**Managing Volunteers' Experience on Flood Disaster using Storytelling**

by

Kong Shan - Nice
18010

Dissertation submitted in partial fulfilment of
the requirements for the
Bachelor of Technology (Hons)
Business Information System

FYP II MAY 2015

Universiti Teknologi PETRONAS
Bandar Seri Iskandar
32610
Perak Darul Ridzuan

CERTIFICATE OF APPROVAL

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Approved by,

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May 2015 Semester

<center>CERTIFICATE OF ORIGINALITY</center>

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.

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(KONG SHAN – NICE)

**ABSTRACT**

Knowledge plays a vital role in managing project. Generally, knowledge is being categorized into two: explicit and tacit. Tacit knowledge is the "know – how" knowledge that lies in expert"s head, while explicit knowledge is written and codified knowledge. Both are long term assets to every project and putting effort to nurture them is very critical. Though so, most projects are having difficulty in sharing tacit knowledge because of its nature that prevented the knowledge from being articulated and formalized. Therefore, integrating knowledge management into project enables tacit knowledge to be captured, codified, and then shared across the project. One of the best ways in sharing tacit knowledge is using storytelling. As part of knowledge management, storytelling offers sharing of a more structured and absorbable form of tacit knowledge. This paper shares a viewpoint of knowledge sharing in flood disaster relief missions since Malaysia is no stranger to its yearly monsoon season which strikes mainly in the East Coast and northern states like Kelantan, Terengganu, and other states as well. Experience based learning is very much applied in this project. Besides that, this paper is based on the research methodology of Feature Driven Development (under Agile Development Process).

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**CHAPTER 1:**     **INTRODUCTION**

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Almost every year in Malaysia, flood disaster occurs all over the country (Katuk, Ruhana Ku-Mahamud, Norwawi, & Deris, 2009). It is the most common occurrence of natural disaster which has been reported. According to a statistic, 31 out of 58 events of natural disasters which took place in Malaysia are floods. Flood disaster has also affected the most number of people in Malaysia compared to other natural disasters such as storm and epidemic with 85.4%.

Even with a lot of preparations being made, the current efforts to counteract the risks and danger of floods are still insufficient as what has been experienced from December 2014 until January 2015 flood crisis, in which almost 250, 000 people were displaced (PreventiveWeb, n.d.). Therefore, as much efforts as possible is necessary to be contributed in dealing with the after-effects of floods.

One of the shortcomings experienced during managing flood relief is the lack of coordination among agencies and NGOs, in which both parties are duplicating relief efforts. Besides that, there is also lack of preparedness among the volunteers. This can be seen during the flood relief missions in which there many limitations and shortcomings which can be observed.

Therefore, it is an utmost importance, that a platform should be constructed to collect, capture, and manage volunteers' knowledge in the best way possible. This is allow the viewers, especially volunteers to see and reflect the lessons learnt from other volunteers from various organisations.

**1.2     Problem Statement**

1. Knowledge or experience from volunteers who were involved in mission of assisting flood victims is not captured.
2. Lack of preparedness in becoming a volunteer – in terms of capabilities, requirements and vulnerabilities.
3. Lack of collaborative information and knowledge sharing amongst participating parties in volunteerism for flood victims.

**1.3     Objective**

1. To analyse a method which is useful to capture volunteers' experience for easy knowledge transfer and sharing.
2. To design a platform which will include the experience of participating parties, for easy reference of knowledge input for the volunteers of flood disaster.
3. To provide a clear view of the expectation of the job scope of a volunteer and to allow them to make wise judgment, as well as to be make a sense of the experience of previous works done by volunteers.

**1.4     Scope of Study**

1. This project focuses on capturing tacit knowledge from volunteers from non – governmental organisations (NGOs) who are involved in flood disaster relief missions only.
2. This project will be using website (HTML) as the main platform.
3. The prototype will be functional with the presence of Internet connectivity.

**CHAPTER 2:        LITERATURE REVIEW**

**2.1     Knowledge Management**

Knowledge management is referred to as a fashion of development of the management theory, in which an increasing number of academicians and the members of the public acknowledges the sustainability of competitive advantage of the enterprise stems from the very limited and precious resources, which are not totally emulated and applied.

Knowledge, in it of itself, has its own different interpretations of meanings, which varies according to a particular context.

Long ago, knowledge is connected to words like skill, intelligence, data, information, insight, intuition, ideas, experience or intuition (Zhao, de Pablos, & Qi, 2012). The classical Greece philosopher, Plato, defined knowledge as "justified true belief" (Gao, Li, & Clarke, 2008). Nonaka and Takeuchi (1995) later adapted that meaning and further defined, in terms of organisational level, as "a dynamic human process of justifying personal belief toward the truth" (Gao et al., 2008).

Knowledge could be extended its definition into two parts. It is either subjective and objective, or tacit and explicit. One of the first to do division on the knowledge of human beings is Polanyi (1966), in which she mentioned on explicit knowledge and tacit knowledge (Gao et al., 2008). Explicit knowledge is the visible part of knowledge. Polanyi explained it as decoded and noted down knowledge, conveyed in the form of data, scientific formulae, detailed elaboration, written instructions, or reference books (Gao et al., 2008). Tacit knowledge is the hidden knowledge. According to Polanyi, it is based on the act of carrying out something and unstructured, very personal and difficult to be shared (Gao et al., 2008). Having knowledge which is hidden does not mean that it has to stay as it is. Codification has to be done to make the tacit knowledge to become explicit, which could later be used in the generations to come.

Meanwhile, the word management is prevalently defined as the action in which a business or similar organisation is being organised and managed (Gao et al., 2008). There are two sections of the term management is referred to in this context, which are responsibility and control (Gao et al., 2008). Taylor, Fayol, and Weber first initiated the determined attempt of thinking rationally on the topic regarding management, in which consequently, experts, scholars, and professional people from different divisions of study in variety of points of view (Gao et al., 2008). They have been studying both the domains of responsibility and control, followed by introducing the understandings from science, technology, psychology, or complexity theory, in order to look into the related issues (Gao et al., 2008).

Collectively, the term "knowledge management", in fact, provides a deeper view of its meaning to its user, compared to when it is separately defined. The basic pre-understanding of knowledge management is being referred to the belief that, from information, data, and events are where knowledge gradually derived from (Gao et al., 2008). In the business world, knowledge management has to be made crystal clear in regards to its objectives, by organisations (Gao et al., 2008). They include effectual and well-organised management of existing knowledge in the organisation and the mobilisation of one's knowledge to achieve goals in the organisation (Gao et al., 2008).

Knowledge management has become rampantly accepted as a form of strategy of compelling, in which it is applied for the improvements and innovations of products and processes, not to mention for the adaptation and resumption of an organisation (Gao et al., 2008). There are a few processes which are worth to take note of and are frequently used in regards to knowledge management literature. These processes, which share some similarities, are knowledge creation, knowledge transfer, knowledge reuse (Gao et al., 2008).

One of the most hugely-cited knowledge creation models, is the SECI model. It touches on the spiral conversion between tacit and explicit knowledge, in which it is then further defined to demonstrate the essentials of spaces which are being shared by staff where they communicate among each other (Chua, Kaynak, & Foo, 2007).

Meanwhile, the steps of knowledge from one section in an organisation to another section is being referred to as knowledge transfer (Chua et al., 2007). The components involved in regards to flow of knowledge sharing are, the recipient, environment, content, and source (Chua et al., 2007). In addition, the steps of knowledge capture from one section of an organisation and shaping it for its continuous usage in other section of the organisation is called as knowledge reuse (Chua et al., 2007). Its function is to make a progression of habits which are proved in the form of lessons learnt. This is to avoid the same carelessness from occurring again in the future (Chua et al., 2007). According to Thomas et al (2001), knowledge reuse is perceived as the filtering of knowledge in a strategised method, in which knowledge at business-level is absorbed in the modus operandi at corporate-level (Chua et al., 2007).

## 2.2    Volunteering

The meaning of volunteering is referred to as "freely chosen and deliberate helping activities that extend over time, are engaged in without expectation of reward or other compensation and often through formal organisations, and that are performed on behalf of causes or individuals who desire assistance" (Chua et al., 2007). This definition is extended from the efforts of Cnaan et al. (1996) and carries the properties which commonly found in definitions used in Australia, where by the terms often used are formal organisation, free-will, excluding of payment, and in the service towards the people or the community at large (Chua et al., 2007). Besides that, volunteering is universally known as working without any sort of gain in monetary terms (Paull, Omari, & Bendl, 2015). According to Ford (2007), in which she stated in her guide to volunteering, proposed that volunteering is more incline towards being a duty rather than delectation, in addition of the focus towards the volunteer's dedication (Paull et al., 2015). An opinion of a wider significance for volunteerism is given by Oppenheimer (2008), in which he referred it to a person, whom assistance is provided without the intention for gain, in the form of skills, service, or time to an organisation and being carried out with willingness without a form of forcefulness (Waikayi, Fearon, Morris, & McLaughlin, 2012). According to Merril (2006, p. 10),

volunteerism is described as an active participation or contributions of energies, talents, or time (Waikayi et al., 2012). Merril added that volunteerism is never about the act of giving in terms of financial or the supply of materials as a sponsor/donor (Waikayi et al., 2012).

Merril (2006) extended her suggestion; it is often links to the common good for the charity or volunteerism-based organisation, though it may seem in some cases if that the reasons of individuals to volunteer may be diverse. Barnes and Sharpe (2009) defined volunteerism as the likelihood of self interest and wanting to be recognised (Waikayi et al., 2012).

According to Fiorillo (2011), he believes that volunteer motivation could be categorised into two parts which are, one who is focusing in the reward of intrinsic when offering help to others purely for that purpose, and one who has motives which is related to the rewards of extrinsic from the group activity as well as being part the work environment of volunteerism (Waikayi et al., 2012).

A motive of intrinsic in volunteering, which is self-satisfaction, has been a highly researched topic. Examining on why people choose to volunteer, Meier and Sutzer (2004) discovered that those who do volunteering, often have more job related contentment with life than non-volunteers (Waikayi et al., 2012). Other researches has uncovered the main reasons of volunteering are benevolence and humanitarian based at their core, as well as all of them have a feeling of empathy linked with offering help for others (Waikayi et al., 2012).

## 2.3 Storytelling

When it comes to facing issues, incidents, or any kind of events, everyone has a story to tell. A story would primarily has a beginning, a climax, and an ending. And what fun would it be if we do not record it for others to learn from the lessons that contain in the story.

Story telling is a process of transmitting event through images, words, sounds (Waikayi et al., 2012). Every culture has use technique in education, entertainment, and for instilling good moral values (Waikayi et al., 2012). Story telling has been applied extensively in the education sector in every school levels, which makes the process of learning to be interesting, fun, and also encouraging students to learn by themselves (Hariri, Marini, & Zin, 2011).

Story telling can be categorised into three classifications; digital storytelling, interactive storytelling, and traditional storytelling (Hariri et al., 2011). Digital storytelling is chronicle in nature and uses digital media which includes video, picture, sound, text, and music, where all of these elements helps in producing a story (Hariri et al., 2011). Interactive storytelling, or also known as virtual storytelling is the new innovative method, which uses the application of artificial intelligence. It allows users to be able to manage the story and the behaviour of characters involved in 3D animation, as well as to intervene into the story (Hariri et al., 2011).

## 2.4    Adoption of Knowledge Management in Natural Disaster

A tool in which it is yet to be used under in the context of knowledge management, among the scholars of knowledge management and practitioners but in which knowledge management being a crucial role in disaster situations (Chua, Selcan, & Foo, 2007). Overlapping phases, namely, response, preparation, mitigation, and recovery are comprised in cycle in the management of disasters (Chua, Selcan, & Foo, 2007). Up-to-date and precise disaster data are required in the preparation phase and so they are to be captured, processed, and structured into forms, for instance, detailed disaster management plans for the public at large (Chua, Selcan, & Foo, 2007). Upon accurately evaluating the severity of the disaster, stockpiling of supplies and planning as well as resources can be done proactively (Chua, Selcan, & Foo, 2007). Putting that into perspective, people would be able to make informed decisions, in which it is limiting the destructive effect of the disaster on lives and properties (Chua, Selcan, & Foo, 2007).

**CHAPTER 3:     METHODOLOGY**

**3.1     Project Development Methodology**

This project is carried out based on a tool called Agile Development Process (ADP) methodology. ADP can be considered as more refined compared to the more well-known document-driven software development methodology, which is the waterfall method, where the latter has been dominating many software development projects for decades (Serena, 2007). According to Serena (2007), 70% of software projects that make use of waterfall method have failed to meet their objectives. Selection of this method can assists this research-based project, by providing a path to analyse the knowledge sharing practices in a guided manner. Considerable amount of study the literature review section is done in order to acquire some insights and useful information for the benefit of this project.

*What is Agile Development Process?*

ADP is an iteration-based methodology instead of phase (Serena, 2007). It works through each iteration, where it is used to evaluate and to be responsive towards evolving and changing of user requirements (Serena, 2007). This make things very much more flexible as users would tend to change in their wants or may not perfectly manifest their ideas into words and requirements. Besides that, ADP allows small teams to work with each other, together with stakeholders, in order to define proof of concepts, quick prototypes, or other means of visual to be able to detailing out the problem to find possible solutions (Serena, 2007). The team's job would include iteration requirements, code development, testing, and results verification (Serena, 2007). In ADP, verification could take place much earlier in the process of development, which ultimately to allow stakeholders to clarify their requirements and at the same time, to ease changes (Serena, 2007).
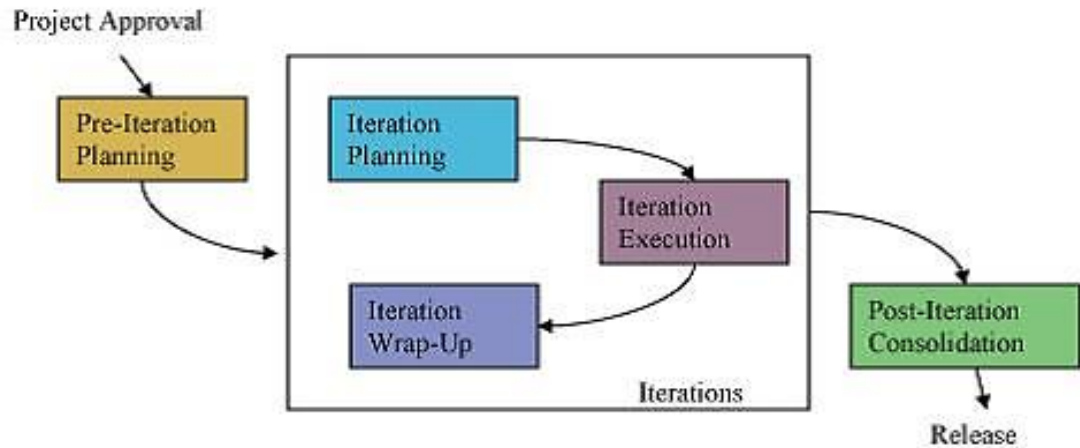
*Figure 1: A basic diagram of Agile Development Process shows a beginning of the planning stage, rapid repeats of the iteration stage, and a small part in consolidation before release (Source: Serena, 2007).*

ADP methodology characteristics consists of development of iterative, integration of continuous code, and the capability of handling changes in business requirements (Livermore, 2008). ADP also many divisions of techniques to choose from, which are as follows:

i)    Extreme Programming

A person named Kent Beck has developed Extreme Programming (XP) at Chrysler, while carrying out a job on a payroll project as a worker in a team of 15 members (Livermore, 2008). XP job is to improve software quality while cutting down schedules on functionality delivery (Livermore, 2008). It is based on a set of principles and practices, in which it includes the customer to collocate with the team of development, ownership of collective code, programming pairing, and the metaphors usage in order to define the situations of a business (Livermore, 2008).

ii)   Scrum

The methodology of Scrum was primarily created in order to handle business requirements which changes rapidly (Livermore, 2008). The name, Scrum, is taken from a strategy applied in the English Rugby sport (Livermore, 2008).

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Scrum works by moving a project forward in order to improve communication among the members of the team and dividing the work into a continuous collection of "sprints", which should go on from one to four weeks (Livermore, 2008).

iii)   Crystal Methods

Crystal Methods is based on the premise that people are contributing more towards the development of software projects compared to processes or tools (Livermore, 2008). It is a methodology elements collection or a toolkit, in which it helps organisations combine into suitable methodologies to match with individual projects. Big projects and projects which contribute to public safety needs to have more elements of methodology compared to non-critical, small projects (Livermore, 2008). Through Crystal Methods, organisations only invent and make use of as much of a methodology according to their project and demand of business needs (Livermore, 2008).

iv)   Feature Driven Development

A bank in Singapore has developed the Feature Driven Development (FDD) methodology, in which a process of iterative development that was both simple to use and could give precise progress for management, was required for the bank's development project (Livermore, 2008). The development was by Coad and DeLuca in order to fulfill the needs mentioned. This method can incorporate the technique of agile development with other methodologies (Livermore, 2008).

v)   WISDOM

Developed between the year of 1997 and 1999 for small companies who always have different business requirements compared to bigger companies, WISDOM (Whitewater Interactive System Development with Object Modules) is designed to cater the former who may not possess big resources

of finance which is vital for funding huge software development project (Livermore, 2008).

vi)     Traditional Software Development Methodologies

Before the existence of the omnipresent computing, the Internet, wireless networking, or XML, traditional SDM were developed and were effective and innovative in terms of existing technologies and business requirements which are mainly static (Livermore, 2008). Locking, freezing, or substantial documentation were requirements for the traditional SDM throughout the development process. It also needs to change according to existing software products and preparation of documentation before the change of a business requirement (Livermore, 2008).

For this project, Feature Driven Development (FDD) methodology is the most appropriate to be based on. This is because it is about a five step process, in which it does not require much training for a development team to be able to make use of it (Livermore, 2008). The first three steps are:

1. To develop a comprehensive model of the desired application.
2. To develop a listing of the features which are needed.
3. To emphasize on the listing mentioned into an implementation plan.

The fourth and fifth steps are where the development iteration takes place. For each development iteration, it produces an expected outcome for the customer. The list of features which has been prepared need to be reprioritized in order to ensure that the development team is working on the highest priority features with the utmost value according to user requirement.

Previously, it was mentioned that FDD has the flexibility, in which it work together with agile development techniques of other methodologies. For instance, FDD could very nicely with the XP practices of pair programing as well as daily standup meetings (Livermore, 2008). Besides that, the iterative fourth and fifth steps of FDD could

be time boxed to assists in managing the development process (Livermore, 2008). For this project, time boxing would help as it enables the admin of website to maintain better control of the development priorities and in determining the development of which functionality.

## 3.2    Project Activities

This project will be based on Agile Development Process, utilising the technique of Feature Driven Development (FDD) methodology.
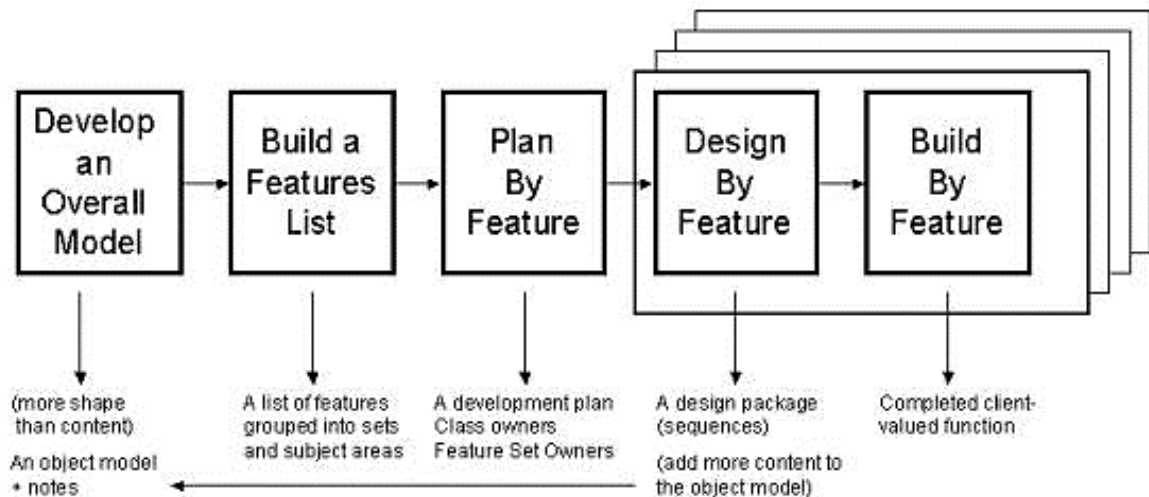


*Figure 2: Feature Driven Development process flow (Palmer, 2014)*

**Process 1:    Develop an Overall Model**

In this step, efforts at the beginning of the project is emphasized, which is to explore the problem structure. The problem statement is first drafted by searching for problems arise during the flood disaster concerning the volunteers on whether there is a culture of knowledge sharing after the relief efforts are carried out. Unlike the usual formal way of conducting a project at the beginning, FDD emphasizes cross-functional, collaborative,

and time-boxed activity. For this project, besides drawing the problem statement, other elements of this project is also being taken into considerations such as relevancy of project, time constraint, and research elements which need to be included in conducting this project.

**Process 2:     Build a Feature List**

By applying the knowledge and information gained during Process 1, this phase will now be focusing on features. In this project, a feature is referred to as a core value, in which the user will be using or valuing. In order to meet this requirement, a list of features is drawn out, which will include the selection on the suitable tool which can be utilised to capture a volunteer's knowledge, as well as other functions which can complement the tool. Besides that, in this phase, this project looks into the criteria which need to be identified to fulfill the list of features.

**Process 3:     Plan by Feature**

In this phase, it is the time to sequence out the features which have been identified earlier, into a high-level plan and assign the tasks that needs to be carried out. After identifying the elements which are to be included in this project, some physical activities need to take place. For instance, data collection and user requirement gathering plays an important role in this project. Furthermore, Unified Modelling Language (UML) diagrams are to be drawn out to describe the flow of this project and the process which takes place.

**Process 4 & 5:        Design by Feature / Build by Feature**

Process 4 & 5 are used in the phase where it highly-iterative and self-organising, which is to design and to implement the ideas and drawn out plans. In the process 4, User Interface (UI), taxonomy and database are assembled. Meanwhile, the coding part, which

is the most technical phase of this project will take place in Process 5 in the second phase of this project which is in FYP 2.

### 3.2.1 Data Collection

The purpose of data collection is to gather an insight of the knowledge sharing culture in an NGO that manage flood disaster relief mission, as well as to gather user requirement from the user.

The data collection method used in this project is by conducting interview sessions with volunteers from NGOs (non-governmental organisations) who have participated in the flood disaster relief efforts in Malaysia. This method is the only chosen method to collect data due to the fact the appropriateness is very high, in which response from the questions given to the volunteers can be used as user requirement. Besides that, interview sessions allow the project developer to explore on the knowledge sharing culture in volunteers' respective NGOs and reflects how important it is to have a platform which provides knowledge sharing and lessons can be learnt.

**3.2.2    The Interview**

The interview session is accordance to specified themes, in which there are five (5) themes in total containing questions which are asked to volunteers. This method of sorting out the questions according to theme helps to assists the interviewer to get to know the interviewee, who is the volunteer and ultimately to get answers which are relevant to this project. The questions are as follow:

| THEME | PURPOSE | THE QUESTIONS |
|---|---|---|
| 1.    Tacit knowledge sharing culture | To identify and understand the knowledge sharing culture in the particular NGO | • Is there any sharing session conducted after a volunteering phase is completed at the flood disaster area?<br>• Do you think it is necessary to collect and gather the experience of volunteers from previous flood relief efforts? Please explain why. |
| 2. Importance of preparedness in volunteering activity | To identify on whether volunteers equipped themselves with some level of preparedness before taking part in the flood disaster relief efforts | • Do you think that it is necessary to train volunteers first before allowing them to be part of the volunteering team? Why? |
| 3.    Problems encountered during flood relief efforts | To identify on whether the volunteer felt that he or she could have known the problem prior going to the flood disaster zone | • When you are encountering a problem or you saw your volunteering team member in a difficult situation, do you |

| | | wish that you would know it earlier before? |
|---|---|---|
| 4. Current volunteers' level of preparedness during flood disaster relief efforts | To identify the current level of preparedness of volunteers in their respective NGO | • What is the level of preparedness you witnessed on other volunteers or even yourself during the flood disaster relief efforts? (Rank 1 to 5, 1 being the worst, 5 being the best). Please explain why. |
| 5. Insight to the knowledge sharing platform | To identify the relevancy of providing a knowledge sharing platform to capture volunteers' experience | • In your point of view, what is the most effective way of capturing a volunteers' experience?<br>• Do you think recording is the best of capturing the volunteers' experience? Why? |

*Table 1: Questions asked to volunteers of flood disaster relief efforts.*

## 3.3 Gantt Chart

| Number | Activities | \ Semester | January 2015 Semester (Week) | | | | | | | | | | | May 2015 Semester (Week) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 1 | 2 | 3 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | Planning Phase | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.1 | Select project topic | | R | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.2 | Identify problem statement | | | R | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.3 | Define objectives | | | R | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.4 | Project title proposal | | | | R | | | | | | | | | | | | | | | | | | | | | | | |
| 1.5 | Define scope | | | | R | | | | | | | | | | | | | | | | | | | | | | | |
| 1.6 | Literature Review | | | | | R | | | | | | | | | | | | | | | | | | | | | | |
| 2 | System Analysis | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.1 | Literature review | | | | | R | R | R | R | | | | | | | | | | | | | | | | | | | |
| 2.2 | Design | | | | | | | | | R | R | R | | | | | | | | | | | | | | | | |
| 2.3 | Interim report | | | | | | | | | | | B | | | | | | | | | | | | | | | | |
| 2.4 | Proposal defence | | | | | | | | | | | | B | | | | | | | | | | | | | | | |
| 3 | System Design and Coding Phase 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.1 | Application design | | | | | | | | | | | | | R | R | R | | | | | | | | | | | | |
| 3.2 | System coding | | | | | | | | | | | | | R | R | R | R | R | | | | | | | | | | |
| 3.3 | System testing | | | | | | | | | | | | | | | | | | R | | | | | | | | | |
| 4 | System Design and Coding Phase 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.1 | Review application | | | | | | | | | | | | | | | | | | | R | | | | | | | | |
| 4.2 | Debugging major problem | | | | | | | | | | | | | | | | | | | R | | | | | | | | |
| 5 | System Prototype | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.1 | Pre - Sedex | | | | | | | | | | | | | | | | | | | | B | | | | | | | |
| 5.2 | User testing with user | | | | | | | | | | | | | | | | | | | | R | | | | | | | |
| 6 | System Design and Coding Phase 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.1 | Review application | | | | | | | | | | | | | | | | | | | | | R | | | | | | |
| 6.2 | Debugging minor problem | | | | | | | | | | | | | | | | | | | | | R | | | | | | |
| 7 | Implementation and Closing | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.1 | Submission of dissertaton (Softbound) | | | | | | | | | | | | | | | | | | | | | | B | | | | | |
| 7.2 | Implementation testing for user | | | | | | | | | | | | | | | | | | | | | | | Y | | | | |
| 7.3 | Closing | | | | | | | | | | | | | | | | | | | | | | | Y | | | | |
| 7.4 | System release | | | | | | | | | | | | | | | | | | | | | | | | Y | | | |
| 7.5 | Viva oral presentation | | | | | | | | | | | | | | | | | | | | | | | | | B | | |
| 7.6 | Finalisation of dissertation | | | | | | | | | | | | | | | | | | | | | | | | | | Y | |
| 7.7 | Submission of dissertaton (Hardbound) | | | | | | | | | | | | | | | | | | | | | | | | | | | B |

**Legend:** R = Completed activity (red) · B = Milestone (blue) · Y = Activity expectation period (yellow)
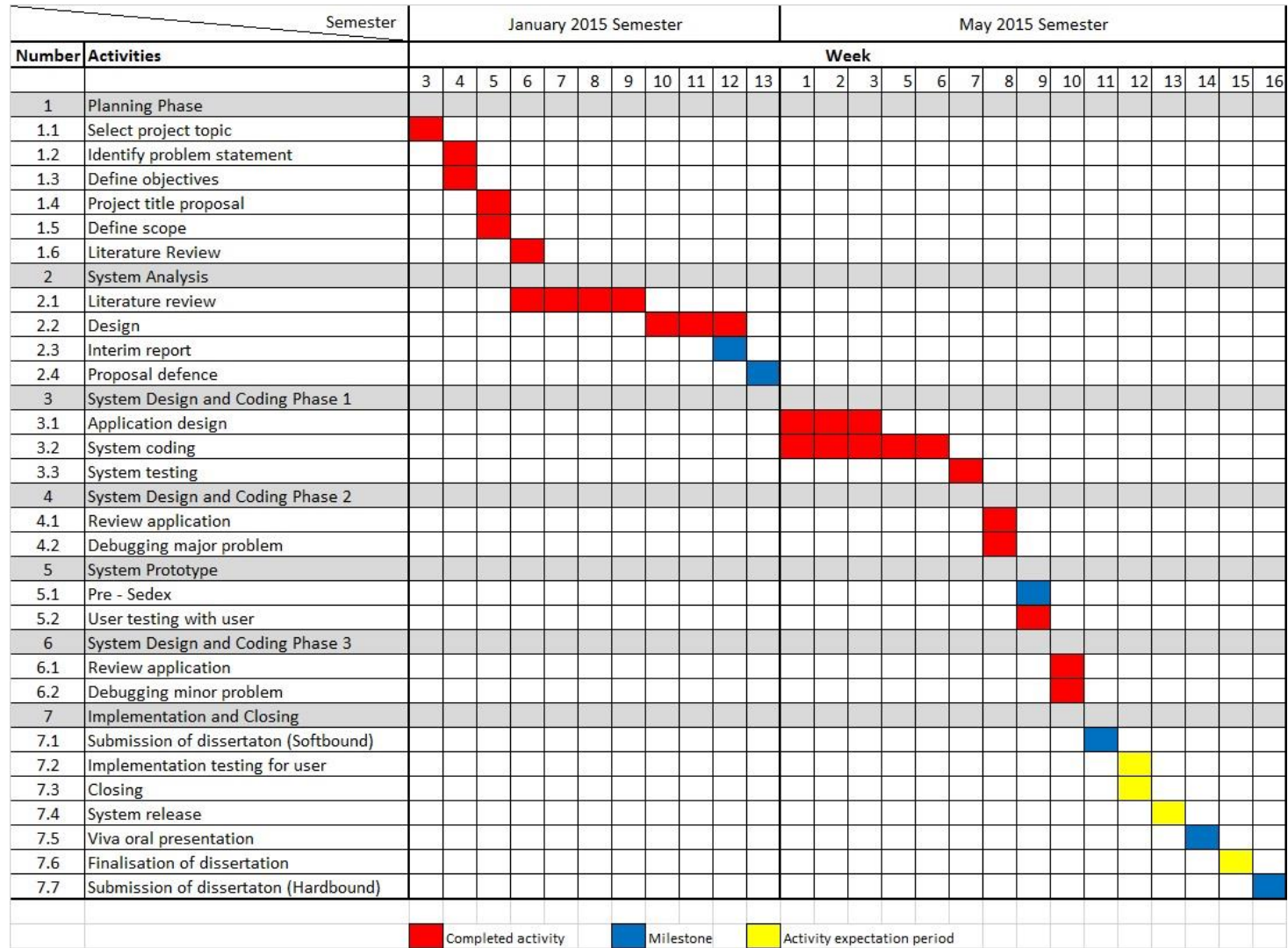
*Figure 3: Gantt chart of FYP I & II*

## 4.0 RESULTS & DISCUSSION

## 4.1 Interview and Discussions with Volunteers who were Part of a Flood Disaster Relief Effort

A total of 2 interviews with flood disaster relief effort volunteers have been conducted on separate occasions. The purpose of the interview sessions is to identify and understand the knowledge sharing culture on the volunteering activity their NGO are carrying out to help the flood victims.

| Name | Name of NGO | Date and day of interview | Type of interview |
|---|---|---|---|
| 1. Amni Haslinda bt Alpandi | i-Bantu IKRAM | 18th March 2015 Wednesday | Face to face interview |
| 2. Abdul Aziz bin Khamaruzaman | i-Bantu IKRAM | 19th March 2015 Thursday | Face to face interview |

*Table 2: Interview profile*

From the first interview, the volunteer mentioned that currently, there is a knowledge sharing culture during flood relief effort, in which the volunteers would engage in a post-mortem session. Besides that, she agreed that it is necessary to collect and gather the experience of volunteers from previous flood relief efforts, so that there will be improvement in the next flood relief mission. Furthermore, the volunteer agreed that there should be a training given to the volunteers first before allowing them to be part of the volunteering, to ensure that the volunteers carry out their tasks with enthusiastic manner and the objectives of relief efforts can be met.

Meanwhile, from the second interview, the volunteer agreed when asked he wished that he knew the problem or the situation before it really happen. For instance, he mentioned that there were not enough volunteers during a critical time, but then again,

there were too many volunteers came in to an affected area which already been cleaned. When asked on whether he thinks that video-recording is the best way of capturing the volunteers' experience, he agreed. He explained that through a video-recording, the video is able to give a good picture of a given situation. Compared to reading a news, people are more attracted to watch a video.

## 4.2 System Architecture
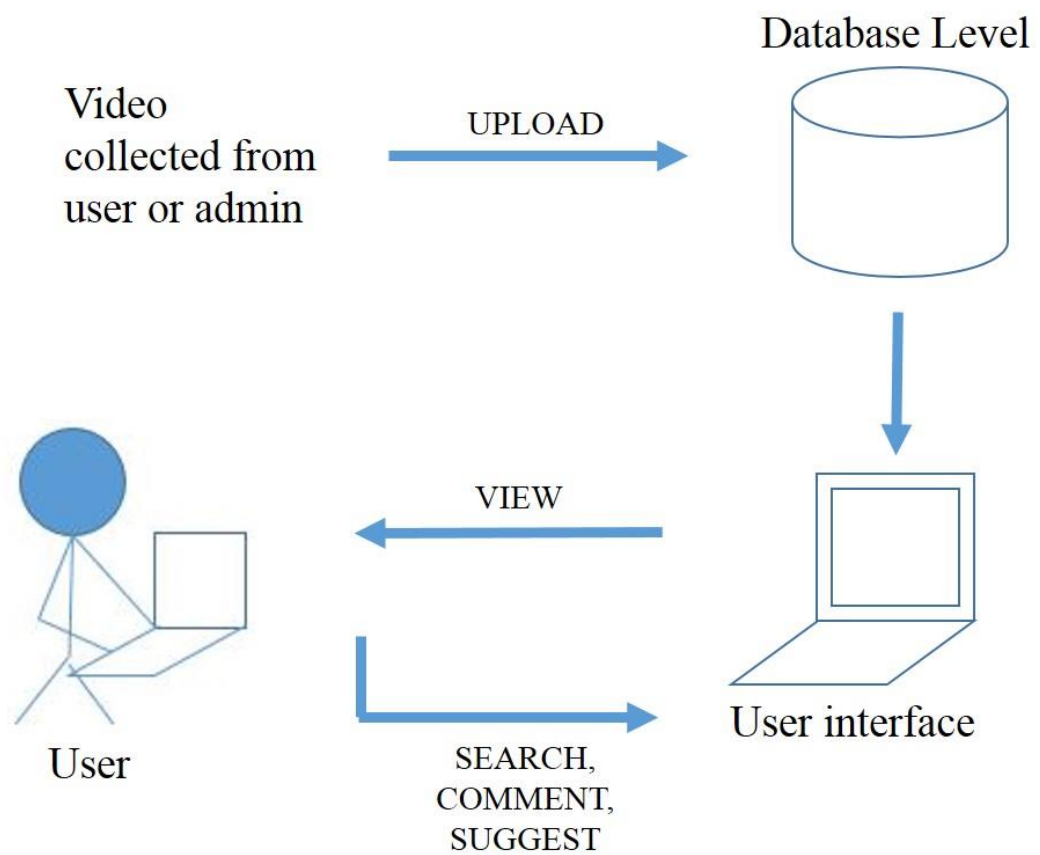


*Figure 4: KnowledgeFlood System Architecture*

**4.3    Flow Charts**



*Figure 5: KnowledgeFlood Flow Chart for User*

**Flow Chart on the Admin's Interaction
with KnowledgeFlood**



*Figure 6: KnowledgeFlood Flow Chart for Admin*

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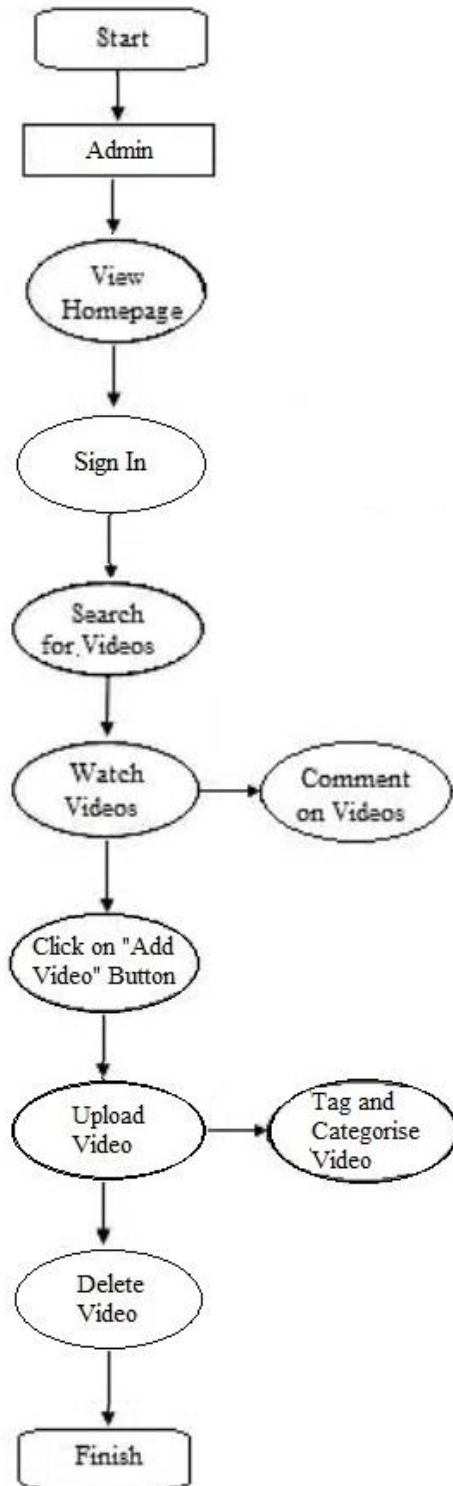
There are two flow charts for KnowledgeFlood; for user and admin. When user and admin type in http://knowledgeflood.byethost7.com in their browsers, they will be directed into the homepage of KnowledgeFlood. For user, he/she can search, watch, and comment the videos in KnowledgeFlood. If user wants to upload a video, he/she needs to sign in into their account. If user is a new user, he/she needs to create a new account which is free of charge. User can also choose to keep in touch with admin, and that is the end of flow chart for user. On the other hand, admin have to sign in first, before proceeding into the next steps. Admin can do every steps that user does, with added steps, in which admin can delete a video, and that is the end of the flow chart for admin.

## 4.4    Sequence Diagrams
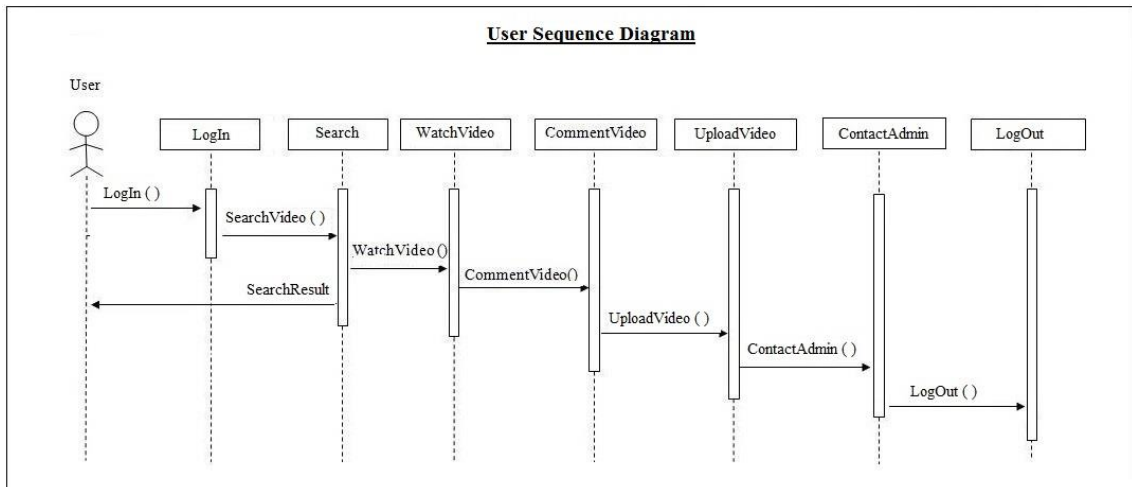


*Figure 7: User Sequence Diagram*

The sequence diagrams show the steps shall be taken by the user and administrator.
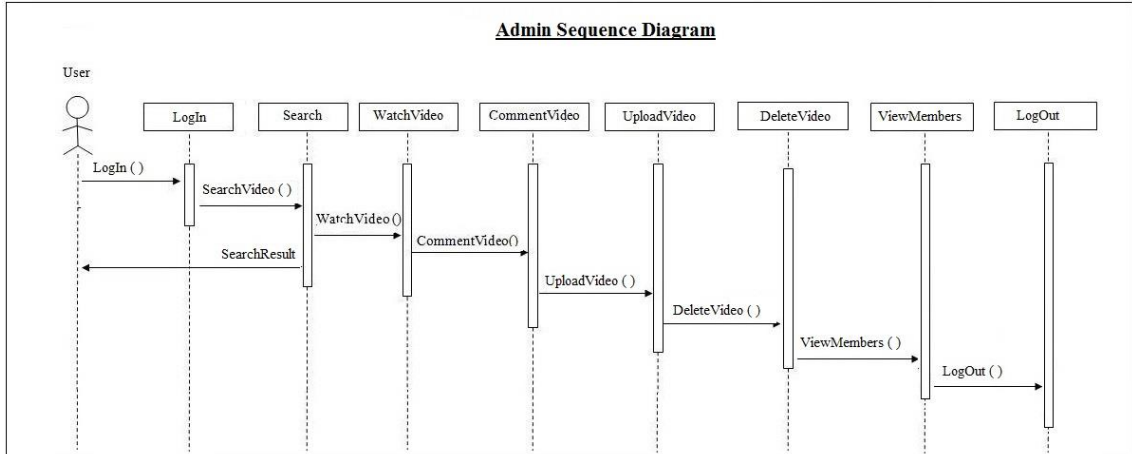


*Figure 8: Admin Sequence Diagram*

The sequence diagrams are constructed based on the functionalities of KnowledgeFlood. The key elements that KnowledgeFlood provide to users are Log In, Search, Watch Video, Comment Video, Upload Video, Contact Admin, and Log Out. On the other hand, admin are given more elements with the added functions which are, Delete Video, and View Members.

## 4.5    Technology used



*Figure 9: WordPress Logo*

WordPress is chosen to build KnowledgeFlood because it is an available resource which is free. WordPress is easy to handle, less time consuming, and troubleshooting error is very minimal. WordPress also allows KnowledgeFlood to be easily searched on Google. Therefore, it drive more traffic to KnowledgeFlood. WordPress is a type of Content Management System (CMS) which makes publishing content on the web to be very simple. WordPress is also customizable for SEO (search engine optimisation), Social Engagement, and ultimately Google friendly. Besides that, WordPress is composed of simpler code compared to traditional websites, which will make it easier for Google to view KnowledgeFlood.

## 4.6    User Acceptance Testing (UAT) Analysis

A total of 14 people had participated in the User Acceptance Testing. The followings are the results gathered:

**Were you a volunteer for a flood disaster relief mission in Malaysia?**
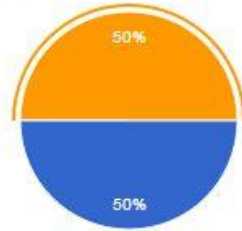


| | | |
|---|---|---|
| Yes | 7 | 50% |
| No | 0 | 0% |
| Not yet, but would like to some day :) | 7 | 50% |

**What do you think of KnowledgeFlood at first impression?**
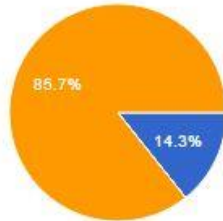


| | | |
|---|---|---|
| Very organised | 2 | 14.3% |
| Overly structured | 0 | 0% |
| Just nice | 12 | 85.7% |

*Figure 10: Feedback on volunteerism on flood disaster and users' first impression of KnowledgeFlood*

From Figure 10, it can be seen that there are half of the 14 participants have joined a flood disaster relief mission, the rest would like to join in the future. 12 of the participants have a positive first impression towards KnowledgeFlood by agreeing that it was just nice.

**How do you rate the user friendliness when browsing through KnowledgeFlood?**



| | | |
|---|---|---|
| =(: 1 | 0 | 0% |
| 2 | 0 | 0% |
| 3 | 2 | 14.3% |
| 4 | 6 | 42.9% |
| =): 5 | 6 | 42.9% |
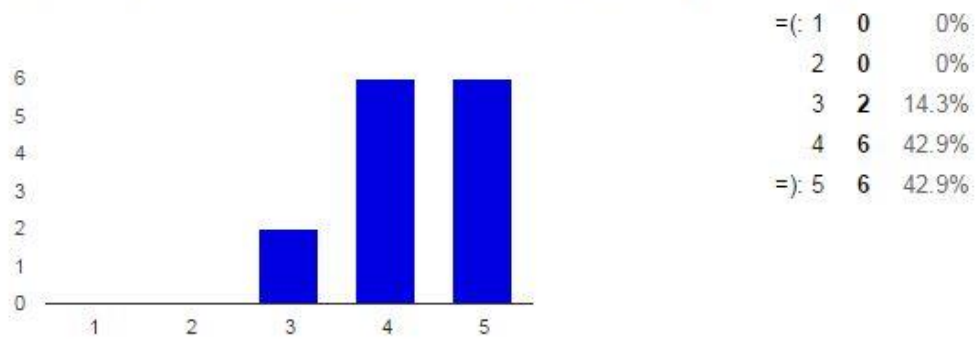
**How do you find the functionalities of KnowledgeFlood?**



| | | |
|---|---|---|
| They are just nice :) | 13 | 92.9% |
| Other | 1 | 7.1% |

*Figure 11: Feedback on user friendliness and functionalities of KnowledgeFlood*

From Figure 11, it is clear that most of the respondents gave a high rating towards the user friendliness of the KnowledgeFlood. On the other hand, almost all of the respondents felt satisfied with the functionalities of KnowledgeFlood. (Functionalities such as Categories, Tags, Recommended Videos, Popular Videos, Comment Section, Search Box, Sign In, Register Section, Upload Video form, etc.)

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**Do you think KnowledgeFlood would help volunteers-to-be before they go for flood disaster relief missions?**

| | | |
|---|---|---|
| Yes | 14 | 100% |
| No | 0 | 0% |

100%
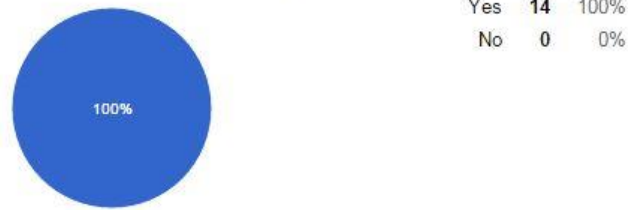
**Did you get any new information or any input from KnowledgeFlood?**

| | | |
|---|---|---|
| Yes | 14 | 100% |
| No | 0 | 0% |

100%

*Figure 12: Feedback on the potential of KnowledgeFlood to help volunteers-to-be and its reliability to provide new information*

Figure 12, it is found that all respondents unanimously agreed that KnowledgeFlood could help volunteers-to-be before they go for flood disaster relief missions. Besides that, 100% of the participants found new information from KnowledgeFlood.

From the UAT, there were some comments given with regards to KnowledgeFlood and the following was found to be the most profound:

> *"KnowledgeFlood is a great platform for volunteers-to-be to get the picture of what they're going to face. It helps in terms of preparing the volunteers-to-be mentally." (18th August 2015)*

**4.7 Prototype**

**4.7.1 Homepage**



*Figure 13: Snapshot of KnowledgeFlood homepage*

**4.7.1.1 Tabs**

Figure 11 shows the snapshot of KnowledgeFlood homepage. The homepage has three tabs which are "Home", "Video", and "Get in Touch". "Home" tab leads the page viewer to the homepage of KnowledgeFlood, whereas "Video" tab leads the page viewer to the videos featured in KnowledgeFlood. Last but not least, "Get in Touch" tab allow users to give feedbacks or would like to share their experience a little bit further.

**4.7.1.2 Search Box**

The homepage is also equipped with Search box which allows the user to key in the keywords for the knowledge that they are looking for. It is developed using KM concept that is knowledge taxonomy. Every knowledge will be tagged accordingly and if the search matches the tags, then the knowledge will be displayed.

**4.7.1.3 Sign In**

The "Sign In" button allow existing users and admin to sign in into the website. For those who are new at KnowledgeFlood, they will need to create a new account which is free of charge.

### 4.7.2    Tags and Categories
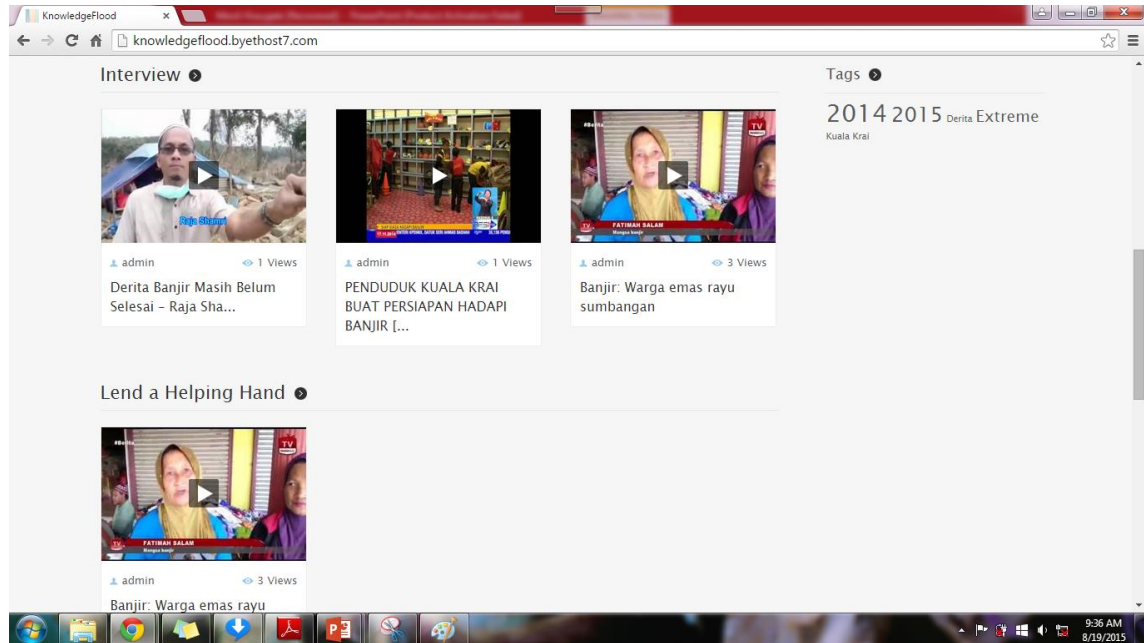


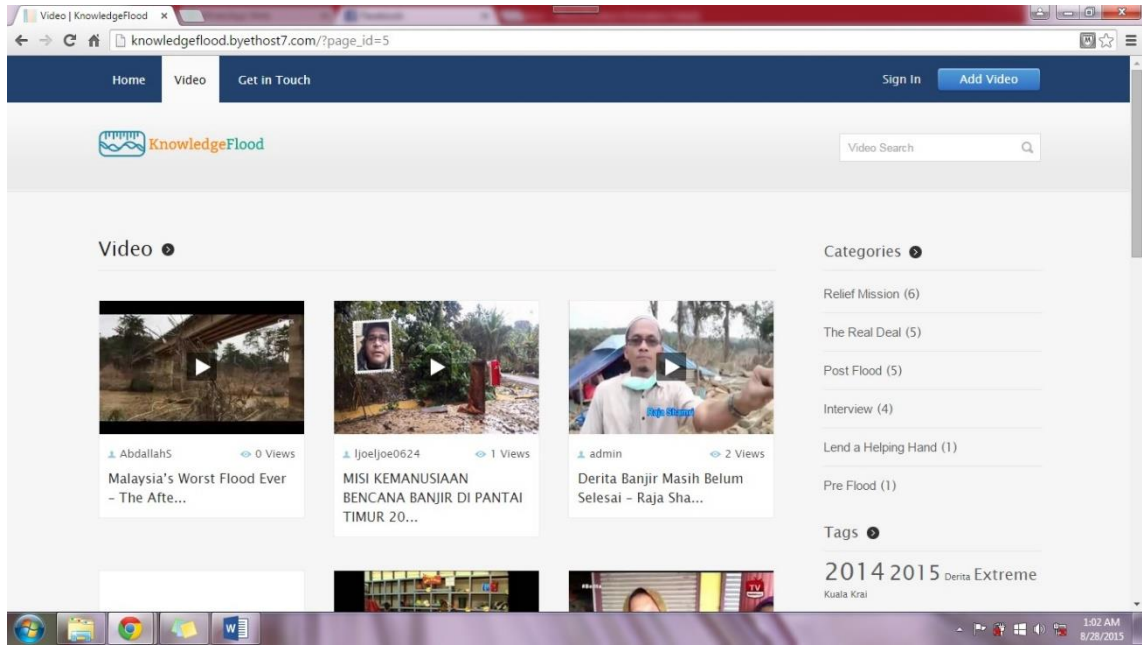*Figure 14: Snapshot of Tags and Categories of Videos*
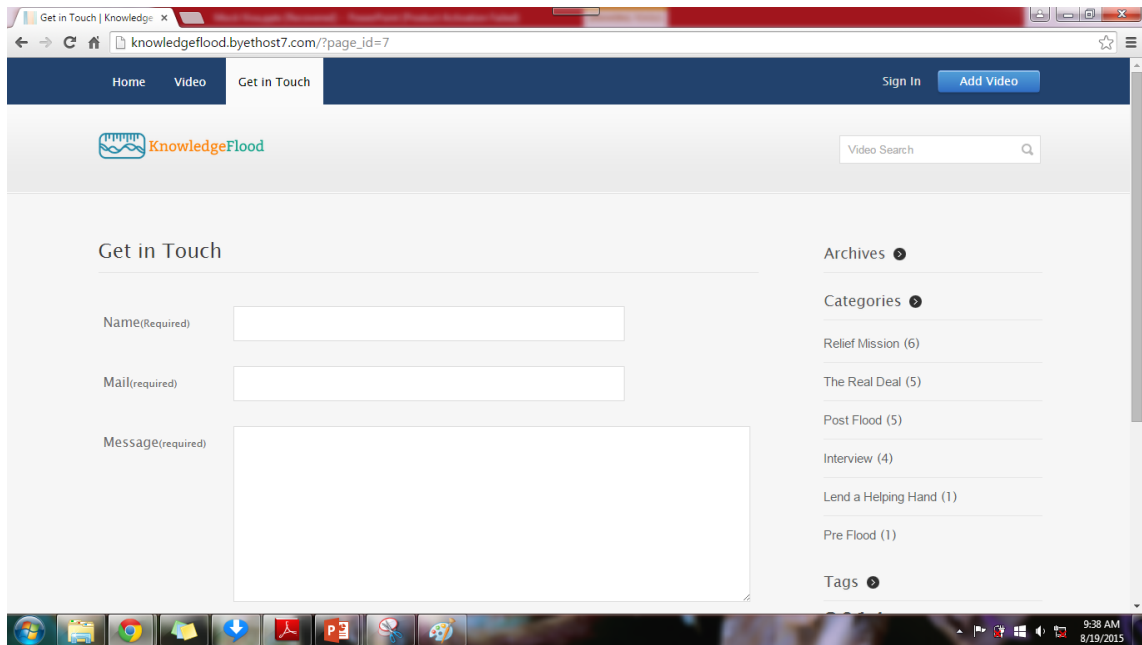
*Figure 15: Snapshot of Video tab*



*Figure 16: Snapshot of the Get in Touch tab*

For Categories with the reference of Figure 14, it implies the knowledge taxonomies in which the knowledge being grouped into few categories. This will assist the user in searching for the knowledge as the user just needs to know the kind of knowledge they

are looking for and then try to browse through the categories. This will definitely shorten the time of searching for the right knowledge.

The user will click on any knowledge category that they wish to view. Once clicked, the user will be redirected to the other page where the knowledge in video format will be played.

Videos are categorised under one of the categories. User could easily identify which video belongs to which category which will help them in the videos they are keen to watch.

Tags also are available which function as links which can lead to related videos depending on which tag is clicked.

Figure 15 & 16 shows that in the Video and Get in Touch tabs that it also features the section for Tags and Categories.

The interesting part is that users are granted the freedom to choose which category and tags they want their videos to fall into.
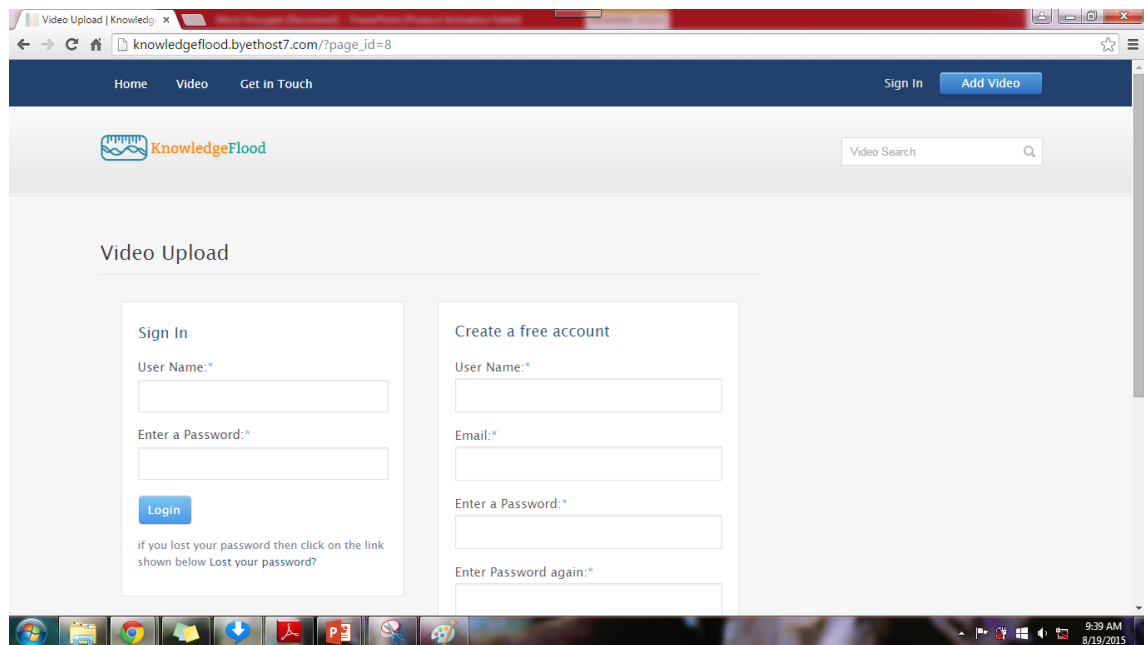
### 4.7.3 Add Video Button

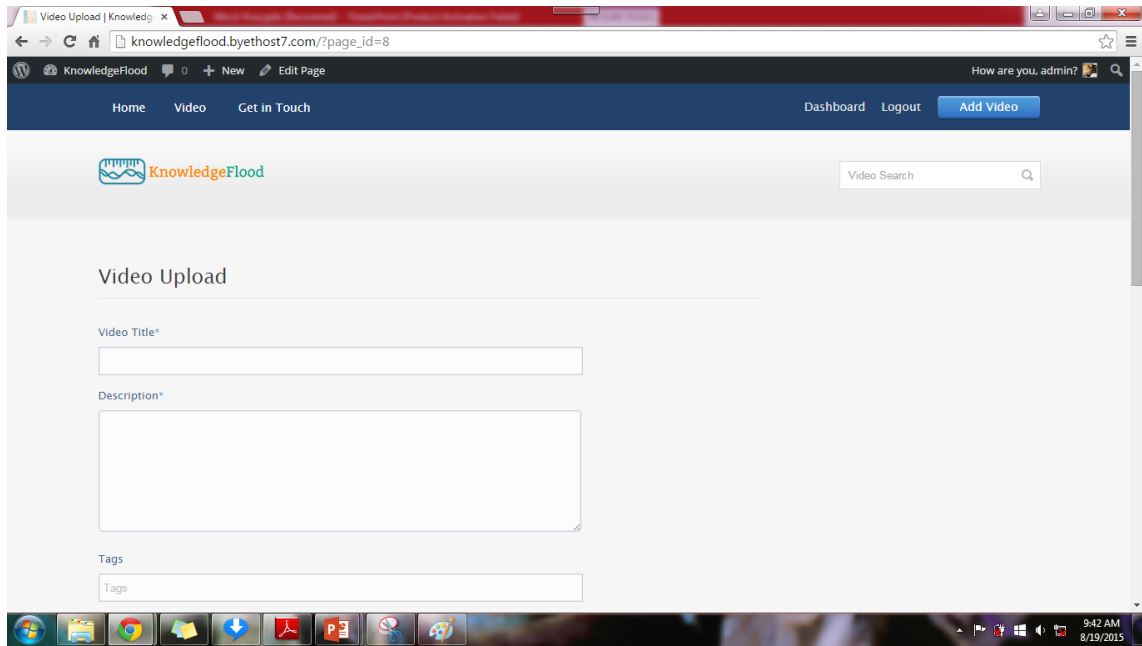*Figure 17: Snapshot of when Add Video button is clicked*
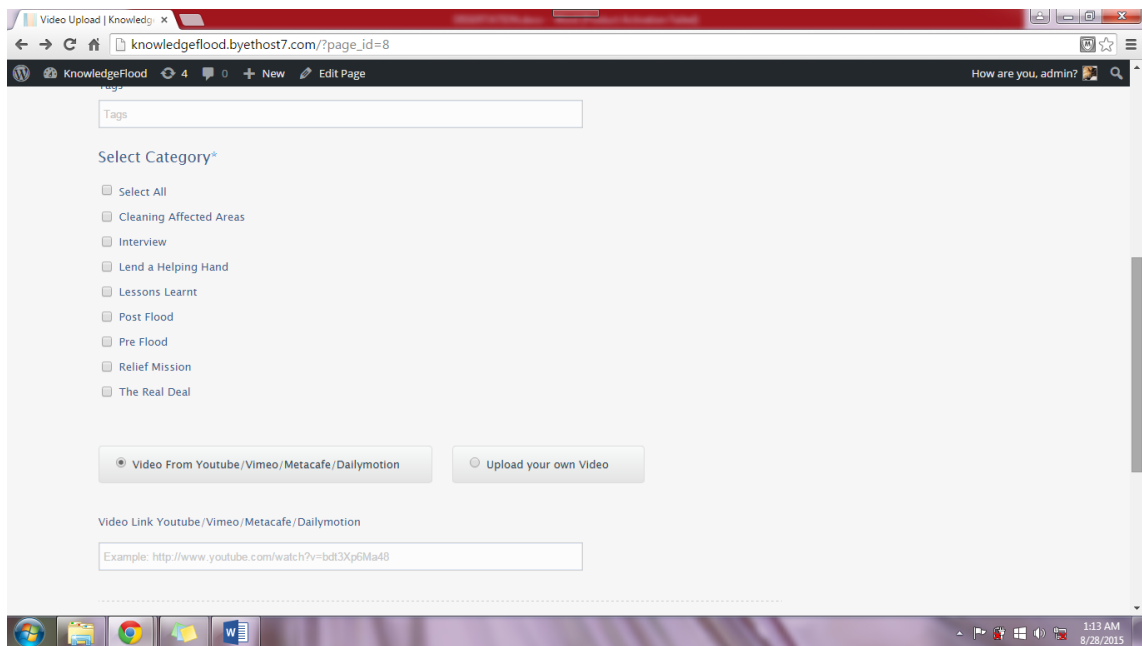


*Figure 18: Snapshot of Video Upload form*



*Figure 19: Snapshot of Tag creation text box and Select Category check boxes*

Figure 17 shows the snapshot of when user clicks on the "Add Video" button. The button will prompt users to either sign in or create a new account which is free of charge.

Figure 18 shows the Video Upload form which requires users to fill in the Video Title, Description, Tags, and Select Category. Users, with the reference of Figure 19, can upload videos from Youtube, Vimeo, Metacafe, or Dailymotion by pasting a copied link of a video from the mentioned sources. Besides that, users can even upload a video directly from their computer.
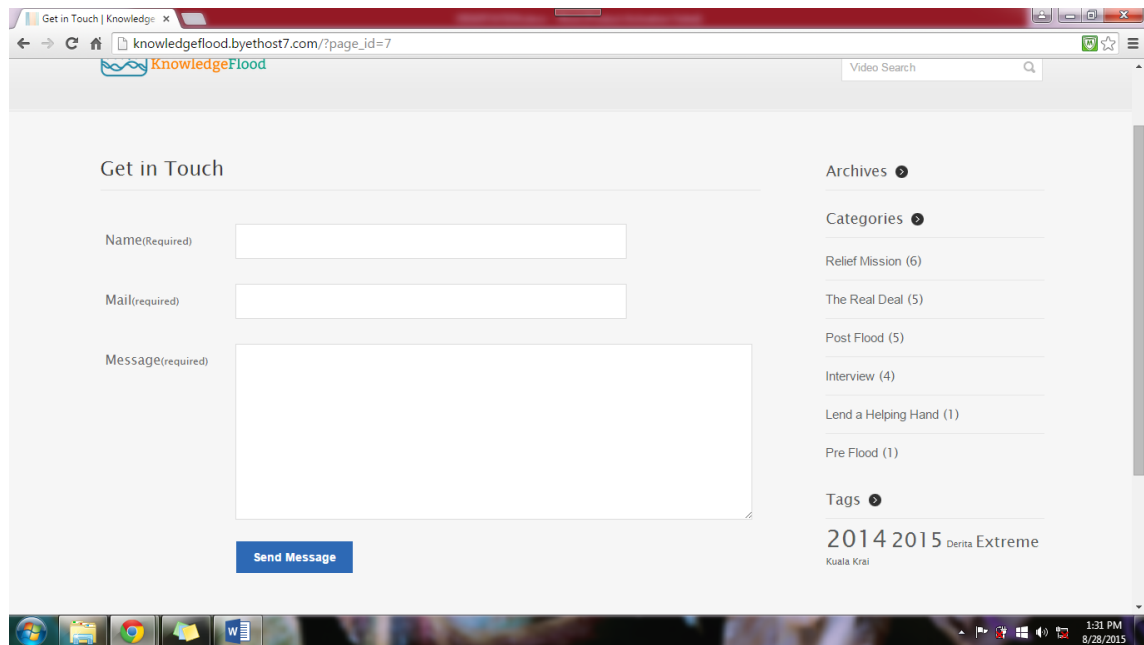
### 4.7.4   Get in Touch Tab



*Figure 20: Snapshot of Get in Touch tab*

From Figure 20, users can get in touch with the admin to give feedbacks or any ideas or input regarding flood disaster relief missions which are worth sharing and taking note of.

**CHAPTER 5:      CONCLUSION & RECOMMENDATION**

In a nutshell, capturing tacit knowledge from a skilled person and being to retain it gives a huge positive impact towards learning, sharing, transferring knowledge. Volunteers from various NGOs can observed other volunteers and gain in terms of lessons learnt and the things that need to improved.

This project concerns with the main objective of the research, which it to provide a platform of capturing and managing volunteers' experience, to allow everyone to view the knowledge in the form of a video. Overall, the research is equipped with the study on knowledge sharing practices in the field of volunteerism in flood disaster relief efforts, and the implementation of storytelling to share tacit knowledge.

One of the limitations affecting the scope of this project is the number of interviewees and participants. It is the hopes of the author that more people can participate in the interview as well as in the UAT sessions, so that the data collected are more well-rounded and reliable.

From UAT, the author managed to gather one very unique recommendation from one of the participants which goes on along in the line of these words:

> *"The website can perform very well if it is publically shared as it forms a new kind of story telling database. So perhaps in sha' Allah in the future you can have a team helping in analysing the information from the videos and transferring into data sheets that can be available for volunteers to know which areas are strongly affected by floods, which areas are in shortage of volunteers and aid supply, what kind of difficulties faced to reach a particular affected areas. I think it can help volunteers a lot."* (18th August 2015)

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