Road and Viking Place in Stoneybatter, Dublin 7.

This organization has no formal funding and relies on product development (LifeLine soap produced from waste materials in local area) to fund its activities.

There are approximately 50 transient volunteers involved in this organization, and up to now the organizations information has been scattered over a myriad of platforms including Facebook, Twitter and 2 out of date websites.

The core issue is that the majority of the active desireland knowledge-base is tacit. Of approximately 50 individuals involved with the project, the primary driver and knowledge source is the project founder. If for any reason the project co-ordinator is unavailable, all project progress slows. There is a definite need to capture the founder's vision and how it is comprised, in order that the Project may progress in her absence

4.3.3. Characteristics of organisations

The project partners represent a variety of organisation types, ethos and sizes in terms of both volunteer numbers and paid employees. They represent a broad spectrum of the types of voluntary organisation and therefore are ideally suited to this project.

The project partners range from small local organisations to organisations which have a worldwide presence. The number of volunteer members in the selected organisations range from relatively small (approximately 50 volunteers in the smallest organisation) to very large – (approximately 9,500 in the largest). Geographically, the selected project partners range from organisations based in distinct local areas to those which have an international presence and are based in many countries.

All organisations were founded with altruistic aims. Some are, very broadly, faith-based. Others such as Lifeline have a broad environmental concern. One, organisation C primarily works in the developing world. However, all utilize the professional and/or people skills of volunteers in organisational goal achievement.

4.3.4 Characteristics of people involved in acquisition

Representatives of the selected project partners were specifically selected who have wide experience of their respective organisations in either paid and/or voluntary positions. These people also have extensive experience of the volunteer process. The experience of individuals who have many decades of voluntary work and also individuals who are currently employed by their respective organisations at senior level was availed of. This experience of both the long-term volunteers and paid employees cover all aspects of volunteer management including: volunteer recruitment, training, mentoring and administration and also back-office responsibilities such as work scheduling, recording of volunteer details (contact details etc.), sharing of project information i.e. outlet for supplying feedback from volunteers and sharing their experience and tacit knowledge.

4.4 Research Methodology

A knowledge elicitation and acquisition was undertaken with representatives of a range of projects. The target was to involve up to 5 projects in this process, in fact quite a number of additional organisations agreed to be involved. Representatives of sixteen non- profit organisations were eventually surveyed.

Representatives of the selected project partners were explicitly invited who have wide experience of their respective organisations in either paid and/or voluntary positions. These people also have extensive experience of the volunteer process. This experience of both the long-term volunteers and paid employees includes volunteer recruitment, training and mentoring, volunteer selection (as specific professional and personal skills are often required by volunteers in some non-profit organisations, a selection process may be undertaken.) and volunteer administration (back-office administration of the volunteer process and general management of volunteer issues.)

The artefacts that were developed to support this were questionnaires and interviews in the initial stages in order to elicit key requirements, challenges and barriers to knowledge sharing within this type of project.

Using the results of this process a set of knowledge sharing mechanisms was developed. This was informed by the KM maturity model see Table 1(2.1) - General Maturity Levels as proposed by Kulkarni and St. Louis (2003).

It is expected that initially knowledge sharing will be at level-1 (knowledge sharing is not discouraged, there is a general willingness to share, knowledge assets are identified) or level -2(culture encourages all activities with respect to sharing of knowledge; knowledge assets are stored in some fashion). Mechanisms proposed by this project will aim to allow projects reach at least level 4 of this model i.e. volunteers find it easy to share knowledge assets with the support of an open source toolset which is easy to teach and easy to learn by the volunteers and volunteer management personnel.

The questionnaire was used in the first instance to gather basic facts about the knowledge management issues in the selected organisations. Semi-structured interviews were then used to validate, expand on and help to develop a deeper understanding the information gathered at the questionnaire stage.

The mixed method research approach helped to capitalise on the strengths of each approach and offset their different weaknesses.

4.4.1 Questionnaire

The choice of questionnaire as an elicitation technique in this research project is used to identify commonalities and to highlight differences in knowledge management issues and organisation demographics in the voluntary sector

"the investigator is usually interested in comparing characteristics among two or more populations" (Whitney, 1972). A joint questionnaire was developed to inform two research projects, one focussing on internal knowledge sharing and retention of knowledge when a volunteer leaves, the other focussing on attracting, motivating and retaining volunteers.

The purpose of the questionnaire was clearly stated at the beginning of the questionnaire - *This research will be looking at improving knowledge sharing in projects with high volunteer involvement particularly focused on improving sharing between volunteers, volunteers and the project, the project and potential volunteers and the retention of such knowledge post volunteer involvement.*

The initial section of the questionnaire dealt with face sheet information i.e. issues relating to the demographics of the organisations e.g. number of volunteers, types of projects, focus of organisation, mission and goals etc.

The internal knowledge section focussed on questions relating to current practices for knowledge creation and sharing, identification of gaps in this process, identifying of areas where knowledge sharing solutions can be focussed.

Questions were also focussed on barriers, challenges and enablers to knowledge sharing investigating culture, structure and current knowledge sharing processes and tools.

The questionnaire helped to identify the types of knowledge currently shared and the sharing of knowledge that would be beneficial to the organisation to share in the future.

The questionnaire was used to elicit key requirements from the partners in terms of the types of tools currently in use and those required to support the knowledge sharing needs identified. It was used to elicit information on the current knowledge sharing culture within the organisation.

Questions were posed regarding existing knowledge within the organisation, existing supporting tools, level of IT skills among volunteers and also identification of the experts and their skills within the organisation and whether they share their tacit knowledge among the volunteers.

The questionnaire consisted of a mixed method combination of both open-ended and closed ended questions. While open-ended questions are more difficult to administer they encouraged the participants to elaborate on themes and raise new issues. Participants are more likely to answer closed ended questions as they involve just ticking a box. The questionnaire was developed using Google Docs, and was distributed to the project partners (as previously identified). The final section of the questionnaire asked the respondent whether they agreed to be involved in further research i.e. semi-structured interview process.

The questionnaire was divided into seven broad areas. The interviews were conducted jointly, with individual sections being pertinent to each individual interviewer. I am only including the sections that were pertinent to my research.

The open ended questions allowed participants to speak their minds and raise other issues and not stifle their responses. The close ended questions are easier to administer

and are more likely to be answered by the participants. This quantitative research technique was the precursor for the quantitative research and was used to inform and design the structure of the semi-structured interviews, which were used to further elicit information from the participants based on the information captured during the questionnaire elicitation process.

The following table outlines the questions, and the areas that each question was aiming to address in the areas of knowledge sharing, IT and social media. (Sections 5, 6 and 7) A full listing of all of the sections and questions relevant to this project are in Appendix A.

Sections 1, 2, 5, 6 and 7 are common to both research projects

- Section 1 addresses face time information i.e. organisation background and details, representative name and role within the organisation, whether they are a volunteer or paid employee or both etc.

- Section 2 addresses funding; Some partner organisations receive state funding and/ or have other significant sources of funding. Others have no sources of funding or relatively insignificant funding.

- Section 3 refers to Volunteering as is only relevant to the other dissertation.

- Section 4 refers to selection and training of Volunteers and was not relevant to this dissertation.

- Section 5 addresses the use and benefits of IT in the organisation

- Section 6 is relevant to this research project only, as it addresses knowledge management and sharing within the partner organisations and knowledge retention when a volunteer leaves.

- Section 7 addresses Web 2.0 tools - provides a basis for the understanding of usage and understanding of such tools in partner organisations

Section 5 – **Information Technology** Introductory questions re. The use and benefit of IT in the organisation.	1. Does your organisation have a dedicated IT Department? 2. If you answered 'NO' to the above question – How does your organisation maintain its technology? 3. Does Your Organisation Fully Use IT to Achieve its Goals?	It is argued that "the diffusion of IT throughout the non-profit sector has brought with it considerable potential for organisational change" (Hackler & Saxton, 2007) The use of IT and the ability of paid employees and /or volunteers responsible for the management and utilisation of IT has a vital role in organisational goal achievement. The application and use of IT has the potential also to play a key role in KM, knowledge sharing and knowledge mapping
Section 6 – **Knowledge Management & Knowledge Sharing** Elicitation of significance to this dissertation re. KM – knowledge sharing and knowledge mapping	4. Does Your Organisation Keep Formal Records on all work performed by Volunteers? 5. Please indicate how your organisation stores information about your volunteers, your projects & your work 6. How knowledge is primarily shared between the volunteers and paid-employees in your organisation? 7. When a Volunteer Leaves your Organisation is there a formal handover policy? 8. How is the departing volunteer's knowledge captured?	KM is critical for voluntary organisation goal attainment. It is argued that non-profit organisations "should establish and encourage an organizational culture that values and rewards the transferring of tacit knowledge to explicit knowledge among employees and workgroups" (Hurley & Green, 2005) The internal knowledge section focuses on questions relating to current practices for knowledge creation and sharing, identification of gaps in this process, identifying of areas where knowledge sharing solutions can be focussed. The questionnaire helped to identify the types of knowledge currently shared and the sharing of knowledge that would be beneficial to the organisation to share in the future..Questions focus on the capturing and retention of knowledge when a volunteer leaves the organisation so that the valuable knowledge that has been attained by the volunteer is not lost to the organisation.
Section 7 – **Web 2.0 Tools.** Provides a basis for the understanding of usage and understanding of such tools in partner organisations	9. Does your organisation currently use Web 2.0 Tools? 10. If you answered 'YES' to the above question – What Web 2.0 tools does your organisation currently use?	This provided a basic elicitation re. the use of Web 2.0 tools in partner organisations. Some of these already use some form of these tools while others do not. Can the use of such tools inform the development of this projects toolkit? The questionnaire was used to elicit key requirements from the partners in terms of the types of tools currently in use and those required to support the knowledge sharing needs identified. It was also used to elicit information on the current knowledge sharing culture within the organisation.

Table 2 (4.1) Survey Questions and areas that they addressed

4.4.2 Semi-structured Interviews

The semi-structured interview was used with a small number of organisations to validate and expand on the information acquired during the questionnaire process. When designing the interview Steinar Kvale's (2008) seven stages were incorporated:

1. Thematizing: - Formulate the purpose of the investigation and describe the concept of the topic to be investigated before the interviews start. The theme of the interview, which is the research question was clearly stated and communicated to the interview participants before the commencement of the interview.

2. Designing: - Plan the design of the study, taking into consideration all seven stages, before the interview starts.
- The design of the questions included a myriad of question types to include introductory questions (warm up,) probing questions (to elicit additional information), direct and indirect questions, a and structured questions (transition to a new topic)

3. Interviewing: - Conduct the interviews based on an interview guide and with a reflective approach to the knowledge sought.
- The interviews were conducted in a professional manner, with due respect and appreciation given to the participants. Interviews were recorded with a voice recorder.

4. Transcribing: - Prepare the interview material for analysis, which commonly includes a transcription from oral speech to written text.
- Each interview was transcribed using dictation software.

5. Analyzing: - Decide, on the basis of the purpose and topic of the investigation, and on the nature of the interview material, which methods of analysis are appropriate.

-Text analysis was conducted using MaXQDA analysis software using categories based on the description of individual areas as defined in the preceding interview elicitation.

6. Verifying: - Ascertain the generalizability, reliability, and validity of the interview, the interview methodology was used to verify the findings of the preceding survey.

- An additional interview was conducted with organisation D, who was not involved in the survey acquisition process, to validate the findings of the other interviews.

7. Reporting: Communicate the findings of the study and the methods applied in a scientific and ethical manner.

- The findings of the study are being reported and communicated in this dissertation document.

This type of interview was chosen as opposed to the structured interview. The structured interview is very formal and as the questions are set by the interviewee, important questions may be omitted.

The semi-structured interview consists of a set of pre-defined questions that were sent to the participants before the interview and additional exploratory questions can then be asked during the interview process. These interviews were conducted with representatives from a number of volunteering organisations with a view to obtaining a more in-depth view of the volunteering sector and their knowledge management and knowledge sharing issues. Consequently semi structured interviews were used in preference to structured or unstructured interviews, for gathering information from key persons. This is because it is important that those being interviewed are able to expand upon their expertise and experience, rather than being confined by very specific questions. As part of the semi structured interviews additional questions were asked to probe the interviewee for more detail, for specific answers, or to allow them to elaborate or expand on specific issues.

These interviews were conducted with personnel from the volunteering organisations who are involved in leadership roles and also have some volunteering experience, and who have a vision for the future of the organisation and are interested in exploring knowledge management within their organisations with a view to improving the

capturing, sharing and retention of knowledge among their volunteers and among projects. Those who indicated a willingness to further participate in the research were interviewed. These included representatives from five high profile non-profit organisations. A representative from other non-profit organisations (who was not involved in the survey research) was interviewed to validate the findings from the other interviews.

The interviews were carried out over a two to three week period at the partner's place of work, and each interview lasted approximately 40 minutes. The questions were tailored to each individual participating, dependent on the answers received from them in the previous survey.

The obvious danger with unstructured interviews is that potential loss of control of the subject matter and the processing of the large amount of data that is collected during the process. This was addressed by the interviewers who put a fixed length of time to the interviews and ensured that the subject matter is adhered to.

The processes and toolkit designed were implemented in a specific project, the desireland project, to test and evaluate their effectiveness.

It is proposed that while the system will be tested and used in this environment, it will be capable of being implemented and used for any community group with limited technical knowledge

The knowledge acquired from the questionnaire and interview artefacts was used to inform the design of the experiment and helped to develop a set of knowledge sharing mechanisms to support knowledge sharing in volunteer organisations with particular emphasis on knowledge sharing and creation between volunteers, within projects, between volunteers and projects and retention of knowledge when a volunteer leaves. Communicating knowledge to the proposed volunteers, and providing a forum for feedback and knowledge sharing about projects is highlighted along with volunteer tracking.

A generic template was developed for the interview process that was tailored to each organisation prior to the interview process. The interviews were conducted jointly, with individual sections being pertinent to each individual interviewer. The design of the interview was based on the findings of the survey, and each question was designed

to elicit additional detail from the interviewee and to validate the information already received.

All Interviews were recorded and transcribed. Text analysis software (MAXQDA) was used to enable the interviewer to analyse specific texts or groups of texts and, among other things, determine the frequency with which words or phrases were used, view words in context, study patterns in texts, create text matrices and compare different documents with regard to text, views and concepts contained therein. In order to achieve this each individual section of the interview questions was coded. The use of text analysis software was useful to compare all interview transcripts and enable evaluation of any contrasting perspectives for all interviewees. An analysis of all interview transcripts added to the quality and depth of the insights provided by the interviewees about the volunteering projects. The MAXQDA software enabled the interviewer to compare and contrast answers given by the representatives of the different partner organizations on each different section. Each section of the interview was coded according to its section name, for instance all of the questions related to knowledge management and sharing were coded as 'knowledge management and sharing". This was very useful for identifying trends and highlighting gaps in various sections and was used to inform the design of the experiment. A cross-section of answers to specific sections by all respondents was readily viewable by this method. Below is a sample of a coded section – Knowledge Sharing, which helped to identify current practice in knowledge sharing in the non-profit sector.

Project Founder Interview Transcript 13 December 2012	Knowledge Sharing	102	111	INTERVIEWER1: Do you have a specific forum for volunteers to share information about what they've done – blogs or anything like that? PROJECT FOUNDER: No. INTERVIEWER1: Do you think it would be a good idea. Do you think the volunteers would be interested in something like that? PROJECT FOUNDER: I'd say they probably would be. INTERVIEWER1: They could swap information about stuff they've done or share ideas – or even information and lessons learned from different things… PROJECT FOUNDER: Yes I think that would be really useful. In fact in the process of developing this new site one of the things I want to put up is an ideas section so that people who are looking at the project or who are in the project would start making suggestions to the website. But at the moment it's been mostly… I've been the one who does the strategy and the ideas and people don't get involved. But more and more

				with the SPUDS project … it's not like its excluding anyone in suggesting things so *name of person* has been helping me with the PR she's excellent –…..

Table 3 (4.2) – Knowledge Sharing Interview Extract

It is clear from the excerpts from both interview transcripts that there is a recognised gap in knowledge management and sharing within sections of the non-profit sector and that the introduction of on-line discussion forums would help to bridge this gap and introduce a platform where tacit knowledge can be shared and externalised.

4.5 Conclusion

This chapter described the research methodologies used in this research. It profiled the partner organisations and explained why they were targeted. It described the design of both the survey and the semi-structured interviews, and explained how they both informed the design of the experiment, a Web 2, 0 tools to support and enhance knowledge sharing in the non-profit sector.

Chapter 5 will describe the experiment development and implementation. Tool selection and justification will be discussed.

5. DESIGN AND IMPLEMENTATION OF WEB 2.0 TOOLKIT

5.1 Introduction

This chapter will describe the design of the experiment related to both the survey and interview findings in the context of the requirements of the desireland project.

The core issue is that the majority of the active desireland knowledge-base is tacit. Of approximately 50 individuals involved with the project, the primary driver and knowledge source is the project founder. If for any reason the project co-ordinator is unavailable, all project progress slows. There is a definite need to capture the founder's vision and how it is comprised, in order that the Project may progress in her absence. Similarly there is an issue with how people interact and participate with the project in any formal codified manner. There is no formal mode of interaction or scheduling of participation. Rather activities and interactions appear to be in an *ad hoc*, unrecorded but creative manner. The situation as described is a classic Knowledge Management issue – how may tacit knowledge be converted into explicit knowledge.

During discussions with the desireland founder and co-ordinator and subsequent investigation into the background of this project it was discovered that two websites existed, one that was not being adequately developed and updated, the other on that did not function at all. The project founder did not have the authority to access the non-functioning website, as the volunteer who developed it had left the project, and the founder did not have the technical expertise to update the other website. Having an on-line presence and a social media platform was paramount along with the need for one central repository for the storage, access and retrieval of the desireland founders large quantity of data and images from numerous projects, which were currently scattered around various different media platforms from Facebook to Twitter, from Flickr to Instagram. It became apparent that potential volunteers found it difficult to source information on any of the projects, or indeed any platform for which to offer their services as volunteers.

During follow-on discussions with the co-ordinator it became apparent that all of the projects should be co-ordinated under one umbrella organisation – desireland. Desireland encompasses the founder's professional consultancy work - developing and managing healthcare design research. The principles that emerge in the process of this professional work are then applied in not for profit community based demonstration projects which include the LifeLine Project, SPUDS, and the Sitric Compost Garden Community. The Lifeline Project is a community led campaign promoting the integrated use of urban resources (people, places, and materials, systems) to achieve enhanced efficiencies and well-being. The inquiry focuses on the disused Midland Great Western Railway cutting which links Broadstone to Broombridge in northwest inner city Dublin, as a living laboratory for sustainable development. SPUDS (Sustainable Potatoes United Development Study) which is a community based action research project examining the sustainability of Ireland's agricultural system through the eye of the potato. The Sitric Compost Garden is an urban composting demonstration site and Community Garden located on the corner of Sitric Road and Viking Place in Stoneybatter, Dublin 7,

Rather than having information on each of these projects scattered all over different platforms, it was decided to house them under one umbrella organization called desireland, with separate links to each of the individual projects and instructions to the web hosting company to forward the existing domain names www.spuds.ie and www.lifelinproject.ie to the relevant sections within the new website.

The research also highlighted the requirement for an on-line discussion forum to engage the volunteer community to enable them to share information both internally and externally between projects and between volunteers and projects. Forums can be interpreted as exercises in social constructivism – i.e. meanings are constructed through interaction with others.

As the founder of the desireland project is essentially a one person operation (with many transient volunteers), and no formal funding, the solution needed to be easy to use and of low or minimal cost. To this end an open source Web 2.0 tool was considered as a solution to address both the centralisation and organisation of the existing disparate data and images and the creation of an on-line discussion forum for knowledge sharing and creation.

Below is a section of the transcript of the interview with desireland project founder:

"*Interviewer1: It sounds from what you are saying that your primary requirements are probably a website – a proper functioning website and perhaps a blog for volunteers to communicate?*

RespondentE Yes

Interviewer 2: An online forum? We were speaking to another organization on Tuesday and they have an effective forum where existing volunteers can talk to potential volunteers.

Respondent E: Ok. Right, that's a good idea." (Excerpt from interview with Project Founder (Organisation E in DIT, Kevin Street on Thursday 13th December 2012.)

Having interviewed representatives from five organisations, two of them indicated that they already had on-line forums for knowledge sharing and communications between their volunteers, and their volunteers and Projects (Organisation B and C); the remaining three organisations (A, D and E) felt that it would be very beneficial to their organisations to adopt this approach internally. "Respondent E: Yes I think that would be really useful. In fact in the process of developing this new site one of the things I want to put up is an ideas section so that people who are looking at the project or who are in the project would start making suggestions to the website." *(Excerpt from transcript of interview with the Project founder (Organisation E) in DIT, Kevin Street on Thursday 13th December 2012).*

The nature of forums draws on O'Reillys (2005) principle of active participation of users. Forums exist only because of user participation. Knowledge is shared and created within this medium. The user is an active participant and gives added value to the content. (Levy, M, 2009). Forums can facilitate the sharing of tacit knowledge, making it explicit. Using Nonaka's spiral of knowledge (figure 1, (2.1)) this knowledge can be evaluated, analysed, enhanced, criticized and combined with other knowledge – (the combination process) to simulate new insights and ideas - i.e. to create new knowledge.

A forum is an online message board where participants post messages within predefined categories. Participants respond, creating an online conversation between potentially large groups of people led by one or more moderators. Categories can be set up to reflect different projects, events and ideas, thus enabling participants to share

and communicate their ideas with each other. A search feature is an important aspect of forum software and allows users to search through archived discussions.

Most forums have some sort of information architecture and are generally sorted by categories. While blogs are generally designed for single user input, forums are discussions between several people. Forums are generally made up of many short messages whereas blogs tend to have longer replies. One of the simplest ways to engage people in online conversation is through threaded discussion forums.

It was recognised that introducing an on-line forum in a non-profit organisation with transient volunteers is somewhat of a challenge, as there is no consistent set of volunteers to interact with it. It is also argued that introducing a forum to a brand new blog may not be successful, and that a forum should not be introduced until the blog site is well established and is attracting a large number of page views.

According to Matschke et al. "*practical experience has shown that an exchange of knowledge will not automatically occur on platforms that have been set up for this purpose. Information is read and used, but only few of the users make active contributions to such platforms and contribute their own knowledge. From the point-of-view of each individual user, the most effective strategy would be only to extract information from such a platform, but not to contribute anything. But in the worst case, this will lead to platforms with little or no updated content – a state which is negative also from the individual users' point-of-view.*"

Fayard and DeSanctis (2005) argue that forums provide an alternative to educational courses or dues-paying associations that require face-to-face encounters, bounded times of interaction or other formalities and obligations. But the forums generally produce no tangible products; nor do they provide the participants with tangible rewards or outcomes. Online participation is engaged via a shared professional focus and an opportunity to learn from colleagues. As such, attracting contributors and sustaining the life of the forum is an ongoing challenge.

Despite the above perceived drawbacks of this knowledge sharing platform, it was decided to proceed with it as an experiment, with the view that with time and encouragement the users/volunteers will participate and engage with this medium.

Due to the non-profit nature of the organisation and the implicit lack of funding, and technical expertise, a tool that was free or of minimal cost was considered the best option. It was recognised that other tools were perhaps superior in nature, but had a significant cost associated with it, and for that reason were discounted.

5.2 Selection of and Justification of Tools

As funding and ease of use was paramount to tool selection, it was decided to choose the open source path. A selection of tools were considered, and the final decision was between Drupal, Wordpress and Joomla all of which have content management features and are free and open source.

A comparison was conducted between the three platforms, and WordPress was chosen for the following reasons:

- Technical experience is not necessary; it's intuitive and easy to get a simple site set up quickly.

- It's easy to paste text from a Microsoft Word document into a Wordpress site, but not into Joomla and Drupal sites.

- Ease of use is a key benefit for experts and novices alike. It's powerful enough for web developers or designers to efficiently build sites for clients; then, with minimal instruction, clients/users can take over the site management.

- Extensive selection of themes.

- Very user-friendly with great support and tutorials, making it great for non-technical users to quickly deploy fairly simple sites.

- Ideal for fairly simple web sites, such as everyday blogging and news sites

- extensive range of plug-ins which extend the system and make it feature rich

- Easy to manage and maintain

WordPress is based on PHP and MySQL, as it is a   blogging-centric CMS which addressed the requirements of this project.

5.2.1 Benefits of using WordPress

Wordpress, despite some misconceptions is not just a blogging tool. It is also a content management system. Below are some WordPress CMS features that that can be used straight from the box and that are useful for any non-profit organization

- Intuitive, well laid out back end
- Easily add and manage pages
- Media gallery with content that is easily embeddable
- Add multiple users with different privileges
- Easy to use editor
- Set static front page

WordPress is free and open source and the core software is built and supported by hundreds of community volunteers. New versions are published regularly which provide improved functionality and ease of use.

From discussions with several non-for profit organisations it is clear that funding and the availability of IT resources to achieve the organisations goals and mission is crucial. As WordPress is free this is one area where an organisation will not have to use their scarce financial resources on software.

"we can't actually afford to recruit an IT person and, so we have been looking at outsourcing the role and that has n't proved as easy as I'd hoped, so I think that what we will be doing is looking for a secondment within our network for that," (Interview conducted with Respondent D of Organisation D)

"Being free doesn't make it any less powerful or desirable than its commercial counterparts, and many experts now recommend WordPress for non-profits ahead of other Open Source platforms such as Drupal and Joomla." (http://nonprofitorgs.wordpress.com accessed 14th January 2013).

WordPress is open source, so it means that the source code can be accessed by a designer if required, it also means that you the organization does not have to license it and *"there are hundreds of developers working on WordPress all of the time making it better for you to use. What other piece of software has such an enormous, dedicated community of developers working away all for the love? And who could benefit more than people who have little money and tight budgets?"* (http://nonprofitorgs.wordpress.com/book/ accessed 14th January 2013).

WordPress is easy to use, and as many nonprofit organizations have a small number of dedicated staff or rely on volunteers for their administration , the chosen tool must be easy to use and have a short learning curve, especially if the organization has transient volunteers as indentified in the research with desireland.

"Interviewer1: I get the impression from the way you are talking that some of your volunteers are transient by nature. You don't seem to have a consistent body of volunteers. Would that be true? Respondent E: At the moment, yes." (excerpt from interview with Project founder of desireland, in DIT, Kevin Street on Thursday 13th December 2012.)

It is paramount that either the project founder or some other volunteer will be easily able to use and administer the new on-line site with minimal amount of training.

All of the social media platforms such as Facebook and Twitter are easily integrated with WordPress. WordPress enables the development of a cohesive outreach policy that encompasses all social media.

5.3 Execution of the experiment

The WordPress server software was set up on an external server using a company already engaged by the project founder and co-coordinator. The desireland.ie domain name had been previously registered. The site was set up and configured on the external server. A test site was set up locally for testing of configurations and plug-ins before being deployed on the external server.

WordPress is both a content management system and a blogging tool. The existing material was gathered from all of the disparate sites and organized into the new site, with static pages being created for the static information and a blog on the homepage for the project co-coordinator to constantly keep the information up to date and ensure that constant traffic is directed to the site, thus keeping the site high up in the search engine ratings. The information was organised into the following sections – Home (blogging), desireland (About desireland), SPUDS (sub-sections), The Desireland (sub-sections), Sitric Garden (sub-sections), desireland Forums (Discussion forums), Contact us and Site Map.

Figure 4 (5.1) Screenshot from desireland.ie homepage

5.2.1 Forums

Plugins are tools that extend the functionality of WordPress and make WordPress very flexible, and a WordPress Plugin called WP-Forum Server is the forum software chosen as a knowledge sharing and communication tool within the non-for profit voluntary organization desireland. WordPress's proprietary forum software BBPress was thoroughly investigated and tested, but proved to be extremely difficult to customize and was not aesthetically pleasing, nor it was it thought to have the ability to encourage volunteers/users to engage with it as a tool.

WP-Forum server on the other hand was proven to be flexible, more aesthetically pleasing and easier to customize.

While researching forum tool software, other systems such as Vanilla Forums, were identified as being more user friendly, but as there was a cost associated with this system it was discounted. It may be considered in the future if funding can be sourced.

The forum plugin, ForumPress was configured, and categories and forums were created and divided into the following categories: desireland, Lifeline, SPUDS, Sitric Garden. Within these categories are various forums, for example the LifeLine category has the following forums: DIT students learning with communities, Bioremediation workshop, and LifeLine soap.
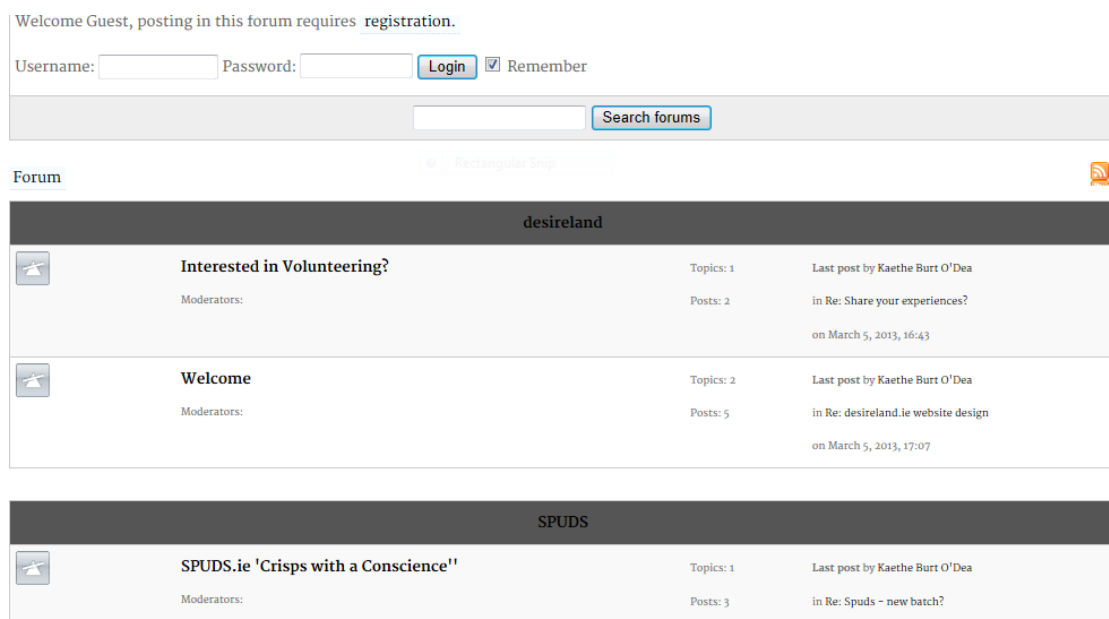
Figure 5 (5.2) Screenshot of ForumPress from the forum section of desireland.ie

To test the forum tool, a number of users were set up with user names and passwords in order to contribute to the forum. These users were identified by the project sponsor as casual volunteers with the project. These users were emailed with their user details and a brief description of the project and its aims, along with instructions and screen shots on how to use the forum.

There is a facility for public and private forums. A private forum was set up to enable internal knowledge sharing and generation amongst the volunteers, while the public forum can accessed by any member of the public who is interested in making suggestions and contributing ideas to the various projects.

A user must be logged in to post a topic to the forum, and if a user does not already have a username and password, there is a registration facility, whereby a user is prompted to enter a username and email address. A password is then sent to this email address, and then the user can log onto the forum and post. The registration process within WordPress integrates well with the Forumpress plugin - users registered through ForumPress appear on the WordPress user database.

A user may reply to an existing topic or post a new topic within the relevant forums. New forums can only created by the moderator.

A user can edit their profile and upload a photograph of themselves to their profile via the edit profile button.

5.2.2 Contact us form and Database

Contact 7 plugin is a contact us form that was integrated into the site to allow users of the site to get in touch about the various projects by means of a dropdown box, or to indicate their willingness to volunteer for the various projects by clicking on the checkboxes. The form also captures the following information: name, email address, telephone number (optional), subject (select from dropdown menu), and message body where users can indicate the nature of their query or just comment on the content or ask for further information on the projects.

This information is communicated to the site administrator and the plugin is configured to send a customised automatic response to the sender. The CAPTCHA plugin is used in conjunction with this form, where the user is prompted to enter a random set of characters to prevent spamming.
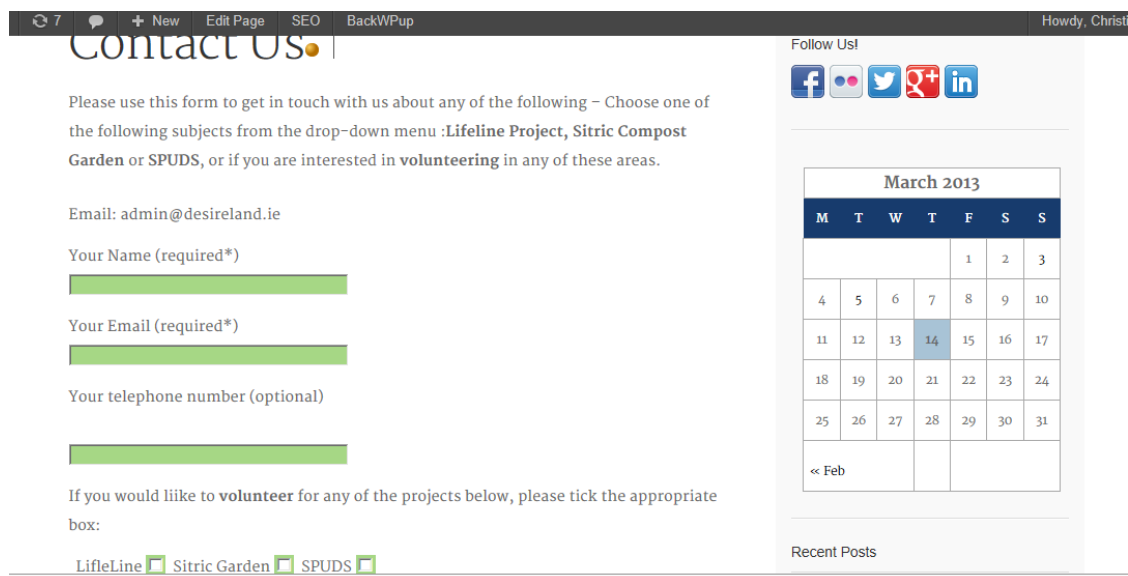
Figure 6 (5.3) Screenshot from the Contact Us section on the desireland.ie website

Contact Form Database has been configured on the site to receive and store the information received via the Contact 7 form into a database. This is a very useful tool for the administrator, as this information can be used for further communication about events and projects repeatedly into the future. This information can be exported to an Excel or Google spreadsheet or to HTML .

5.2.3 Additional WordPress Plugins

A number of additional plugins were installed to extend the features of WordPress and to enhance the usability of the system. Security and integrity of the site is supported by the following plugins: Akismet is used to protect the blog from comment and trackback spam. BackWPup this is also known as WordPress Backup and is used to backup the sites blogs and database. This plugin can be configured to activate on a daily, weekly or monthly basis.

Google analytics for WordPress allow the tracking of usage to and from the website, allowing the gathering of valuable user information such as country of origin, number of unique page views etc. allowing the moderator to measure the efectiveness of the site and help identify areas that can be improved upon.

WordPress SEO (search engine optimisation) works by by automatically optimizing and inserting the meta tags and link elements that Google and other search engines like, it helps to improve rankings and gain more subscribers. It also has the facility to create a site map which lists the individual sections by page, by post, by month and by category.

OtherWordPress plugins facilitate the integration of other social media platforms such as Facebook , Twitter, Flickr etc. These plugins faciltate the publishing of tweets in the sidebar (Twitter feed), which should then encourage the increase of the Twitter audience and the integration of Facebook comments into the WordPress website, to make it easier for readers to discuss the posts and keep the information consistent across all of the platforms.

 Due to the disparate nature of this projects repository of information, this facility was very important, both to ensure consistency of followers on Facebook/Twitter and to eliminate the need for duplication (thus introducing the possibility of errors and inconsistency) across all platforms.

Other plugins used to enhance functionality were an image widget (for uploading images to the site) and a calenar widget fo displaying a calendar of events.

The flexibility of plugins cannot be underestimated in this project. The artefact is an evolving and iterative process, and can be further built upon in the future, as the need arises and further requirements are identified. For example there may be a requirement

for an on-line shopping facility to sell the LifeLine soap, or a subscription/donation facility may be required. These processes can be easily integrated by the installing additional plugins, and can be easily confgured and adminstered by the project founder, due to the ease of use and limited technial expertise required for managing this platform. Any of the Plugins can be deactivated at any time, if there is no further use for them.

The site is easily administered by use of a Dashboard, which is easy to use with minimal training.
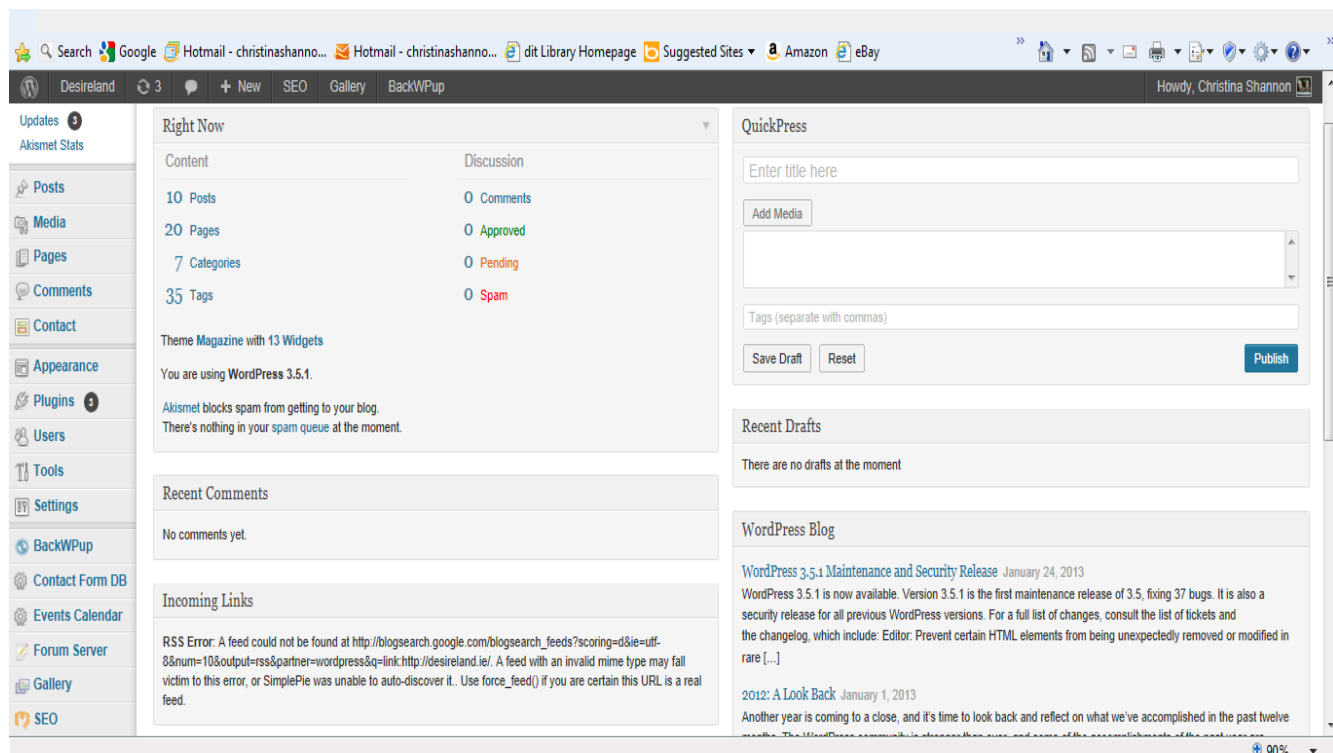
Figure7 (5.4) Screenshot of 'dashboard' for moderating and configuring the site

The appearance of the site is easily customisable. WordPress have many available themes. In this instance the project co-ordinator purchased the Magazine theme for use on this site. This theme was easily customisable by the addition of project specific images. The project co-ordinator enlisted the help of a volunteer (a graphic designer to create the existing banner).

A page could be defined as static (used for background information) or post (used for blogging) and entries are displayed in reverse chronological order. Different templates can be chosen for pages – for example the Home Page is given a blog template, the forum page is given the full width template. Other pages are given a two column

template, where the right sidebar can be used for widgets for example a Twitter feed or events calendar.

Reading, writing, discussion, media and general settings can be configured under the settings tab. Users can be created or delete and their profiles amended using the users tab.

5.3 Training

The configuration and testing of the site took place over a number of weeks. Some basic training on the use of the site was given to the project founder. As the project founder had already a basic knowledge of WordPress, minimal training only was necessary. The site went 'live' on 25th February 2013. The ease of use of the tool allows immediate refinement and updating of the site by the project founder.

5.4 Conclusion

This chapter discusses the implementation of the experiment in the context of the background of the desireland project and its requirements, the selection of appropriate tools and justification of selection, and the description and presentation of the artefact.

The chosen platform was discussed in detail, with descriptions of additional tools that enhanced the functionality of the platform. Both the backend and frontend were discussed in detail, with emphasis being on the ease of use of both facets of the system, in the context of the lack of funding and in some cases technical expertise in the non-profit sector.

The implementation was discussed, with description of the usage of the tool, and justification of selection of a user group on which to test the tool.

The next chapter will discuss the evaluation, user feedback and how effectively the implementation addressed the needs and requirements as identified in the knowledge acquisition and elicitation process.

6. EVALUATION OF TOOLKIT

6.1 Introduction

The focus of this chapter will be on measuring the effectiveness of the implementation of the experiment with regards to the requirements and needs identified in the knowledge acquisition and elicitation process i.e. the effectiveness of the Web 2.0 experiment as a knowledge sharing tool. User feedback will be discussed, and any additional metrics such as user surveys and site usage statistics will be outlined.

6.2 Results of experiment

The site went 'live' on the 25th February 2013. This experiment is currently running now for just over three weeks. Google analytics is being used to track the usage of the site, how users interact with the site and the number of unique visitors to the site among other statistics.
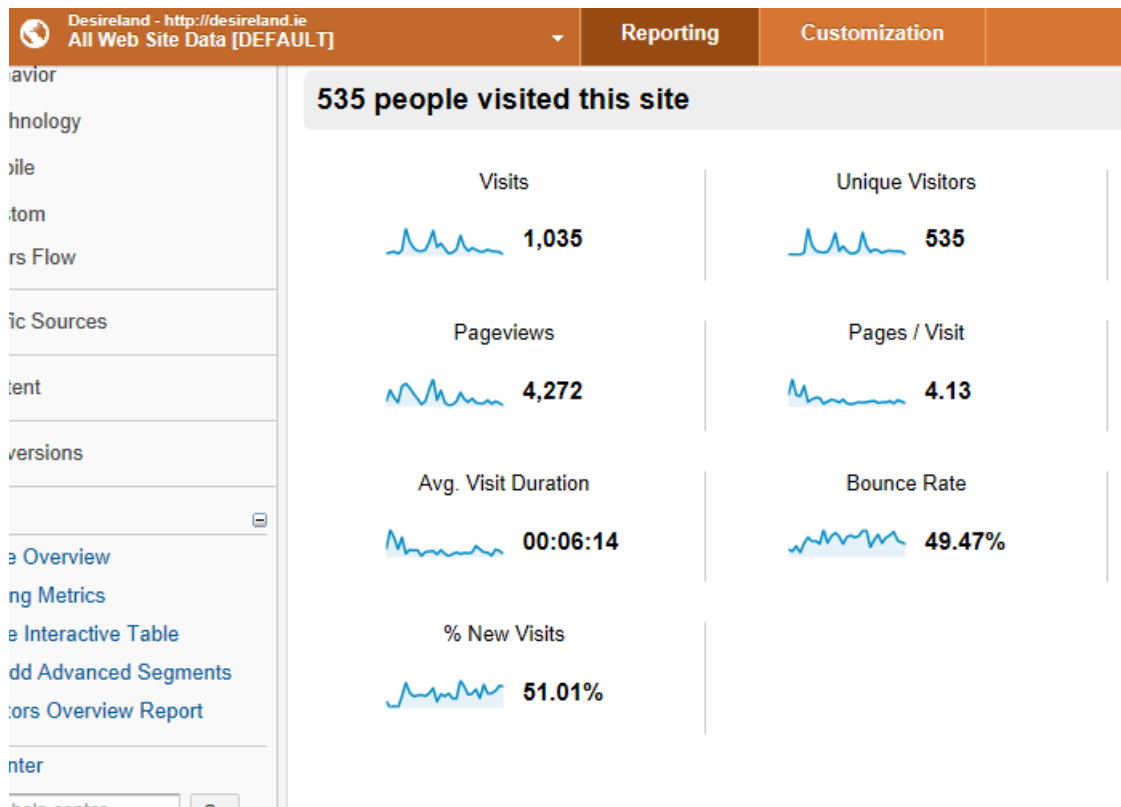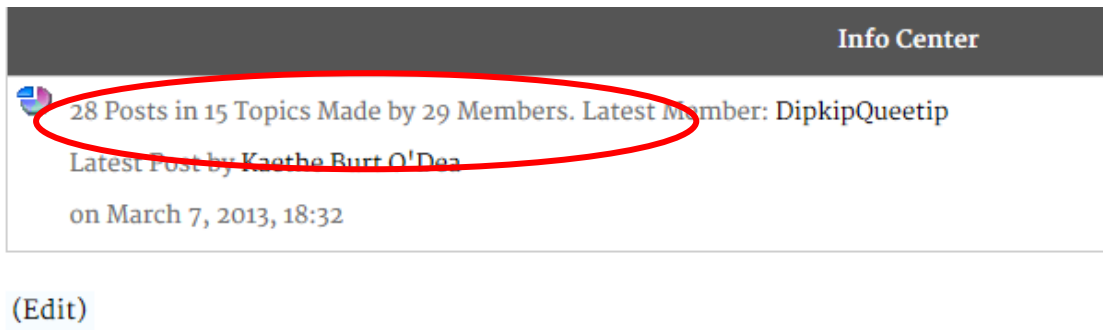
Figure 8 (6.1) depicting visits and unique visits to desireland.ie accessed on 24th[th] March 2013

Other metrics used were statistics on the number of people who registered on the site, registration is necessary to post to the on-line forums. Statistics on the forum section indicate that while users registered, they did not necessarily complete 'the call to action' i.e. post a forum topic or reply to a forum topic.

Figure 9 (6.2) illustrates that there are 28 posts in 15 topics posted by 29 members.

There was some success with the usage of the forums, as two of the moderators posted topics to encourage further engagement and user participation.

One topic was posted as an e-tivity in the Welcome forum, inviting participants to introduce themselves, post a bit about their backgrounds and upload a photograph.

Etivities as defined by Gilly Salmon (2002) are frameworks for online active and interactive learning. A key feature of etivities is "*A small piece of information, stimulus or challenge (the 'spark')*"

Figure 10 (6.3) Screenshot depicting visits to the top ten sections of the desireland.ie site

The screen shot above, illustrates the amount of page visits to the desireland forums and somewhat surprisingly it has the highest number of page visits to the site to date, and the highest number of unique page visits.

Despite this stimulus and numerous emails and reminders to ten users (previously asked by the project sponsor to participate in the testing of the forums), only four of these people replied and actually posted to the forum. This aligns with the discussion in the previous chapter and the following quotation by Matschke et al. (2012)

"*Practical experience has shown that an exchange of knowledge will not automatically occur on platforms that have been set up for this purpose. Information is read and used, but only few of the users make active contributions to such platforms and contribute their own knowledge. From the point-of-view of each individual user, the most effective strategy would be only to extract information from such a platform, but not to contribute anything.*"

Several factors have been identified as causing barriers to users engaging in knowledge sharing in an on-line open forum. Losing face has been identified as one. (Ardichvili *et al.* 2002). Sharratt and Usoro (2003) argue that the fear of posting an incorrect or misleading contribution, or the belief that one's contribution may not be sufficiently important or relevant, can have a significantly negative effect on one's motivation to

share knowledge. Another barrier may be the technology itself, the project sponsor found the software cumbersome to use, though not impossible and voiced the following opinion:

"Interviewer 1: Do you think that the actual forum platform is a barrier to people using it? Do you think it's because you don't think that it's that intuitive?

Respondent E: I don't think it's that intuitive" (excerpt from feedback interview conducted with project sponsor, 12th March 2013).

It was perceived that if the platform was easier to use, it would be used more, and O'Reilly's (2005) principle" *The service improves automatically the more it is used – users participation influences the web"* would be realised.

The feedback interview highlighted the potential usefulness of the forum platform to encourage users to engage and participate in on-line discussions; it also highlighted a potential barrier to their use in this project. It came to light that the project sponsor had previously attempted to introduce a forum into an old website using an existing community of practice as the test bed. The forum was unsuccessful, and the project sponsor was reticent to ask the community of practice to engage in another forum, if there was a risk that, it too would be unsuccessful. Hence, an existing community of up to three hundred users were not invited to engage. This could have made a significant difference to the outcome of the forum usage.

A survey was developed using SurveyMonkey to elicit the views of the group of users that had originally agreed with the project sponsor to participate in this project for testing purposes. The survey questions broadly addressed the following areas, purpose, design and content of the main site, then specific questions regarding the forum platform, ease of use, effectiveness as a knowledge sharing tool, aesthetics etc. Although there were only 3 replies to the survey (out of 10 sent), all of them were positive about the site as a whole, and positive about the forum as a knowledge sharing tool. It is also proposed to upload the link to the survey onto the website, to elicit the wider public opinion.
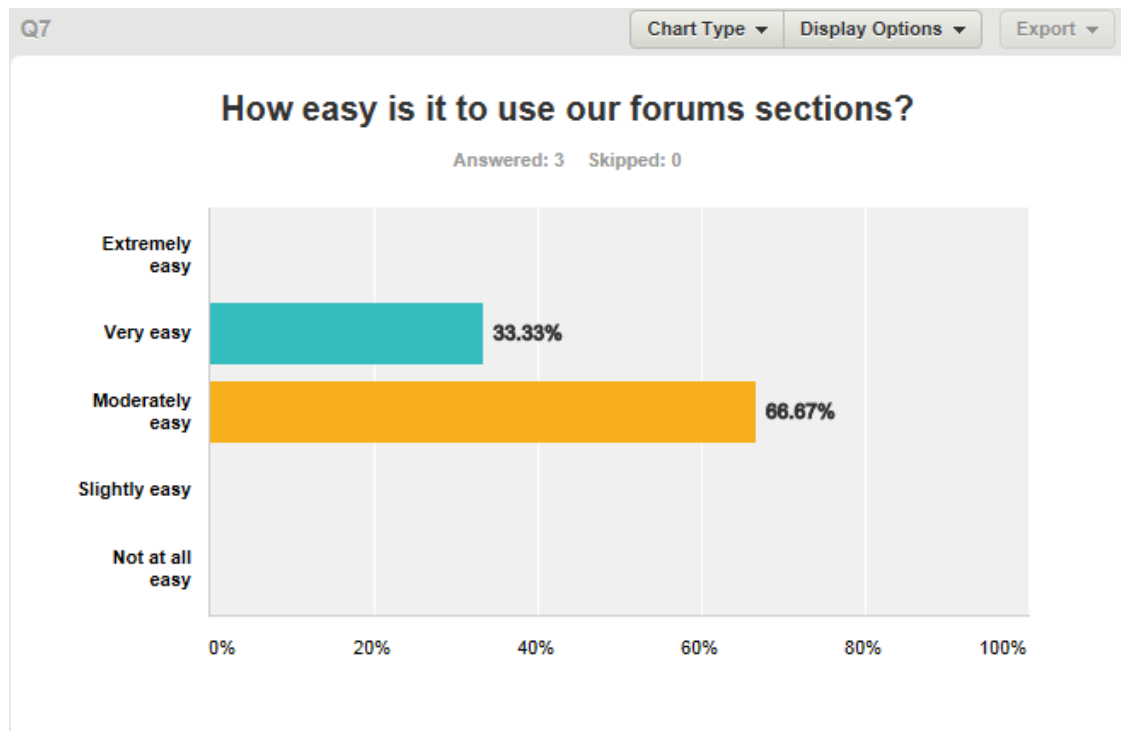
Figure 11 (6.4) Feedback Survey on usage of the Forums
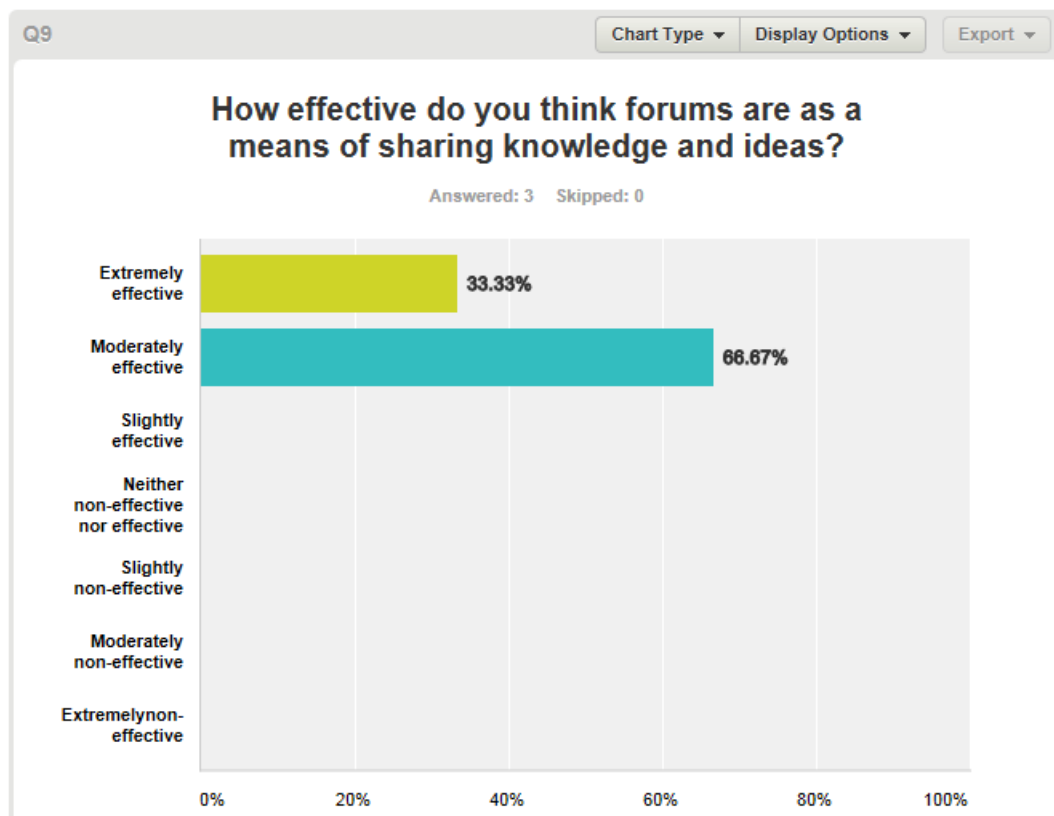
Figure 12 (6.5) Feedback Survey on usage of the Forums as a Knowledge Sharing Tool

There have been 3 enquiries to the website via the 'Contact Us' form, each message indicating the interest of the sender to get involved with the desireland projects. This information is recorded on the system database and will enable the project founder to use this information to get in touch with these people regarding projects in the future.

A face to face unstructured interview was conducted to elicit the project sponsors view of the entire project. This also took place approximately two and a half weeks after the initial implementation, and proved to be very positive in some aspects.

Below is an excerpt from the original knowledge and acquisition interview with the project founder in December 2012, in which the project sponsor summarises the requirements and her hopes for a solution:

"Interviewer 1: So that brings us on I suppose to possibly the last question. In a year's time where would you like to see desireland be? Respondent E: Well I would like to see desireland as a package rather than just these sort of disparate projects and nobody really knows what the overarching principles and ethos in desireland is and it's more than just ... I don't think most people know that desireland is behind the Lifeline or behind SPUDS and that there is this, umbrella of thinking that pulls all this together. So the research that I'm doing professionally is ... there are sort of overarching principles emerging from that research that I'm employing in my voluntary projects. So if I could do that it would be brilliant." (Interview with project sponsor, Organisation E, December 2012)

The experiment addressed the requirements of the project sponsor in terms of merging all of the organisation's existing knowledge under one umbrella for ease of access by the sponsor and other stakeholders including potential volunteers. Also, tools to support knowledge sharing, creation and communication have been implemented, and the effectiveness of them will continue to be monitored into the future.

"Interviewer 1:Do you believe that the site design is appealing to visitors?

Respondent E: People have been saying that they like it…my daughter who is quite a stickler on how things look, liked it, she liked it a lot…she thought it was a good clean looking site, and other people who are design people like my friend Greg who did the film, thought it was very clean…it thought it was very informative…so the feedback has been good so far," (excerpt from feedback interview with project sponsor, conducted on 12th March 2013)

6.3 Conclusion from the experiment

This chapter discussed the different types of metrics that were used to measure the effectiveness of this experiment in addressing the needs and requirements as identified in the initial acquisition and elicitation among the non-profit partners. This chapter described these metrics which included the use of Google analytics, on-line surveys and an unstructured interview with the project sponsor. The unstructured interview provided very positive feedback from the project sponsor on the website as whole, as a tool for blogging and raising the profile of the desireland organisation. However, while the project sponsor fully appreciated the forum system as a knowledge sharing and creation tool, it was perceived by her to be non-intuitive and cumbersome to use in its present format, but indicated that re-development of the tool would be welcome, if funding was to become available sometime in the future.

The next chapter will summarise the project as a whole, within the back drop of the non profit sector. It will also outline how this research project and resulting Web 2.0 tools could meet the needs of other similar non profit organisations that rely heavily on volunteers and may have minimal IT skills and funding.

7. CONCLUSION

7.1 Introduction

This dissertation addresses knowledge sharing and communication within the non-profit sector, with particular focus on developing a set of open source Web 2.0 tools to support these processes within a community based non-profit organisation called desireland.

This dissertation was developed in conjunction with another dissertation, both dissertations addressing the requirements of this non-profit organisation.

 The other dissertation investigates the introduction of light-weight open source tools which encourage volunteerism, user participation and community awareness between stakeholders. A single acquisition was conducted to serve the purposes of both projects. As some areas of the acquisition were common to both projects this proved to be productive and effective. Other areas were very distinctively pertinent to the knowledge sharing project as identified, while the remaining sections were related to the other dissertation only. It was less time consuming on both the interviewers and interviewees, and easier on the interviewers to arrange one meeting with the interviewees instead of two separate meetings. It also gave both interviewees an overall view of the non-profit sector in general.

7.2 Problem definition and Research overview

This project builds on work completed as part of the Knowledge Acquisition and Modelling module of this MSc programme. An initial knowledge and elicitation was conducted for a volunteer project in partnership with the DIT Students Learning with Communities (SLWC) programme. SLWC promotes and supports community-based learning and community-based research initiatives for mutual benefit. The initial work was completed with the desireland project, a broadly-based community project grounded in "experiments in living systems technologies". It is a citizen-led action-based project located in Dublin 7 and as such is an exercise in social constructivism. This work resulted in the creation of an initial conceptual knowledge model for the

desireland project and identification of key challenges and barriers faced by this project in terms of volunteer recruitment and management.

This dissertation project has extended this work, working with a broader range of projects with the focus on investigating need, challenges and barriers to knowledge sharing in non-profit, volunteer dependent projects and designing a toolkit to support knowledge sharing in these projects. This was again conducted in partnership with the SLWC.

A generic set of mechanism and a generic tool-kit were designed to fit the needs identified by this group of projects. These mechanisms and tool-kit were tuned to the specific needs of volunteers within the desireland project, and were deployed and tested in this environment.

The desireland project offered a very appropriate test bed for this project. desireland is a community based project and therefore volunteers and participation are core elements of the project essential not only to ensure its survival and continuation but to its effectiveness as a project. The core issue is that the majority of the active desireland knowledge-base is tacit. Of approximately 50 individuals involved with the project, the primary driver and knowledge source is the project founder. If for any reason the project co-ordinator is unavailable, all project progress slows. There is a definite need to capture the founder's vision and how it is comprised, in order that the Project may progress in her absence. Similarly there is an issue with how people interact and participate with the project in any formal codified manner. There is no formal mode of interaction or scheduling of participation. Rather activities and interactions appear to be in an *ad hoc*, unrecorded but creative manner. The situation as described is a classic Knowledge Management issue – how may tacit knowledge be converted into explicit knowledge.

This project investigated the challenges of knowledge sharing and communication in non-profit organizations with a high dependence on volunteers. Projects of this type typically rely heavily on the knowledge of the volunteers for success and while many projects have some mechanisms through which they communicate and share knowledge such as a web presence, typically the knowledge is disparate, highly tacit, embedded in the minds of the people involved. A scattered approach is typical with

knowledge and information on several different forums managed by several different people with no obvious connection. There is unlikely to be a cohesive, coherent approach in place to retain volunteer knowledge, facilitate knowledge sharing and make use of valuable knowledge to improve current and future projects.

The attrition of volunteers has a potentially significant impact in a non-profit organization as the loss of volunteer knowledge can be extremely difficult to replace, New volunteers usually need a period of training within a non-profit organization, the loss of existing knowledge; can make the training process more problematic. It's crucial that such knowledge is retained in the organization preferably explicitly in electronic format, to allow new volunteers to access, share and contribute to the knowledge base

Indeed this proved to be the case in desireland, knowledge was stored in a very ad hoc manner on a myriad of different platforms and it was impossible to get consistent and valid information from any one source. The loss or lack of retention of volunteers led to loss of important tacit knowledge from within organization.

This project has focused on identifying how such projects store, communicate and facilitate sharing of necessary knowledge between the project and its volunteers and among volunteers themselves, use the knowledge of its volunteers and manage such knowledge to support current and future activities. A range of volunteer dependent projects were used to conduct the required knowledge acquisition and elicitation to identify the knowledge needs of such projects. The processes and toolkit designed were implemented in a specific project, the desireland project, to test and evaluate their effectiveness though are capable of being implemented in any similar non-profit organization.

Emphasis was sharing of internal knowledge and retention of knowledge when volunteers leave. This project aims were to codify and externalize existing tacit knowledge.

Focus was on collating, storage, categorization and making accessible existing knowledge within the organization for existing volunteers, potential volunteers, stakeholders and donors.

Mechanisms were investigated to facilitate user participation and sharing within the non-profit organization. Focus was also on making the organization and its projects visible, ensuring it has a strong on-line presence and had the ability to attract and retain

volunteers. The project identified and investigated an open source Web 2.0 toolkit to enhance the capture and recording of knowledge, the transfer of knowledge from person to person, the exploitation of knowledge and the stimulation of new knowledge within the project. An experiment was conducted and evaluated over a limited timescale, and while the initial results were encouraging in some aspects, it is expected that usage of other aspects of the tool may be improved with the project sponsors encouragement and participation in the future.

7.3 Contributions to body of knowledge

The research conducted in this dissertation highlighted lack of IT resources, lack of funding in general, and lack of expertise in hampering knowledge sharing in small voluntary organisations.

"Interviewer 1: Do you believe that xx makes full use of IT to achieve its social mission?

Respondent C: Absolutely not.   We are desperate (laughter).   Really, it's one of the big things. At every senior meeting I am at…   We have big plans and are rolling them out and I am on an IT Task Force to get things moving and we are achieving certain things but it's going to take another two to three years to get to where we want to be."
(excerpt from interview conducted with Organisation C on 12th December 2013).

The research has further shown how open source Web 2.0 tools can address these issues as Web 2.0 tools are typically free or of minimal cost and have a short learning curve, and by their nature encourage user contribution and participation. The tool has proven to be effective in desireland. It has contributed significantly to the exposure of the organisation and enabled it to build and enhance its on-line profile, and has made its knowledge base accessible to all stakeholders and potential volunteers. It has encouraged contribution to this knowledge and has provided platforms for sharing and creation of knowledge for its audience.

This research has also shown that Web 2.0 tools can be used easily and effectively, collating a myriad of different media types in a small non-profit organisation with minimal technical expertise and funding, and that these tools could be used with

minimal modifications and customisation in any similar organisation or small business with little technical expertise and funding.

7.4 Experimentation, evaluations and limitations

The aim of this research was not to be exhaustive, but to be a snapshot of knowledge sharing and communication in the non-profit sector. The organisations chosen represented a large range of non-profits in Ireland, all with similar ad hoc use of IT, social media and Web 2.0 tools. The literature review was somewhat limited due to the "lack of research of KM in the non-profit area" (Ragsdell, G, 2009).

The implementation of the experiment consisted of developing a WordPress Blog and website with on-line discussion forum platform to encourage user participation and knowledge sharing. WordPress is both a content management system and a blogging tool. The existing material was gathered from all of the disparate sites and organized into the new site, with static pages being created for the static information and a blog on the homepage for the project coordinator to constantly keep the information up to date and ensure that constant traffic is directed to the site, thus keeping the site high up in the search engine ratings. The content management system allowed for the collation, categorization and storage of all of the collected knowledge artefacts from the myriad of disparate platforms for ease of maintenance and accessibility to the project stakeholders and potential volunteers.

Indicators show that the project coordinator, while aspiring to the principles of knowledge sharing did not consciously champion the specific knowledge sharing platform – the on-line discussion forum. Barriers in the form of previous unsuccessful implementation of a similar principle arose and resulted in the reluctance of the project sponsor in using an existing community of practice (300 members) as a test bed for this tool. Results of the usage and effectiveness of this forum could have been much increased if these barriers had not existed.

Interestingly, while many others registered with the site through the forum registration, many failed to engage; this aligns with Matsche et al. (2012):

"practical experience has shown that an exchange of knowledge will not automatically occur on platforms that have been set up for this purpose. Information is read and used, but only few of the users make active contributions to such platforms and contribute their own knowledge. From the point-of-view of each individual user,

the most effective strategy would be only to extract information from such a platform, but not to contribute anything."

7.5 Future work and Research

While this toolkit was deployed within a small, non-profit, community organisation it is also capable of being deployed with some modifications, within other small organisations that face similar challenges such as lack of funding and technical expertise. It would appear to be an ideal option for any small start up company that has little budget for knowledge sharing tools.

Research indicated that some sort of strategy for deploying Web 2.0 tools/Social media is important, rather than the ad hoc nature of deployment as indicated by a majority of the research participants.

The development and implementation of such a strategy for non-profits could be researched and implemented with the help and guidance of the umbrella organisation for non-profits that participated in the current research. Indeed the toolkit that was developed for this research project could be made available for the use of other non-profits with similar barriers and challenges.

It was recognised that introducing an on-line forum in a non-profit organisation with transient volunteers is somewhat of a challenge, as there is no consistent set of volunteers to interact with it. Applying this project in an organisation with a more consistent volunteer base would possibly improve the outcomes of the experiment in relation to the specific knowledge sharing tool. However, indicators from research within these organisations highlighted that knowledge sharing needs more of a personal attitude or organisational change. When asked about the benefits of developing an on-line knowledge sharing platform/forum, one respondent articulated their lack of interest to moderate such a forum:

"Interviewer 1: It would be a meeting type of thing? But do you think it would be of benefit to have something technologically based that people could give ideas like a forum that people could….

Respondent A: Yes, maybe. They are setting up a website so maybe yes. My immediate reaction would be who'd man it? Who's going to look after it? 'Hopefully not me'. That's what I'm saying. You might come up with an idea like that. I think they are going to come up with a forum where people can go in and look at different

publications and stuff - an interactive website. I don't know what they call it but anyway… people can go in, post comments.." (excerpt of interview conducted with Representative A, from organisation A, 7th January 2013)

7.6 Conclusion

This chapter summarised the project in the non-profit research area. It gave an outline of the background to the project, the problem definition and the research overview. An extensive literature review was conducted addressing knowledge management, the non-profit sector and knowledge sharing within this context. Web 2.0 was discussed and usage of Web 2.0 tools both in profit and non-profit sectors were analysed. The usage of Web 2.0 tools as a knowledge sharing mechanism in the non-profit sector were investigated and articulated.

A knowledge acquisition was conducted using both quantitative and qualitative methodologies with a selected range of non-profit organisations, the results of which were used to inform the design of the experiment.

A lightweight open source tool called WordPress was identified as being suitable for the project requirements – facilitating knowledge capturing, sharing and storing knowledge in the desireland project. It is expected that the toolkit will continue to be used to capture, organise, externalise and transfer existing knowledge within desireland, creating new knowledge and continuing to facilitate engagement of its stakeholders and attract potential volunteers.

Metrics used to assess the success of the project were encouraging with a high number of users participating and engaging with the tool as a whole.

However, the usage of the discussion forum needs further motivation and encouragement from the project sponsor in this particular project, and a change of personal attitude/organisational change may be needed to further encourage knowledge sharing and user participation.

"*The greater the use of a knowledge sharing system, the greater one's use of the systems for knowledge sharing*" and "*the greater the perceived usefulness of the knowledge-sharing system the greater a user's participation in knowledge sharing*". (Sharrat and Usaro, 2003)

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APPENDIX A – SURVEY QUESTIONS AND OBJECTIVES

SECTION	QUESTIONS	OBJECTIVES
Section 1 – Personal & Organisation This section provides an overview of respondents in terms of roles & experience. Basic organisational information is elicited re. their area of work and membership.	11. Your Name 12. Your Organisation Name 13. What is your role in the organisation 14. If you are a Paid Employee in your organisation, please enter your Job Title 15. What is the primary area of work of your organisation? 16. How many volunteers are currently involved with your Organisation in Ireland? 17. How long have you been involved with Your Organisation? 18. Have you ever been a volunteer or paid employee with any other non-profit voluntary organisation?	Sections 1 & 2, consist of, largely, closed-ended questions and investigate issues such as organisational size, number of volunteers, number of paid employees, volunteer demographics, funding, etc. This initial elicitation provides the necessary respondent and organisational information required by both projects. Section 1 provides an overview of the organisation types, their respective social missions and their volunteers. It is expected that respondents will be either full-time employees in senior organisational positions or highly experienced volunteers (10 + years) – these respondents are expected to possess significant knowledge re. volunteerism, the training & selection of volunteers, Knowledge Management and Knowledge Sharing within the organisation and the use of IT within the organisation.
Section 2 – Funding Partner organisations range from those which have a variety of income sources to those with none. How does this affect issues such as training, IT, KM and the use of Web 2.0 tools?	19. How is your organisation funded?	Some partner organisations receive state funding and/ or have other significant sources of funding. Others have no sources of funding or relatively insignificant funding. It is argued that "through their fundraising activities nonprofits affect the amount of funds available to them" (Luksetich, 2008). These fundraising activities can impact ultimately upon state funding for the organisation. It is apparent that there is also a link between funding and Knowledge Management. It is held that NGOs routinely create programs from scratch instead of drawing on "best practices" developed by another organization. As a result, investment dollars from funding agencies are not effectively leveraged" (Hurley & Green, 2005)

			How does funding and the availability of funds affect the role and use of IT, the selection & training (if any) of volunteers, the use and efficacy of KM within the organisation etc?
Section 5 – Information Technology Introductory questions re. the use and benefit of IT in the organisation. Have the organisations the IT "pre-requisites" required? (Hackler & Saxton, 2007)		20. Does your organisation have a dedicated IT Department? 21. If you answered 'NO' to the above question – How does your organisation maintain its technology? 22. Does Your Organisation Fully Use IT to Achieve its Goals?	It is argued that "the diffusion of IT throughout the nonprofit sector has brought with it considerable potential for organisational change" (Hackler & Saxton, 2007) The use of IT and the ability of paid employees and /or volunteers responsible for the management and utilisation of IT has a vital role in organisational goal achievement. The application and use of IT has the potential also to play a key role in KM, knowledge sharing and knowledge mapping
Section 6 – Knowledge Management & Knowledge Sharing Elicitation of significance to this dissertation re. KM – knowledge sharing and knowledge mapping		23. Does Your Organisation Keep Formal Records on all work performed by Volunteers? 24. Please indicate how your organisation stores information about your volunteers, your projects & your work 25. How is knowledge primarily shared between the volunteers and paid-employees in your organisation? 26. When a Volunteer Leaves your Organisation is there a formal handover policy? 27. How is the departing volunteers knowledge captured? 28. Does Your Organisation Engage With Its Lapsed	KM is critical for voluntary organisation goal attainment. It is argued that nonprofit organisations "should establish and encourage an organizational culture that values and rewards the transferring of tacit knowledge to explicit knowledge among employees and workgroups" (Hurley & Green, 2005) The internal knowledge section focuses on questions relating to current practices for knowledge creation and sharing, identification of gaps in this process, identifying of areas where knowledge sharing solutions can be focussed. The questionnaire helped to identify the types of knowledge currently shared and the sharing of knowledge that would be beneficial to the organisation to share in the future. Questions focus on the capturing and retention of knowledge when a volunteer leaves the organisation so that the valuable knowledge that has been attained by the volunteer is not lost to the organisation.

		Volunteers?	
	-		
Section 7 – Web 2.0 Tools.

Introductory questions - to be developed in subsequent interviews. Provides a basis for the understanding of usage and understanding of such tools in partner organisations | 29. | Does your organisation currently use Web 2.0 Tools? | This provided a basic elicitation re. the use of Web 2.0 tools in partner organisations. Some of these already use some form of these tools while others do not. Can the use of such tools inform the development of this projects toolkit?

The questionnaire was used to elicit key requirements from the partners in terms of the types of tools currently in use and those required to support the knowledge sharing needs identified. It was also used to elicit information on the current knowledge sharing culture within the organisation . |
| | 30. | If you answered 'YES' to the above question – What Web 2.0 tools does your organisation currently use? | |

APPENDIX B (ANALYSIS OF SURVEY RESULTS)

SECTION 1 (of 7) - PERSONAL & ORGANISATION DETAILS

Brief Personal & Organisation Details
Your Name
Respondent 1, Respondent 2, Respondent 3, Respondent 4, Respondent 5, Respondent 6, Respondent 7, Respondent 8, Respondent 9, Respondent 10, Respondent 11, Respondent 12, Respondent 13, Respondent 14, Respondent 15
Organisation Name
Organisation A, Organisation B, Organisation C, Organisation D, Organisation E, Organisation f, Organisation G

What is your role in the organisation?

Volunteer	6	38%
Paid-Employee	9	56%
I am both a Volunteer and Paid Employee in the organisation	1	6%
Other	0	0%
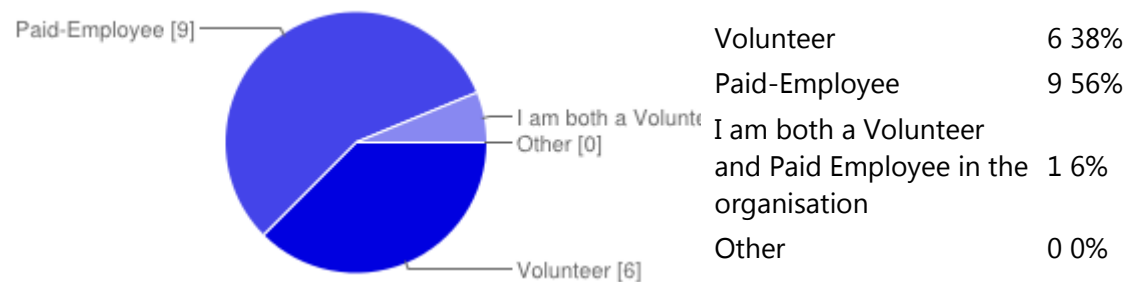
If You Are A Volunteer Please Specify How Many Hours Per Week You Volunteer

1-3 Hours Per Week	13	81%
3-6 Hours Per Week	0	0%
Over 6 Hours Per Week	3	19%
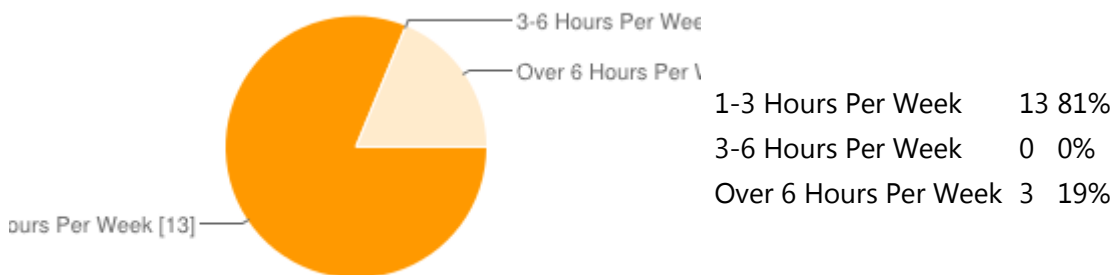
If you are a Paid Employee in your voluntary organisation, please enter your Job Title in the organisation
Shop Manager Director of Services Cork & Kerry director of services Co-Ordinator of Garden Centre Programme Director of Care Local Communications & Information Manager Executive Director Assistant Manage...

What is the primary area of work of your organisation?

Charitable (Includes relief of poverty & assistance to underprivileged)	7 44%
Education	2 13%
Environmental	1 6%
Health	2 13%
Arts, Culture & Heritage	0 0%

Sporting	0	0%
Work with people who are physically or mentally disabled	4	25%
Other	0	0%

How Many Volunteers Are Currently Involved With Your Organisation In Ireland

1-49 Volunteers	8	50%
50-99 Volunteers	1	6%
100-149 Volunteers	0	0%
150-199 Volunteers	1	6%
200-249 Volunteers	0	0%
250 + Volunteers	6	38%

How long have you been involved with your organisation?

0 - 5 years	4	25%
5 - 10 years	1	6%
10 - 15 years	3	19%
15 - 20 years	3	19%
20 - 25 years	3	19%
Over 25 years	2	13%

Have you ever been either a volunteer or paid employee with any other non-profit voluntary organisation?

Yes	14	88%
No	2	13%
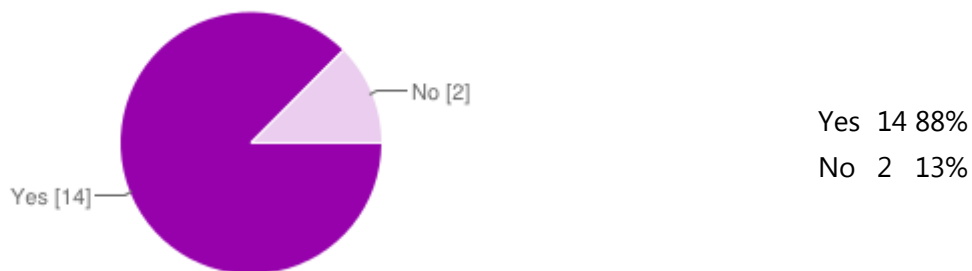
Section 2 (of 7) FUNDING

Brief description of your organisations funding

How is your organisation funded?

State Funding	14	88%
Public Donations	13	81%
Charitable / Church Funding	9	56%
Organisation Retail Outlets (e.g. Shops)	9	56%
Annual Collection	7	44%
We do not have any funding	1	6%
Other	6	38%

People may select more than one checkbox, so percentages may add up to more than 100%.

Section 3 (of 7) VOLUNTEERS

This section will briefly examine Volunteerism and the issues attracting volunteers

Does your organisation recruit new volunteers to assist in your work?

Yes	16	100%
No	0	0%
Don't Know	0	0%
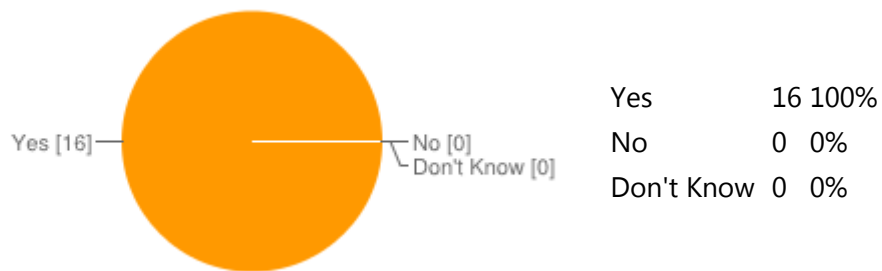
Is your organisation currently accepting applications from potential volunteers?

Yes	15	94%
No	1	6%
Don't Know	0	0%
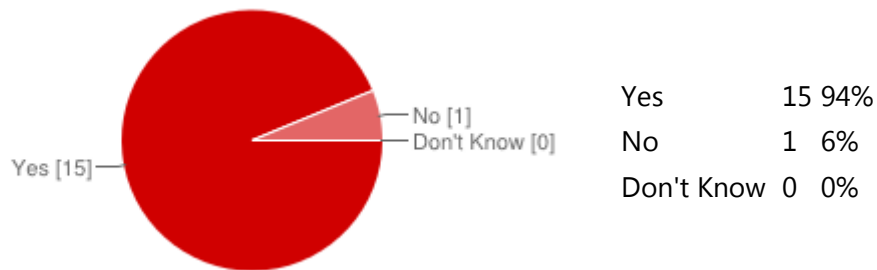
Does your organisation currently receive sufficient applications from people wishing to become involved as volunteers?

Yes - we have sufficient numbers of volunteers	5	31%
No - we require additional volunteers	10	63%
Don't Know	1	6%
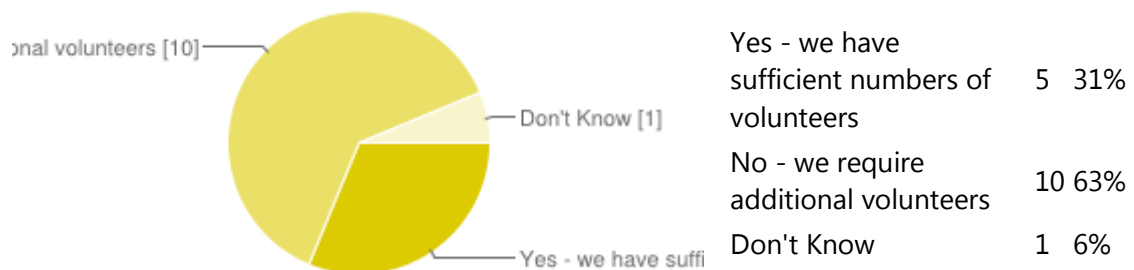
Is information easily available to potential volunteers about the work of your organisation?

Yes	12	75%
No	4	25%
Don't Know	0	0%
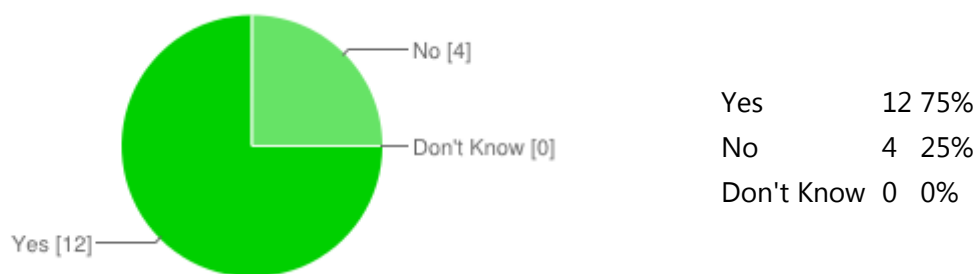
How Does Your Organisation Advertise For New Volunteers?

National Media - National Newspapers, TV, Radio	6	38%
Local Media - Local Newspapers, Local Radio	8	50%
Posters (e.g. in public areas - shops, churches etc)	9	56%
Online - via Organisation website, other websites	13	81%
Social Media - Twitter, Facebook etc	8	50%
Recruitment Meetings	7	44%
Other	6	38%

93

People may select more than one checkbox, so percentages may add up to more than 100%.

Does Your Organisation Experience Problems Retaining Volunteers?

Yes - this is an issue for our organisation	3 19%
No - this is not an issue for our organisation	4 25%
We experience issues with some volunteers leaving but this is not a major problem	8 50%
Don't Know	1 6%

If you answered 'YES' to the above question, please indicate the main reason for this

Volunteers have insufficient information about the goals and mission of the organisation	10 63%
Volunteers receive insufficient training	1 6%
Volunteers receive insufficient support from head office	0 0%
Other Reasons	3 19%
Don't Know	2 13%

Section 4 (of 7) SELECTION & TRAINING OF VOLUNTEERS

Is there a Selection Process for All Volunteer Applicants to your organisation?

Yes	11 69%
No	2 13%
It Depends upon the role	3 19%
Don't Know	0 0%
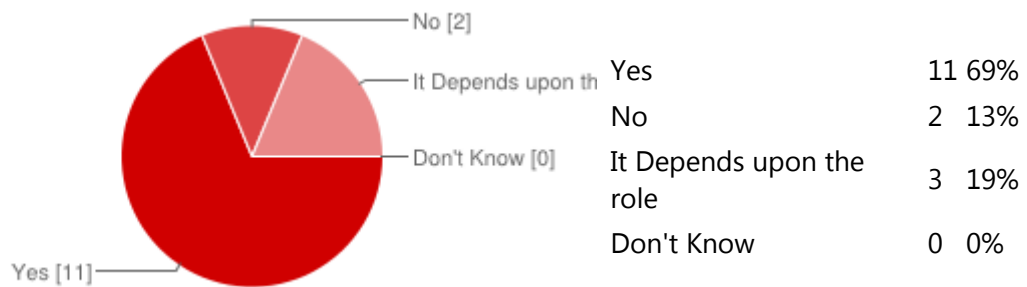
Is There a Training Process for all new Volunteers?

Yes	14 88%
No	2 13%
Don't Know	0 0%
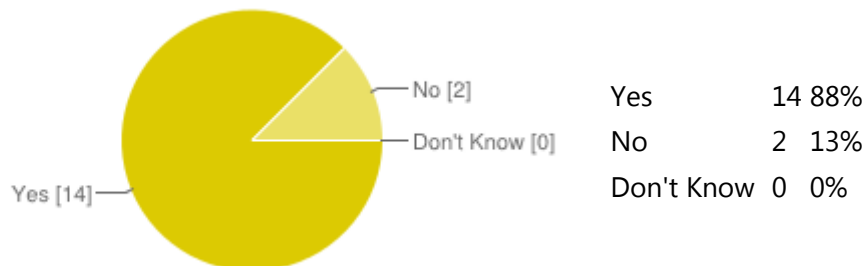
What type of training do new volunteers undergo?

Informal - 'on-the-job' training	5 31%
Formal - before the volunteer commences work	7 44%
It depends upon the work the volunteer is doing	3 19%
No Training is Required	1 6%

Who Trains New Volunteers?

Other Current or Ex-Volunteers   8   50%

Paid-Employees of the Organisation 11 69%

Third Party Specialist Trainers   6   38%

No Training Is Provided or Needed   1   6%

Other   0   0%

People may select more than one checkbox, so percentages may add up to more than 100%.

Section 5 (of 7) INFORMATION TECHNOLOGY (IT)

Does your organisation have IT Support
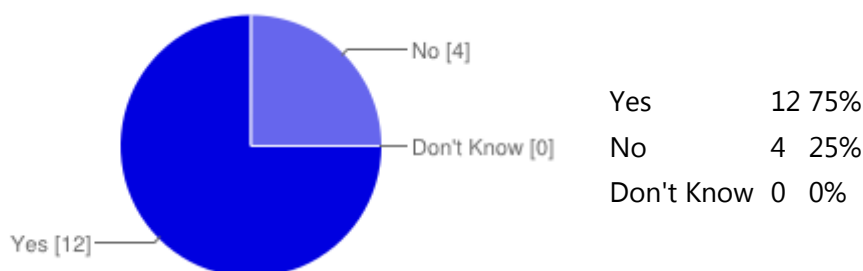
Yes   12 75%

No   4   25%

Don't Know 0   0%

If you answered 'NO' to the above question - How does your organisation maintain its technology (computers, laptops etc), website and online presence

A third party / outside agency is paid for IT services	13	81%
This is paid for by supporters of the organisation	0	0%
A volunteer donates his/her time to maintain the organisations IT and online presence	0	0%
We use the personal computer/laptop of a volunteer for our IT requirements	3	19%
We do not use IT and have a website / online presence	0	0%

Does Your Organisation Use IT for any of the following?

Attract & Recruit Volunteers (for example by the use of Social Media)	13	81%
Manage Volunteers (for example, by maintaining volunteer records)	12	75%
Maintain Records of Work Done by Volunteers	9	56%
Don't Know	2	13%

People may select more than one checkbox, so percentages may add up to more than 100%.

Section 6 (of 7) INFORMATION MANAGEMENT & SHARING

This section examines the management and sharing of information in the Organisation. Included in this is the sharing of information between volunteers and between volunteers and the organisation.

Does Your Organisation Keep Formal Records On All Work Performed By Volunteers?

Yes - all volunteer work in formally recorded   6 38%

No - there is no formal recording of work   5 31%

It depends upon the work done and the volunteers involved 5 31%

Don't Know   1 6%

People may select more than one checkbox, so percentages may add up to more than 100%.

Please indicate how your organisation stores information about your volunteers, your projects & your work

Technology - databases, on servers, personal computers 6   38%

Paper-based - files, notes   2   13%

Mixture of technology and paper-based   13 81%

Personal knowledge of volunteers (i.e. in 'their heads')   6   38%

Don't know   0   0%

People may select more than one checkbox, so percentages may add up to more than 100%.

How is information primarily shared between the volunteers and paid-employees in your organisation?

Technology Based - Email, Blogs, Wiki's, Intranet etc   4   25%

Paper Based - Files, Notes, Memoranda, Letters   3   19%

Informally - Conversations/phone calls etc between volunteers & paid employees   3   19%

A Mixture of all of the above   11 69%

There are no paid-employees in the organisation   1   6%

Don't Know   0   0%

People may select more than one checkbox, so percentages may add up to more than 100%.

When a Volunteer Leaves your Organisation is there a formal handover policy?

Yes	4	25%
No	4	25%
It depends upon the volunteer and the work they do	7	44%
Don't Know	1	6%
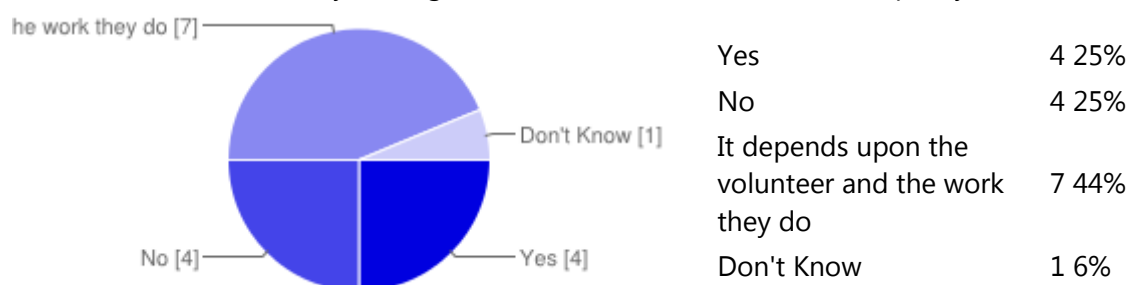
How is the departing volunteer's knowledge captured - e.g. in order that it may be passed to new volunteers ?

Informal Exit Chat   6 38%

Formal Handover with Notes taken   4 25%

Technology - e.g. web, email, blog, wiki, Facebook   1 6%

There is no capture of knowledge of departing volunteers   4 25%

I don't know if there is any capture of knowledge of departing volunteers 1 6%

Does Your Organisation Engage With Its Lapsed Volunteers?

Yes - We Regularly Keep In Touch With Our Lapsed Volunteers	3	19%
No - Once A Volunteer Leaves We Generally Do Not Engage With Them After That	5	31%
It Depends Upon The Volunteer And The Work They Did	8	50%
Don't Know	0	0%

Section 7 (of 7) SOCIAL MEDIA

Note: Social Media includes Facebook, Twitter, Blogs and Wiki's.

Does your organisation currently use Social Media?

Yes	13	81%
No	2	13%
Don't Know	1	6%
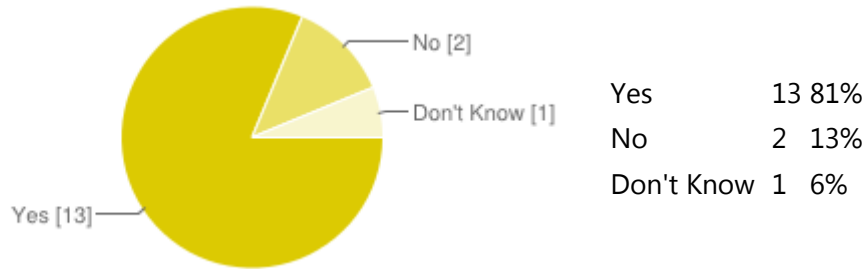
If you answered 'YES' to the above question - What Social Media does your organisation currently use?

Twitter	5	38%
Facebook	12	92%
Blogs	3	23%
Wiki's	0	0%
Other	1	8%

People may select more than one checkbox, so percentages may add up to more than 100%.

Thank You!

We would like to thank you for completing this questionnaire. Your assistance is very much appreciated.

Would You Agree To Speaking To Us About The Issues Contained In This Questionnaire

Yes	15	94%
No	1	6%
Please Contact Me To Discuss	0	0%
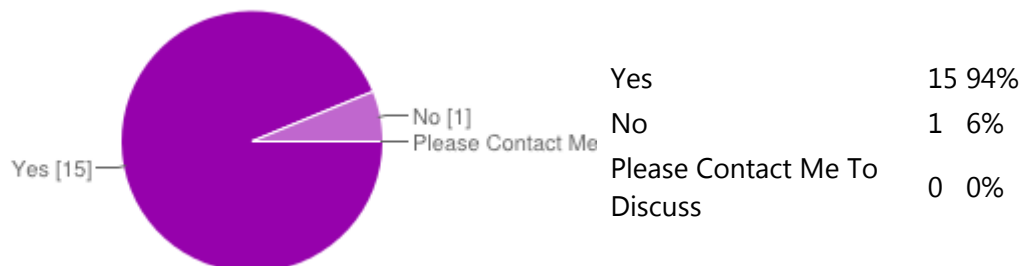
APPENDIX C – SAMPLE OF RESPONSES TO INTERVIEW QUESTIONS CODED USING MAXQDA

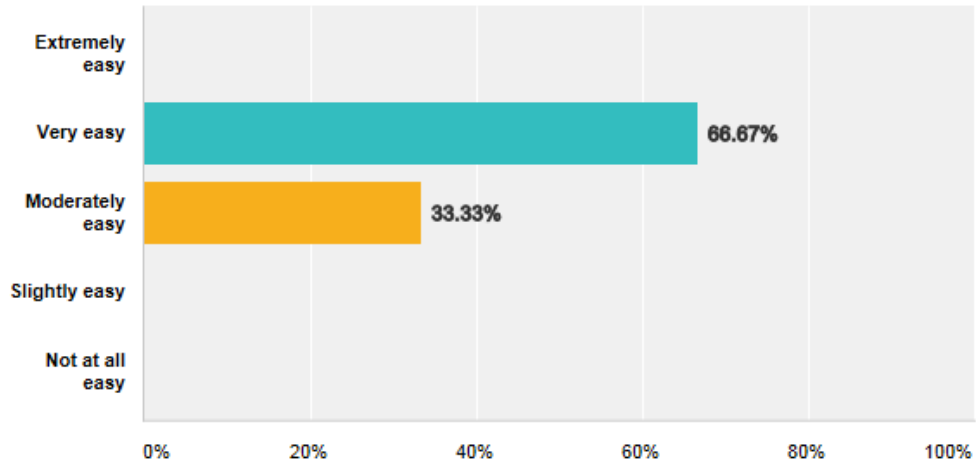|		
Organisation C, Respondent C	Knowledge Sharing	Interviewer 1: Do you think the volunteers are happy with knowledge sharing practices at the moment?Respondent C: No.Interviewer 1: They would be interested in improving it in some way.Respondent C: Absolutely. That's a real challenge too because volunteers fill out their quarterly reports and then it goes to the programme office and they don't hear..Interviewer 1: It's lost? They feel like they are doing this and there's no feedback? Respondent C: I think we are doing much better but I think it still needs to improve
Respondent E Interview Transcript 13 December 2012	Knowledge Sharing	Interviewer 1: Do you have a specific forum for volunteers to share information about what they've done – blogs or anything like that? Respondent E: No. Interviewer 1: Do you think it would be a good idea. Do you think the volunteers would be interested in something like that? Respondent E: I'd say they probably would be. Interviewer 1: They could swap information about stuff they've done or share ideas – or even information and lessons learned from different things… Respondent E: Yes I think that would be really useful. In fact in the process of developing this new site one of the things I want to put up is an ideas section so that people who are looking at the project or who are in the project would start making suggestions to the website.

Respondent C: Interview Transcript	Social Media	INTERVIEWER 1: From a recruitment or publicity point of view – but from a knowledge sharing perspective it might be. It might be more useful if it is developed more? RESPONDENT C: How much knowledge can you share by Twitter? INTERVIEWER 1: Not much by Twitter. But Facebook or Blogs, something like that? RESPONDENT C: Blogs definitely. We do a lot of blogging. All of our volunteers that are linked to donors here – they all blog. So, we have a blog every quarter from them. INTERVIEWER 1: How effective is that? RESPONDENT C: That's great. Donors love it and I think it's what differentiates us in the market. When someone knocks on the door – We're kind of the new missionary, if you like. The legacy is still there of people going overseas and doing great work and we've kind of filled that space. The other side of it is the Irish public are coming quite cynical about NGO's – wondering how much administration – where is all this money going and so forth. We have a very simple proposition - "Here is John going to Eritrea. Support him!" And people get it. They understand.
Respondent E: Interview Transcript 13 December 2012	Social Media	RESPONDENT E: I've been, I think, particularly poor at that. I've gotten better through the SPUDS project has been interesting from that standpoint… it forced me to start communicating and also to ask for help and so immediately I was working with people who helped me with the project but also, when we divided up the work we decided to start using Twitter and we also … I was using Facebook for personal reasons but I decided to.... I guess I did start with the Lifeline I developed a page for that. SPUDS has a page and I've gotten a lot better. I've sorted of gotten sucked into watching those graphs and seeing what captures peoples imagination and what doesn't.

APPENDIX D – RESULTS OF FEEDBACK SURVEY

Chart Type ▾ | Display Options ▾ | Export ▾
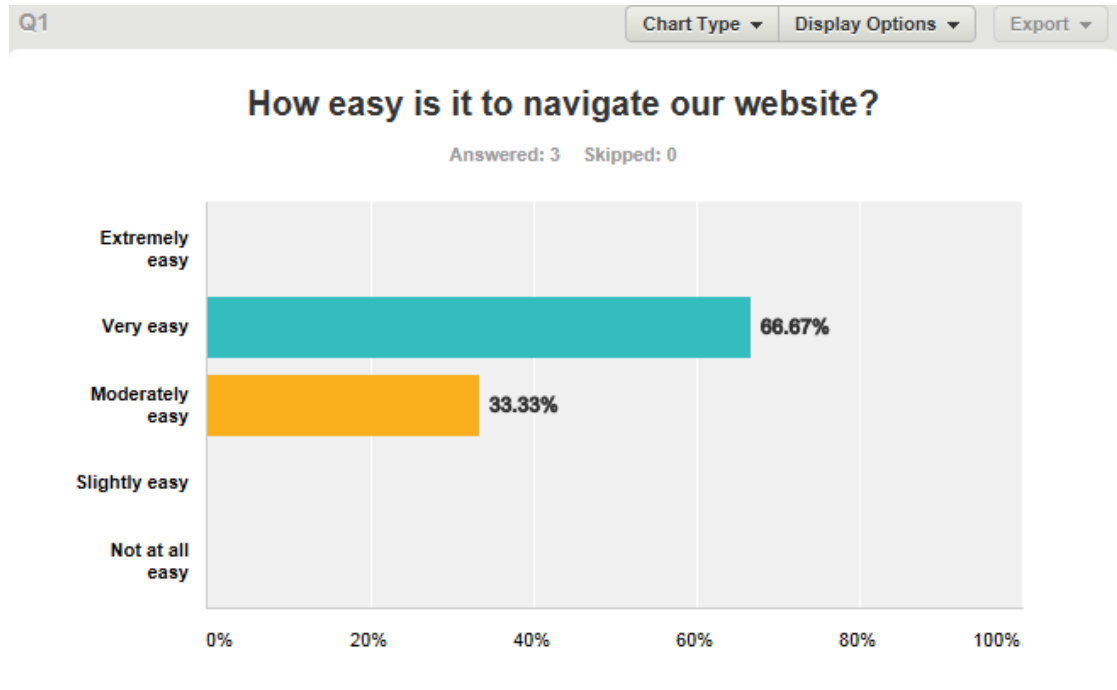
How easy is it to find the information you are looking for on our website?

Answered: 3   Skipped: 0

Chart Type ▾ | Display Options ▾ | Export ▾

How clear is the information available on our website?

Answered: 3   Skipped: 0

Chart Type ▾ | Display Options ▾ | Export ▾

How up-to-date is the content on our website?

Answered: 2   Skipped: 1

Q6   Chart Type ▾   Display Options ▾   Export ▾

How visually appealing is our forum section?

Answered: 3   Skipped: 0

Extremely appealing	
Very appealing	
Moderately appealing	100%
Slightly appealing	
Not at all appealing	

0%   20%   40%   60%   80%   100%

Q6   Chart Type ▾   Display Options ▾   Export ▾

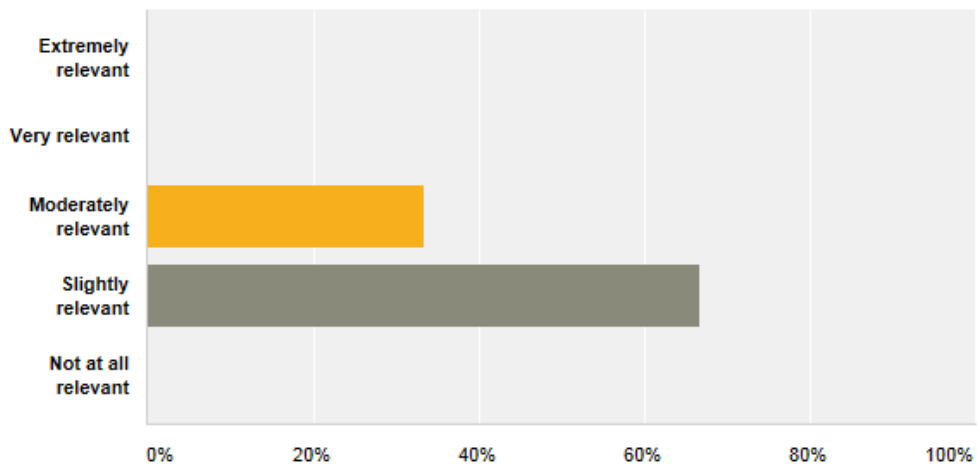## How relevant is the forum section to you?

Answered: 3   Skipped: 0

Extremely relevant	
Very relevant	
Moderately relevant	
Slightly relevant	
Not at all relevant	

0%   20%   40%   60%   80%   100%

103

Chart Type ▾ | Display Options ▾ | Export ▾

How often do you think you would use this means of communication/discussion?

Answered: 3   Skipped: 0

A great deal	
A lot	
A moderate amount	
A little	100%
None at all	

0%   20%   40%   60%   80%   100%

PAGE 6: General

Q11

Chart Type ▾ | Display Options ▾ | Export ▾

How likely are you to recommend our website to others?

Answered: 3   Skipped: 0

Extremely likely	
Very likely	
Moderately likely	
Slightly likely	
Not at all likely	

0%   20%   40%   60%   80%   100%