CHAPTER I

INTRODUCTION

1.1 Background

Communication is a message sent among people, its definition remains the same while the methods of transmitting the message keep on changing. The method of transaction is determined by time, subject, and types of communication that emerges on peoples. The rapid advances not only cover the utilities improvement on mobile phone, but also developed features as the form of innovation on a smart phone.

Telephone is the important device, especially when it evolved to mobile devices. More subscribers recently prefer to use mobile phone than the landline ones, Approximately, 95% nations worldwide owned mobile phone networks and more likely that mobile phone are more popular than TVs. Many households both in developed and developing countries choose mobile phone service instead of landline ones. In some cases, certain peoples in Unites States are still keeping both their landline phone service and mobile phone.

In United States only 4% of all telephone subscribers are mobile phone users (Katz, 2002). To show the change in the way people communicate and its potential implications for a digital development. In 1990, less than 1% of the world's population had a mobile phone, and only a third of the world's countries had a public wireless network.

A smart phone is a mobile phone with built-in applications, i.e. video player, MP3 player, television, camera, with the ability to access the internet (Segan. 2004). A smart phone is a device for making calls with additional features that functioned as a personal assistant or computers. A smart phone also offers the ability to send and receive e-mail as well as edit office documents (Cassavoy, 2012). While, second generation mobile phones have similar utilities, the smart phone uses computer

operating system to run its applications. The utilization of the smart phone directly influences and changes people's social availability through its various applications and utilities. Relationships that exist professionally and personally are susceptible to structural shifts as smart phones effect personal privacy while blending and expanding social networks (Lugano, 2008). Approximately 110 million Indonesian consumers in early 2010 have been using mobile communications technology by various types of mobile phones (Darmawan and Rayhan, 2007). In the context of telecommunications as a tool employed in high mobility, it should be prepared the mobile product which is appropriate to the needs and desires of users.

To be precise, when consumers decide to make a product selection, they require a rigorous and correct decision making process. That is conducted by reviewing product specifications and user requirements to evaluate all of the product specifications and characteristics. To maintain that purpose, there are design and system of acceptability. Later in the design, it will be classified several factors related with ergonomics, weight, size. System of acceptability is closely related to the social and practical acceptability. Practical acceptability covers usefulness, cost, reliability, and compatibility.

Furthermore, Usefulness is defined into two terms which are utility and usability. While, usability is defined into several characteristics, which are easy to learn, efficient for use, easy to remember, few to remember, subjective pleasing (Nielsen, 1993). Hence, based on those characteristics, smart phone in term with its specifications can be described as a product that ergonomics, appropriate in weight, size, cost, usability, connected to internet and social network, applicable for office purposed, music player, camera, and emotional appeal.

Based on problems explained above, the great number of smart phone users can be interpreted as indicators of more product specifications demand. It is necessary to build a decision support system to help in selecting the right product, but it is not enough for only using Fuzzy Associative Memory (FAM) method, because this system build with subjectively so to adjust the parameter of this system by using optimization. Hence, Genetic Algorithm (GA) is required for its optimization.

1.2 Problem Formulation

Based on the background above, the problem that could be formulated is how to model a system to help customer decide a suitable smart phone product based on several customer linguistic using FAM method and optimized with GA.

1.3 Problem Boundaries

To focus the research in achieving the objective, the research needs to be limited in certain aspects. Those problem boundaries can be defined as follows:

a. The variables are chosen based on previous researches that closely relate to this research and interview with sellers in Ambarrukmo Phone Market, Yogyakarta.
b. The problem is formulated only for smart phone product specification that available in market on March 2012.
c. Smartphone will be the mobile product that aimed to be the subject for this research.
d. The product specifications and characteristics that used in this research cover ergonomics, weight, size, prestige, internet use and social network, office, music and camera use, as well as emotional appeal.

1.4 Research Purpose

This research aims to help a customer with decision support system to identify the proper specifications and characteristics for certain product by using fuzzy associative memory method and optimized genetic algorithm.

1.5 Research Benefits

The benefits of this research are:

1. To increase the knowledge about the application of FAM in the real world, application of FAM on smart phone product's characteristics and specification related to the customer linguistic preferences.
2. As the helping tools for the seller specifically on smart phone in order to determine proper decision for customer.

1.6 Writing Systematic

The rest of the research outlines will be arranged as follow:

CHAPTER II LITERATURE REVIEW

This chapter provides brief information about previous researches conducted by other researchers. This chapter also describes theoretical background and any related concept supporting the research.

CHAPTER III RESEARCH METHOD

This chapter provides information about the research object, model development, and the workflow of the research itself. A flowchart will be provided to show the steps that have to be carried on by the researcher in order to solve the research problem.

CHAPTER IV DATA COLLECTION AND SYSTEM DEVELOPMENT

This chapter contains the data collected that will be used to solve the problem. This chapter also describes how the problem solving will be done.

CHAPTER V DISCUSSION

This chapter discusses about the result of data processing conducted in previous chapter. Analysis toward the result will be completed to measure how the research could solve the problem that has been formulated in problem formulation.

CHAPTER VI CONCLUSION AND RECOMMENDATION

This chapter provides the final result of the research, answers the problem formulation. Several possibilities for next improvement will also be recommended as the base of next research.

REFFERENCES

APPENDICES