eGuardian Angel: Mobile Application for Individual Improvement

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Figure 5: eGuardian Angel Architecture Diagram

1. Introduction

1.1. eGuardian Angel Mobile Idea

- The idea: Providing a set of users with the ability to influence each other in a positive way.
- There are two types of users; a Child is an individual who is pursuing a goal, and a Guardian is someone in charge of monitoring and encouraging that Child to meet their goals.

1.2. Background

- Introduced in 1994 in a health related domain with nurses and doctors as the Guardian and patients as the Children – perceived effective [1]
- Re-introduced in 2008 but with an automated Guardian – unable to adapt to user variety [2]
- Since then, there has been a numerous amount of applications specifically in a learning domain to mix this concept with social interactions

2. Aims / Motivation

- To develop a mobile application prototype to facilitate Guardian Angel functionalities on a mobile social network environment.
- To be able to see how functionalities are able to contribute and influence social interactions.

3. The General Design

3.1. The General network

- In current social interaction networks, which include the sharing of information, there's a clear divide between experts and those who require the information. Not much communication is found between the non-experts. The communication is as shows:

Figure 1 and 2: Normal Communication Network diagrams
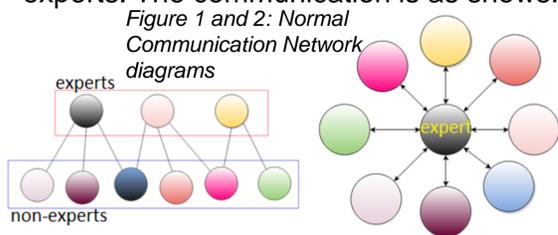
4. The Proposed Design

4.1. The User Groups

This application will consist of a general user who will be both a Child user and a Guardian user.

- **Child Users** – A basic user of the application who has a goal.
- **Guardian Users** – Users who will be in charge of a Child user, and has the ability to monitor the activities of their Child and edit or communicate with them to increase their positivity and/or motivation.

4.2. The Network

- The network is changed so that communication is limited to only two other users.
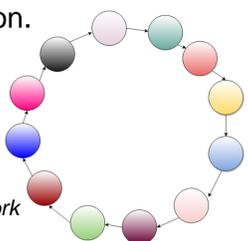- Users have a similar level of knowledge with differing positivity and motivation.

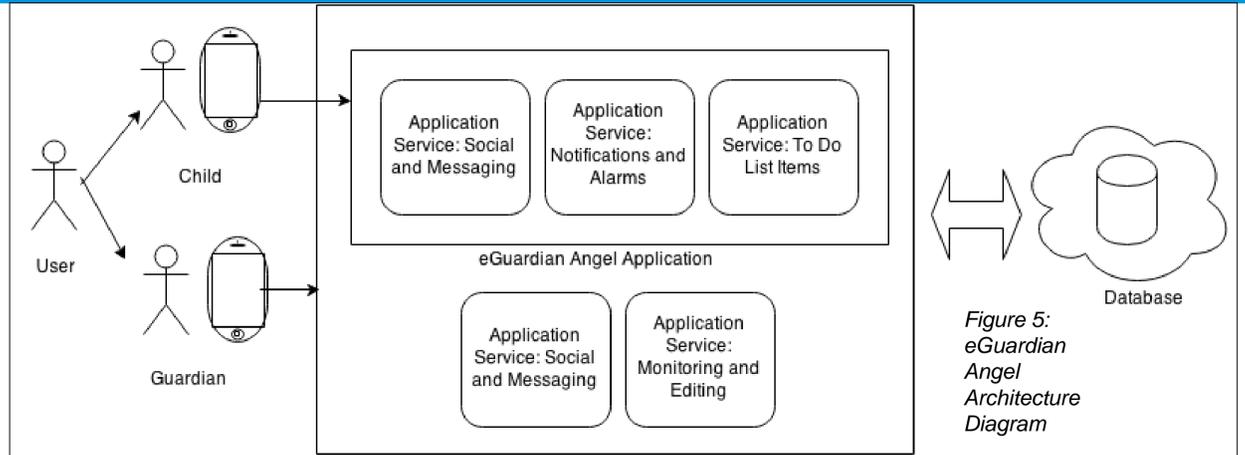Figure 3: New Communication Network Diagram

4.3. The Functionalities

This application will consist of four main functionalities:

- **Profile:** A Profile is a visual display of a user's basic details. This functionality includes the ability to edit their basic details.
- **Messaging:** A Messaging functionality involves the ability to communicate with another user. In this application, this is limited to a functionality between a Guardian and their Child user.
- **To Do List:** A To Do List is a list of items that a user sets as tasks for them to complete. This functionality includes the ability to add a To Do List item and check off a To Do List item. A Guardian user will also be able to complete these To Do List functionalities for their Child.
- **Reminder System:** A Reminder System involves a timed notification which in turn will remind the user of a specific activity or task. A Guardian user is also able to send a reminder to their Child.

4.4. The User Interface

There will be five main views to represent the four main functionalities plus the child view to represent the separate functionalities which will be exclusive for a Guardian to use.

Figure 4 below, shows the mock up diagrams of the general user interface for each functionality.

In the child view, a user can view their Child's profile and a button link to the other functionalities they are able to do for their Child. After selecting an option, the view will then be redirected to views similar to the other basic functionality views below.

4.5. The Architecture

The system architecture is split up into three main components – See Figure 5:

- **The Views:** This is how the users view the application. Refer to section 4.4. and the mockup diagrams – Figure 4.
- **The Services:** These are the functionalities that the application offers (section 4.3). In the diagram, you can see the difference between the functionalities that are afforded to the Child user and the extra ones afforded to the Guardian user.
- **The Database:** All activity completed on the application will be stored on the external database and can be accessed through the use of MySQL and PHP.

5. Future Work

5.1. eGuardian Angel for a Dynamic Network

- This project is only in the early development stages. In a more realistic situation however, a network is always changing. It can be because of external environmental factors or just the lack of motivation from a single user. For future work, this design can be extended to include these dynamic changes. What would happen if the network was broken? What would happen if a Child loses his/her Guardian?

5.2. eGuardian Angel: Varying the number of Guardians and/or Children

- This project focused mainly on a one to one relationship, for every user they have a respective Guardian, or a respective Child to monitor. For future work, this design can be tested with different relationships: one to many, many to one and many to many. How would a differing amount of Guardians or Children influence the users motivation and positivity?

References

[1] Doyle, J., Szolovits, P., Long, W. J., Kohane, I., & Pauker, S. G. (1994).Guardian Angel: Patient-centered health information systems. Massachusetts Institute of Technology, Laboratory for Computer Science.

[2] Falchuk, B.; Loeb, S., "Towards "Guardian Angels" and Improved Mobile User Experience," Global Telecommunications Conference, 2008. IEEE GLOBECOM 2008. IEEE , vol., no., pp.1,5, Nov. 30 2008-Dec. 4 2008

Figure 4: eGuardian Angel User Interface Mock Up Diagrams