

# CHAPTER I

## INTRODUCTION

### 1.1 Background of the Problem

Ever since the Internet was first introduced to the world (publicly) in 1991, a new way of communication was born [1]. The Internet enabled people to converse with each other all around the globe in a virtual reality. People no longer had to communicate directly face-to-face. The life-changing invention of the medium now known as the World Wide Web revolutionized new ways of how people can interact with each other; via e-mail and messenger for instance. As more people around the world gained knowledge about the Internet, the population of Internet users worldwide simultaneously inclined. By the end of 1995, the population of Internet users worldwide reached a total of 16 million – which was 0.4% of the total world population at the time [2].

In 1997, SixDegrees launched the first recognizable social website that enabled users to have their own profile and make friends with other users [3]. People started to recognize the potential of this interactive website as it was very helpful in connecting colleagues, friends, and family together. Eventually, other websites came to follow such as Friendster, Myspace, Facebook and Twitter. As plenty of new social websites began to surface, the competition between these websites intensified. Eventually, they had to come up with unique but also interactive features to be able to compete with other websites and ultimately gain active users. After a while, people were becoming attached to social media more than ever before.

Social media now have such an important role in social engagement because people are becoming more comfortable interacting with each other via social media. Social media ease the process of communication by allowing users to stay at the comfort of their home without having to meet face-to-face. As a result, people are growing addiction to social media, especially among the teenagers [4, 5]. A study finds that 18% of users can only last a few hours before having to check Facebook [4]. In recent years, multiple observations conclude that teenagers tend to have more conversations in social media than direct face-to-face because: (1) they are able to make more friends in social media [6]; and (2) they feel more connected with their feelings [7]. Teenagers are also

more confident conversing in this way as there is very little judgment of physical appearances [8].

Today, social media has become an important part of people's way of lives ever than before – so much so that they spend long hours in the platform. However, spending too much time in social media could be unhealthy. There was a case of a Harvard professor that was cyberbullied due to a misleading video clip that was published online [11]. The clip failed to capture the true intention of the professor which caused people to speculate and make negative assumptions about the professor without questioning the validity of the video clip [11]. This case shows that social media may have effects on the users that cause them to be *ignorant*.

The issue is that in certain social platforms, being *ignorant* is somehow accepted – even at times encouraged. Some possible reasons are: to gain attention of other users, to promote a certain propaganda, or for entertainment purposes. Some *ignorant* activities include publishing: inaccurate information of real-life events, controversial or sensitive topics, rumors, and false facts. Another *ignorant* activity is to *kepo* (an Indonesian slang for being nosy). Some users are drawn to learn more about their friends' activities, but not so much about learning something that are useful for them. These activities are observed to be unproductive and could potentially ruin social media [12]. This is slowly shaping the modern's culture and norm where paying attention to friends' activities is much more important than learning valuable knowledge. As a result, people may grow to become ignorant and careless. However, this observation is entirely anecdotal.

On the other hand, not everyone uses social media in that way. Some people use social media as an education platform that benefits their livelihood. However, some face difficulty in finding the right people to have a conversation with in the social platforms that they use. As the population of Internet users simultaneously grow [9], this makes it even more difficult as there are too many users to decide who to exchange their knowledge with.

Considering all of those issues, a solution is discovered to help people to exchange knowledge with each other more effectively: a social networking website with a system that allows the matching of two users who needed to exchange certain knowledge with each other. For instance, Person A is a student who is an expert in Mathematics and is looking for a person who is an expert in Physics. Person B is a student who is an expert in Physics and is looking for a person who is an expert in Mathematics, coincidentally. The system allows the two users to be met virtually in a chat room, enabling both Person A and Person B to exchange their knowledge. Thus, the social networking website with

matchmaking system for knowledge exchange and learning named NULE is began to be considered for development.

## **1.2 Problem Statement**

With the background of the problem described, the following are the formulated problem statements that inspired the development of the system:

- 1) Social media users are becoming addicted.
- 2) Some social media users pick up unhealthy tendencies to publish inaccurate and misleading information; where it is observed to be unproductive.
- 3) Social media users experience complication in finding the right users to exchange knowledge with.

## **1.3 Problem Limitation**

With the problems stated, the following are limitations of the proposed system based on the system development:

- 1) NULE is developed as a social networking website, not a mobile app; which may not be as effective in this modern era.
- 2) NULE is developed without the usage of web framework which makes the website development more tedious.
- 3) NULE requires plenty of users in order to have an accurate measurement for the paper research.

## **1.4 Research Hypothesis, Objectives and Benefits**

### *1.4.1 Research Hypothesis*

The hypothesis of this research is that a social networking website with matchmaking system can potentially help users to exchange knowledge more effectively than a social networking website without matchmaking system; based on how impactful the conversation is, how true the knowledge is, and how responsive the knowledge

exchange partner is. To prove this claim to be true, an experiment is conducted to support the hypothesis.

#### *1.4.2 Research Objectives*

The aim of the research is to find out whether exchanging knowledge via a social networking website with matchmaking system can potentially help users to exchange knowledge easily, and whether they will effectively learn from each other. In addition, the research also aims to find out whether research participants prefer a regular social networking website (Facebook, for instance) or a social networking website with matchmaking system (NULE) for knowledge exchange and learning. If the hypothesis is supported, the system is proven to be practical. In order to achieve the desired aims, the following objectives of the research must be accomplished:

- 1) To analyze and develop a social networking website with matchmaking system named NULE.
- 2) To assess the users' response to NULE by testing the system.
- 3) To compare the difficulty, effectiveness, and satisfaction of knowledge exchange between a social networking website with matchmaking system (NULE) with a regular social networking website (Facebook).

#### *1.4.3 Research Benefits*

There are several benefits for conducting the research. By conducting the research, the system can be determined whether it is effective for knowledge exchange or otherwise based on the responses of the research participants. This will help to conclude if the matchmaking system is a contributing factor for an effective knowledge exchange and learning. In addition, conducting the research will determine the research participants' choice of social networking website for knowledge exchange and learning; NULE or a regular social networking website (Facebook). This will help to validate the hypothesis of the research, and for further implementation of the system.

### **1.5 Research Methodology**

The research is conducted using a quantitative method, where the hypothesis is validated with the support of statistics. The research methodology consists of multiple elements that are arranged accordingly:

### *1.5.1 Data Collection Method*

#### 1) Literature Review

This method requires the gathering of theories and terms that are related to the topic and are used to develop the system. This is necessary to help the system to be more resistant to flaws that other systems have had in the past.

#### 2) Experiment

This involves the participation of two groups of people – in this case, social media users – to carry out two similar tasks to help determine the relevancy and independency of certain variables according to the research.

#### 3) Questionnaire

The questionnaire is web-based and is using Google Forms as a platform to collect the data. The questions will be presented in English and inquiring the respondents' opinions about the experiment (their tasks).

### *1.5.2 System Development Methodology*

NULE will be developed using the methodology Rapid Application Development (RAD). RAD is chosen particularly for this system development because it helps to enhance the functionality of the entire programming process as it involves direct participation of active users which is more favorable for the programming process and project scheduling.

## **1.6 Writing Systematics**

The chapters in this book are arranged in a way to have a clearer representation of the book. This is also to help the readers understand the book in a more explicit sense. Thus, the book is grouped into several chapters with the following systematic delivery:.

### **CHAPTER I INTRODUCTION**

This chapter describes how the problem surfaced and what is proposed to solve the problem. The chapter include the background of the problem, problem formulation, problem limitation, research methodology, research objectives and benefits, system development methodology, and lastly the writing systematics.

## CHAPTER II LITERATURE REVIEW

This chapter consists of the related theories and terms that will be explained thoroughly by definition according to certain journals, books, and websites.

## CHAPTER III ANALYSIS OF THE EXISTING SYSTEMS

This chapter describes other currently available systems that are similar to the proposed system. This chapter compares what the current systems already have and what are the concerned issues. This is to distinguish the proposed system and the current systems to be able to propose the solution of the problems that the current systems are facing.

## CHAPTER IV ANALYSIS AND DESIGN OF THE PROPOSED SYSTEM

This chapter describes the development of the proposed system and how the system is designed. There will be a display of a use case diagram and a set of activity diagrams. In addition, there will be a description of the user requirements (both functional and non-functional) including the graphical user interface.

## CHAPTER V TESTING AND IMPLEMENTATION OF THE PROPOSED SYSTEM

This chapter contains the development and aftermath of implementing the system. This includes the documentation of testing the system that will be presented with tables and figures.

## CHAPTER VI HYPOTHESIS VALIDATION

This chapter contains the research description, research documentation, and the analysis of the research variables. This include independent samples t-test and time series analysis that are used to validate the hypothesis of the research.

## CHAPTER VI CONCLUSION

This chapter contains conclusions, suggestion, and lessons of the research paper based on the analysis, development, testing and implementation of the proposed system in the previous chapters (mainly Chapter VI).