Development Hi2-CounseLink as Online Counseling Software Based on Android Platform
Product Inspections

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Abstract: The development of online counseling services encouraged the need for adequate and user-friendly infrastructure and software. This study aims to evaluate the functional product to avoid the most common source of problems in the Hi2-CounseLink software development process. This software is developed for individual counselling services by adapting the development model of The Rapid Prototyping Model. The product analysis involves application developer's android based, counselling expert and counselling practitioners as customers. The research findings show that Hi2-CounseLink rated quite well by software and counseling experts and the customers. However, modifying of this software is needed, especially with regard to broadcast receivers, data credentials, font selection, and software security systems. For the next stage, author decided to refine and revision the prototype of Hi2-CounseLink.

1 INTRODUCTION

The high number of people who use smart phone (based on android) connected by the Internet network (Kirwan *et al.*, 2012) is also followed by the development of the software has been increasing dramatically over the last several years (Wei and Lo, 2006; Gandhewar and Sheikh, 2010). The high use of the Internet in a country reflects a climate of information disclosure and public acceptance of technological developments and changes to the information society throughout the country(Singh and Hill, 2003; Posey *et al.*, 2010).

The increasing of android software mentioned above for Indonesians as development country also provides opportunities for the develop of similar software in other public services sectors(Ndou, 2004). It is also the answer to the challenges of changing times that are increasingly putting the use of digital technology in every aspect of community life, including working life and also increasingly used for targeting mental health issues(Lehr *et al.*, 2016).

Unfortunately, mental health practitioners, especially counselors, are not prepared and "impressed" slow to deal with the possibility of change (Aubrey, 1980; Alleman, 2002); including

adaptation to the use of online technology in the practice of counseling services (Elleven and Allen, 2004).

Most counselors are still concerned with the issue of "comparing" whichever is more effective between face-to-face counseling with online counseling (Mallen and Vogel, 2005). On the other hand, the provision of counseling services should not be broken to fill the needs of clients (Bedi, 2006).

However, this does not mean the development of counseling services in 21st Centuries, especially using technology information is "becoming impaired nowhere" (Paisley and McMahon, 2001). Counselors or therapists have recently begun to utilize the various online media services that have been available such as *Facebook, twitter, MySpace, e-mail*, and some software programs for chatting (instant messaging) such as *skype, messenger, google talk, window live messenger*; even the use of open virtual discussion groups (e.g., newsgroups), telephone and mobile phones and other special *teleconference* media (Barak, 1999; Ardi and Yendi, 2013; Ifdil, 2013).

The term online counseling refers to counseling processes that do not depend upon the presence of counselors and clients in one place or office, but apart by distance(Elleven and Allen, 2004). In online

counseling practice, *treatment* is provided without the physical presence of counselors with clients in one place(Collie, Mitchell and Murphy, 2000).

Online-based counseling gives value to the advancement within the counseling profession. One of on-line counseling's greatest features is that it may be provided worldwide; on-line counseling knows no geographic boundaries and suppresses the financing incurred by clients and accommodates the varying needs of clients (Mallen and Vogel, 2005). It is important to note that the use of software in the counseling process is only a tool for successful counseling process (Elleven and Allen, 2004).

The previous study conducted mobile phone software applications (apps) are available for a variety of useful tasks to include symptom assessment, psycho education, resource location, and tracking of treatment progress (Ndou, 2004). Mobile phones also seem to have many other benefits, such as increasing adherence to medication, allowing therapists to monitor clients' progress, improving the therapeutic relationship, and providing information to both clients and therapists (Norris, Swartz and Tomlinson, 2013).

Based on the conditions, the author released a prototype of the android-based software that is specifically intended for on-line counseling services, namely Hi2-CounseLink. The naming of Hi2-CounseLink, taken from the developer of this software, "Hi2" which stands for Hafit (H), Itsar (I), and Ifdil (I); Which is connected with "CounseLink" which means Counseling is done in the on-line network.

The development based on The Rapid Prototyping Model as Software-Development Life-Cycle Models. By using a prototyping approach similar to that shown in Figure 1, the customer can assess the prototype and provide feedback as to its suitability for a particular application. The prototype can range from a paper schematic all the way to a working system that includes both hardware and software(Rakitin, 2001).

The development of Hi2-CounseLink in this study aims to evaluated software for online counseling tools. More specifically, the purpose of Hi2-CounseLink development is to describe the functionality of important components of Hi2-CounseLink software that integrates live chat, voice call, and video call in one application on a smart phone which is connected to the Internet.

The use of an android platform in this software is based upon the consideration that most of the Indonesian people using smart phones with android based.

2 METHODS

Hi2-CounseLink software development in this research is done by adapting The Rapid Prototyping Model as a life-cycle model in creating a software-development process. The Rapid Prototyping Model was chosen because it can range from a paper schematic to the working system that includes both hardware and software (Rakitin, 2001).

The Rapid Prototyping Model allows researchers to build software based on user ratings and needs. In this case, researchers, program developers, and users in small groups are fully engaged in software refinement step by step.
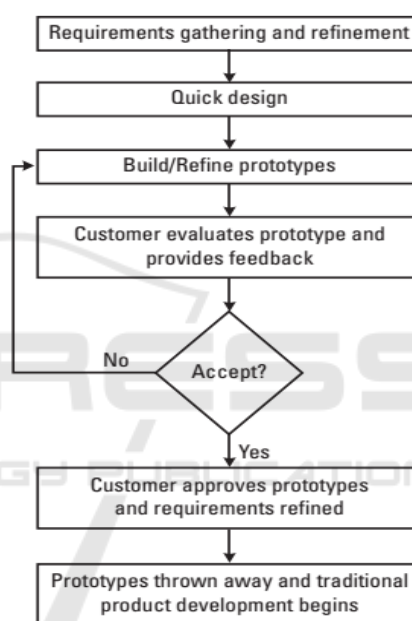

Figure 1: Rapid prototyping life-cycle model.

At the product functional inspections stage, the Hi2-CounseLink software component is evaluated by three counseling experts, three software developers and three users as client using a Focus Group Discussion (FGD) method.

3 RESULTS AND DISCUSSION

3.1 Product Functional Inspections

3.1.1 Product Evaluation from Software Developers

There are six components that provide the building blocks for android applications, are (1) activities, (2) services, (3) content providers, (4) intents, (5) broadcast receivers, and (6) notifications (Meier, 2011).

Assessment by the developers found the need for improvements in the component broadcast receivers, mainly on the accuracy of the Global Positioning System (GPS). Location based Services offer many advantages to the mobile users to retrieve the information about their current location and process that data to get more useful information near to their location(Singhal and Shukla, 2012).

This resulted in the software not being able to run properly and spend quite a lot of power. At the time of software testing by using a temporary server, the program can connect to the server and can work properly. Meanwhile, other components have no significant problems.

3.1.2 Product Evaluation from Counseling Experts

The main idea behind this software development is to provide a tool to help counselors or clients to carry out counseling without relying on physical presence (face-to-face) in one place. To that end, the counseling experts are involved to provide input on the perfection of software and ensure the counseling process can run properly in accordance with the ethical code of the counseling profession.

Assessment from expert counseling of this software is quite good. Settling content that enough attention to the experts of counseling is on the guarantee of data credentials that exist in the Software. Counseling experts assess the governance and information on the use of client data should be presented on separate pages in the software developed.

Guarantee of the data provided by the client is very important to foster trust in counseling services(Layne and Hohenshil, 2005; Affairs, 2006). Besides that, the credentials can make the struggle for public acceptance of the profession and an increasing emphasis an accreditation and credential factors (Forster, 1978; Myers, 1992; Myers, Sweeney and White, 2002).

3.1.3 Product Evaluation from Customers

The last stage of the software assessment is provided by the client as a customer. Assessment at this stage is focused at the software interface being developed and their attitude towards the use of online counseling.

Customers rate the interface for the program quite well. Customers can understand rightly the use of available panels and buttons along with their usability. However, revisions to the software interface are required in the font selection section. The typeface used is not very good; especially letters of the navigation key.

Related attitude towards online counseling, the customers are concerned about the level of security of personal data and conversations provided. The lack of perceived privacy and security during online chat sessions and the fear of being caught while conducting online sessions were the main concerns reported by e-clients(Young, 2005).

3.2 Manual Guidelines: A Brief Overview for Prototype Software

3.2.1 System and Device Requirement

Hi2-CounseLink can be operated maximally on android smartphone with the following minimum system and device requirement:

Table 1: System and device requirement for Hi2-CounseLink software.

Component	Minimum System and or Device Requirement
Supported Network	HSDPA 850 / 900 / 1900 / 2100 – 3G LTE band 1(2100), 2(1900), 3(1800), 4(1700/2100) – 4G
Operating System	Android 5.0.1 (Lollipop) or above
CPU	Quad-core 1.25 GHz or above
Memory	16 GB, 2 GB RAM or 32 GB, 3 GB RAM
Camera Resolution	8 MP or above

The system and device requirement as shown in Table 1 is a minimum standard of Hi2-CounseLink operation. However, it does not mean Hi2-CounseLink cannot run on specifications under the minimum requirement, but can also run but until less smooth due to found many bugs to crash.

3.2.2 Start Menu

Figure 2: View of start menu.

The Hi2-CounseLink start menu component, as shown in Figure 2 that is: (1) registration; (2) e-mail or mobile phone number; (3) passwords, as well as (4). terms & conditions of counseling online.

In general, the function of the keys, including: (1) registration as a registration button for new clients. Clients are asked to fill self-biographical, and self-image; (2) e-mail or mobile phone number serves as a confirmation button from the registration menu; (3) password, and; (4) terms and conditions.

Identity filling is aimed for app users who do not have an account in this app yet. Users are asked to fill out the identity of the client and address, phone number, email and click the List button. It is necessary to verify client's self-data as a requirement to enter the login menu.

3.2.3 Meet Your Counsellor Using the Global Positioning System (GPS)

Hi2-CounseLink comes with GPS functionality to track users and counselors in one particular place. The GPS menu view automatically finds the client's location and the location of the nearest practice with the client's position at the provincial, city and sub-district levels (See Figure 3).

A tracking system employing global positioning system (GPS) satellites provides extremely accurate position, velocity, and time information for vehicles or any other animate or inanimate object within any mobile radio communication system or information system, including those operating in high rise urban areas(Brown and Sturza, 1993).

Hi2-CounseLink software is connected to the Counselor list listed on the Indonesian Counselor Association server.

Figure 3: GPS menu view and list of counselors available online by location.

GPS test was conducted in Cimanggis, Depok - Indonesia area at latitude -6.364456, and longitude 106.859139, Hi2-CounseLink software run properly.

3.2.4 How is Counseling Done? And How Much Does It Cost?

Basically, the user who has chosen who will counsel with will be faced the select of type of counseling situation that suits his needs. On the menu of the counseling process, clients can choose to counsel via phone, video call, chat/instant message, or meet directly in the counselor's office.

Figure 4: Types of counselling and administration fee.

The client selects the duration of time required for counseling. It becomes very important to adjust the condition between counselor and client. In Figure 4, the system settings in the Hi2-CounseLink software

automatically align the configuration according to the client's choice. Each duration of counseling has an administrative fee so that the client can see clearly how much he or she is issuing for each type of counseling.

The client or application user who has approved the administration fee can make a payment and confirm the payment by uploading the transfer receipt.

3.2.5 The Value of User Feedback for Counselors and App Managers

One of the biggest benefits in the development of this software is the availability of the feedback menu provided by customers of the quality of services obtained from the counselor.

Figure 5: Counsellor's rating based on client counselling experience.

In Figure 5, the client can directly assess the counselor based on the counseling experience obtains. Furthermore, the assessment of the counselor is sent to the Indonesian Counselor Association server database. The scale of assessment of client satisfaction level on the quality of counseling service as shown in Table 2 is indicated by an asterisk, namely:

Table 2: Scale of counselor service quality assessment.

Number of Stars	Interpretation
★	Counseling service is poor
★★	Counseling service is fair
★★★	Counseling service is good
★★★★	Counseling service is very good
★★★★★	Counseling service is excellent

Counselors can also evaluate themselves based on clients' ratings. Neither for software developers and Indonesian Counselor Association.

3.3 Software Limitations

Until the Product Functional Inspections stage, Hi2-CounseLink software can only be used to conduct individual online counseling. This software is also not available for public in the Play Store service on Google Play.

On the availability side of the counselor in the software is still categorized slightly. This is because the process of transferring the database of counselors to the application for a wider field test has not been completed yet. On the operating system side, Hi2-CounseLink is intended for android smart phone users and has not been developed for iOS users, and Windows Phone. Finally, at this stage the program is available in Bahasa only.

3.4 The Future Development of Hi2-CounseLink

It was realized by the researcher that actually clients could just choose software or other application with more complete features compared to Hi2-CounseLink. However, the organization of counseling services through one database and online software directly help the professional counseling organization to be able to map the quality of counselors in Indonesia in performing its role as a professional counselor.

Based on the accumulated assessment of clients on counselor services recorded through Hi2-CounseLink, the professional organization of counseling can monitor the performance of its counselors and design the counselor counseling program in the future.

4 CONCLUSIONS

Based on the description that has been proposed, it can be concluded that the development of Hi2-CounseLink has rated quite well by software and counseling experts and the customers. However, modifying of this software is needed, especially with regard to broadcast receivers, data credentials, font selection, and software security systems.

Some primary obstacles that have not been solved in Hi2-CounseLink development are the application can't import the database of counselor to Hi2-CounseLink application server, and Hi2-CounseLink software only aimed at individual counseling only

and yet to touch other counseling services such as group counseling. For the next stage, author decided to refine the prototype of Hi2-CounseLink.

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