

Digital Congregation News Android-Based in The Christian Evangelical Church in Minahasa

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Abstract. *Information is a necessity that is needed by everyone. With the development of Information Technology today, it is very helpful for people to get the desired information easily and quickly. This digital media provides a number of advantages when compared to print media. One of the advantages of this digital media that is very pronounced is that this digital media can reduce printing costs, because this digital media does not need to be printed, but only uses internet media to disseminate the information. In church activities, also cannot be separated from the delivery of information to the church congregation. The purpose of this study is to develop an android-based mobile software to be able to provide information or congregational news digitally. In this research, a number of stages will be carried out, namely Literature Study, Data Collection, System Design and Data Model, System Development and Data Processing, Testing and Evaluation, Reporting and Publication. This research produces a mobile application that can be used to provide news information to the congregation.*

Keywords: *android, church, digitization, software.*

Abstrak. Informasi merupakan suatu kebutuhan yang sangat diperlukan oleh semua orang. Dengan adanya perkembangan Teknologi Informasi saat ini sangat membantu masyarakat untuk mendapatkan informasi yang diinginkan dengan mudah dan cepat. Media digital ini memberikan sejumlah keunggulan apabila dibandingkan dengan media cetak. Salah satu keunggulan dari media digital ini yang sangat terasa adalah media digital ini dapat menekan biaya pencetakan, karena media digital ini tidak perlu untuk dicetak, melainkan hanya menggunakan media internet untuk menyebarkan informasi tersebut. Di dalam kegiatan bergereja juga tidak lepas dengan penyampaian informasi untuk jemaat gereja tersebut. Tujuan dari penelitian ini adalah untuk mengembangkan suatu perangkat lunak mobile berbasis android untuk dapat memberikan informasi atau warta jemaat secara digital. Di dalam penelitian ini akan dilaksanakan sejumlah tahapan yakni Studi Pustaka, Pengumpulan Data, Perancangan Sistem dan Model Data, Pembuatan Sistem dan Pengolahan Data, Pengujian dan Evaluasi, Pelaporan dan Publikasi. Penelitian ini menghasilkan suatu aplikasi mobile yang dapat digunakan untuk memberikan informasi warta kepada jemaat.

Kata kunci: android, digitasi, gereja, perangkat lunak.

INTRODUCTION

The term "information" refers to both transmitted knowledge and the process of informing (Michael K Buckland, 1991). Information is a necessity that everyone requires. With today's advancements in in-formation technology, users can readily and rapidly obtain the information they require. The present information search procedure has changed as a result of the advancement of information technology. Print media, which were given to the general public, were used in the preceding in-formation search procedure. However, print media has given way to digital media at this time. These digital media are quite useful in sharing information so that it can be received quickly and with a bigger audience.

Digital media offers new possibilities and methods for obtaining information and disseminating news(Ulcej, Dejan; Svete, 2013). When compared to print media, digital media has a lot of advantages. One of the most notable advantages of this digital media is that it can cut printing expenses because it does not require printing and instead relies on internet media to transmit information. Further-more, the benefits of digital media can be found in the data storage and processing processes. Because the data is saved in a database, it can be accessed and reused as necessary. When com-pared to a manual approach, the data search procedure will undoubtedly be faster.

Religion opens up new ways to engage with the ICT design environment(Grinter, Wyche, Hayes, & Harvel, 2011). The church also needs information technology infrastructure to increase the use of the Internet to provide information for many people(Christian A. Bolu, 2012). For the church, information technology is critical. "Technology is the main challenge for every church, because it is the main problem in society," Sellers wrote in the journal *Technology and Ministry*(Sellers, 2007). Printed church newsletters are still used to disseminate information at this period. Of course, printing the church newsletters to be delivered to the congregation necessitates a significant amount of operational costs. Therefore. To aid the church in lowering these operational costs, it was determined that the printed congregational information needed to be converted to digital format. Furthermore, because the church is still in the midst of

the Covid-19 Pandemic, this will undoubtedly be of great assistance to the church, as money are very scarce.

Technology is progressing in every element of human life, including religious institutions. In re-cent years, the church has become more reliant on information and technology for communica-tion. More and more people are using the Internet and social media to find personal, social, and religious information all over the world. Church agencies are becoming more dedicated to invest-ing in the network(Christian A. Bolu, 2012)

LITERATURE REVIEW

1. Recent Research

Application of Web-based Ummah Information System is a study by Romadlan(Romadlan, 2013). This research resulted in the development of a web application that may provide a report information system for the people of Surabaya's Good Shepherd Church (GYB).

Tambunan's research (Tambunan, G.D. & Sonya, 2013) is another example of related research. A web application that performs church management tasks such as data gathering, church activities, and baptismal records using Microsoft Word and Microsoft Access as database tools. A study was undertaken to discuss the design and implementation of a network-based church congregation information system for the Soka Salatiga Indonesian Christian Church, based on past research related to congregational in-formation systems and the use of MVC technology.

Kalalo's research resulted in the creation of an application for the GMIM Christ Manado congregation that runs on an Android smartphone with an internet connection and is simple to use(Kalalo, Sompie, & Paturusi, 2021). The Java programming language and the Firebase database were used to create the application..

2. Android

Android is a mobile operating system that includes the operating system, middleware, and apps. It is based on Linux. The Android operating system has two publishers in this world. The first, known as Google Mail Service (GSM), has full support

from Google, while the second, known as Open Handset Distribution, is a completely free distribution that does not receive any direct assistance from Google (OHD). Because Android is an open-source operating system, any vendor can freely distribute and utilize it. In addition to the aforementioned elements, Android's rapid growth is due to the fact that Android is a very complete platform, whether it's for the operating system, applications, or development tools, the Android application market, and strong support from the global open source community. As a result, both in terms of technology and the quantity of devices in use around the world, Android continues to grow at a rapid pace. (Rahmawati, 2015)

3. Firebase

The data in the Firebase Realtime Database is essentially a JSON document; there are no tables in it. This database's data can be stored on many servers. Adding a server will cost significantly less than increasing server capacity. Auto Sharding is supported by this database type. Whenever one server goes down, data can be moved right away to another server since servers are automatically balanced from different server pools. In comparison to SQL, there is less chance of a server outage. The Firebase Realtime Database, as its name suggests, is realtime, which means that if a user of the application updates data, Google Server immediately updates the data, and the Firebase system quickly updates the data for all other current users. employing the app. We only need to write code in Firebase Realtime Database to change the database on the client side (web, Android app, iOS app, etc). Unlike SQL, which typically requires us to use server programming languages like PHP, Ruby, etc. to build server-side code. (Ohyver, Moniaga, Sungkawa, Subagyo, & Chandra, 2019)

4. Android Studio

Integrated development environment (IDE) based on Android Studio and IntelliJ IDEA for creating Android applications. Android Studio offers other productivity-enhancing features when developing Android apps, such as a flexible Gradle-based version control system, a quick and feature-rich emulator, and an integrated development environment for all Android devices, in addition to being a powerful IntelliJ code editor and developer tool. Rich test frameworks and tools, performance, ease of use, Instant Run that drives changes to running apps without developing new APKs, code templates, and

GitHub integration that produces the same app functionality and imports sample code Now, issues with C++ and NDK support, version compatibility with Lint tools, and built-in support for the Google Cloud Platform make it simpler to integrate Google Cloud Messaging with App Engine.(Nasution, Efendi, & Kamil Siregar, 2019)

5. Flutter

Flutter is a portable stage structure that is ideal for new, elite applications. In 2016, Google jointly released Flutter to the public. In addition to being able to operate constantly on iOS and Android, Flutter is the framework of choice for apps in Google's cutting-edge framework Fuschia. Flutter is unique. Flutter draws every component of the display using its own improved rendering engine rather than relying on webviews or device Manufacturer tools. The ability to assemble superior apps, such as local applications, is made possible by this characteristic. Stateful damage reloading on build, which is regarded as a crucial factor for sustaining progress cycles, is supported by Flutter. All app progress and activity will be safeguarded after reloading a hazard because stateful hazard reloading effectively works by putting the updated source symbols into a running Dart virtual machine without affecting the core design of the app..(Idan Arb & Al-Majdi, 2020)

6. Dart

All apps in Flutter are created using Dart. Dart was therefore developed and is still maintained by Google. It is frequently used at Google since it has demonstrated abilities for creating extremely big web applications, like AdWords. Dart was first developed as Java Script's replacement and heir apparent. Also, it implements the majority of the key features of later Java Script standards (for example, the "async" and "await" keywords). Dart, however, contains Java-like language in order to pique the interest of designers who are interested in Java Content. The Flutter app magnifies the view tree on every new case by using a responsive perspective.(Idan Arb & Al-Majdi, 2020)

7. GMIM

One of the Calvinist Protestant churches in Indonesia is the Minahasa Evangelical Christian Church (abbreviated GMIM). Following its separation from its primary church, "Indische Kerk" (now a Protestant church in Indonesia/GPI), and its declaration as an independent church on September 30, 1934, GMIM was established in Minahasa, North

Sulawesi. GMIM Synod Day is observed on this day. Johann Friedrich Riedel and Johann Gottlieb Schwarz, two German missionaries schooled in the Netherlands and dispatched by the Dutch missionary organization *Nederlandsch Zending Genootschap*, brought Christianity to Minahasa (NZG). They arrived in the area to spread the gospel on June 12, 1831. The GMIM has designated this day as a day of Christian evangelism and instruction in the Minahasa nation. As of right now, GMIM is organized into 140 areas, with 1,040 congregations dispersed throughout Indonesia, including Jakarta, Bandung, Bekasi, Tangerang, and Makassar in addition to the Minahasa region. (“Gereja Masehi Injili Di Minahasa - Wikipedia Bahasa Indonesia, Ensiklopedia Bebas,” n.d.)

MATERIAL AND METHODS

There are three stages to the development of this application. Listening to customers, creating mockups, and testing drive mockups. Figure 1 illustrates the three stages of application development.

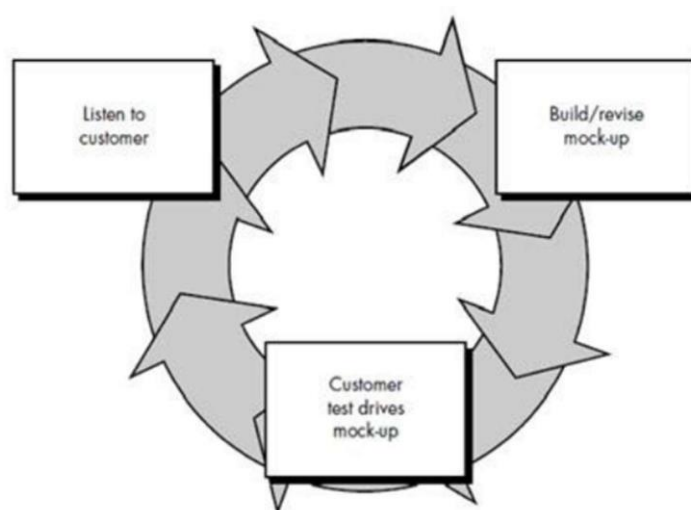


Figure 1. Prototype Method (Salaki, 2017)

1. Listen to Customer

In order to gather information for the research's planned church activities and GMIM Imanuel Walian, this step involved data collection.

2. Build/revise mock-up

Designing a software interface display completes this level. Also, a database design is created using the previously gathered data to store and handle data. In order to create a

mobile software, the model is additionally incorporated to the programming language into the already produced interface design.

3. Customer test drives mock-up

This stage involves asking the customer to test the developed software. The customer offers suggestions for further improving the program that was earlier created based on the testing results.

RESULT AND DISCUSSION

A modeling or prototype design for the system is carried out after collecting information relating to the needs of the system to be produced. The following is a representation of the prototype design that was created in order to provide an initial overview of the system that will be developed, as shown in Figure 2.

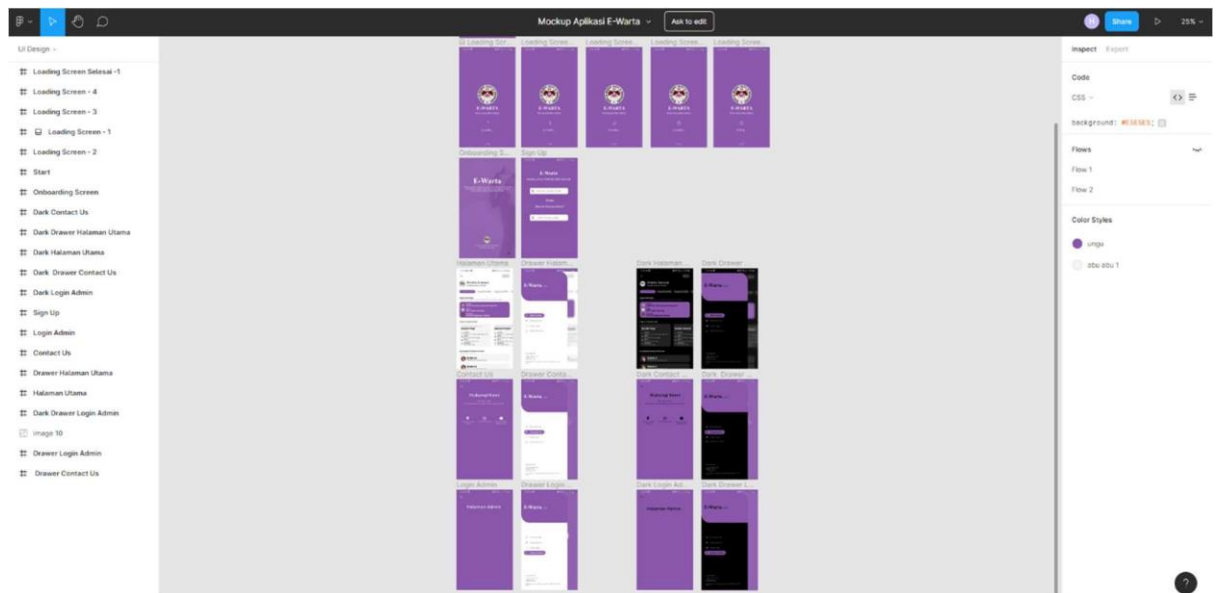


Figure 2. Application Mockup

Figure 3 shows the application in its initial state. This app can be launched by selecting it from the Android app menu.

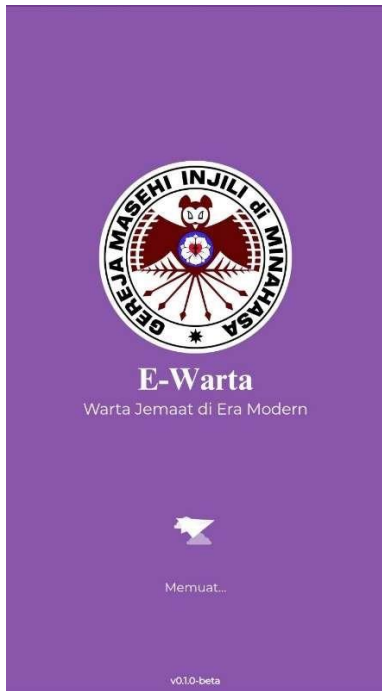


Figure 3. Onboard Screen



Figure 4. Sign-up Page

A glimpse of the list page is shown in Figure 4. On this page, the user can register for the application using their Google account. The main page will appear after a successful login. Figure 5 depicts the main page. There are numerous choices on the main page, including Congregational News, Contact Us, Dark Mode, and the admin page.

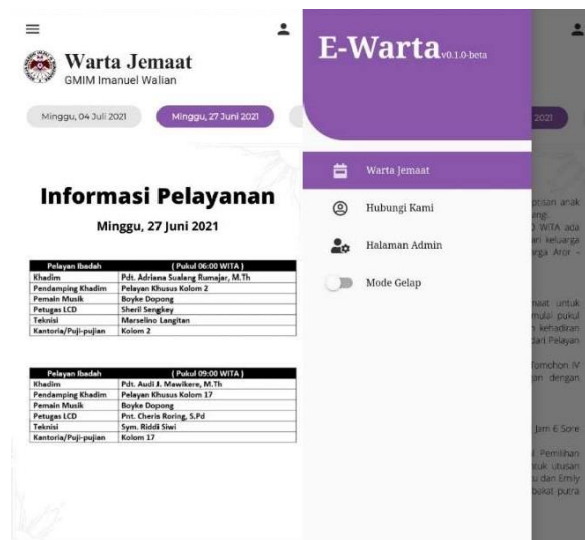


Figure 5. Main Page

The application will look like Figure 6 if the user picks the contact us menu. The program will display information about the church's address or contact information in this screen.

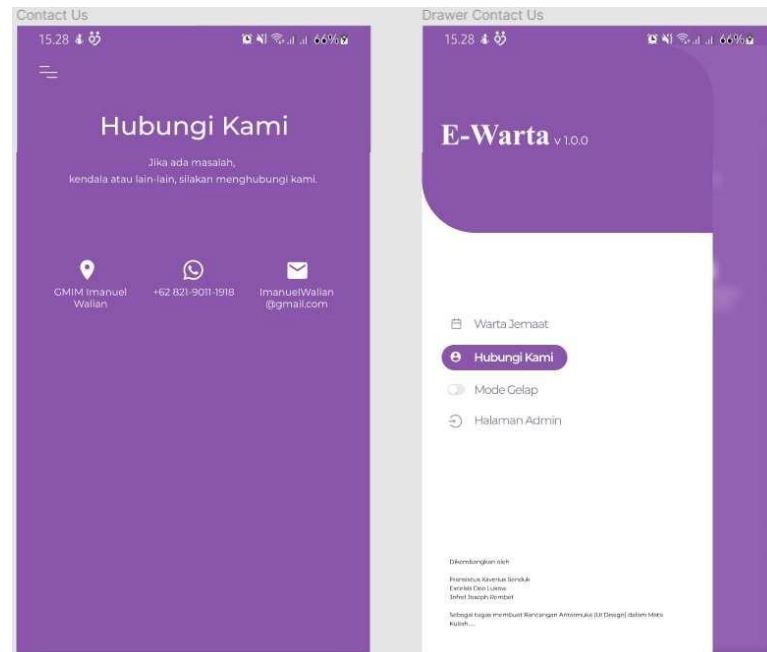


Figure 6. Contact Us

The display is shown in Figure 7. The display will transition from dominating light to dark when the user selects the dark mode menu. This mode is useful in some circumstances, such as when you're in a dark room or want to save battery life on your smartphone.

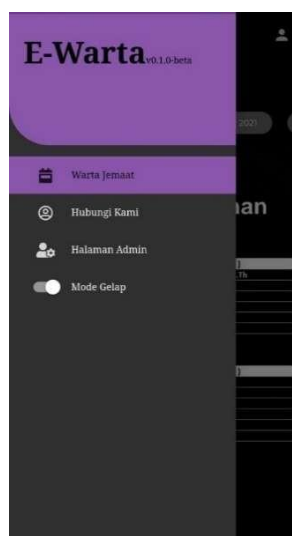


Figure 7. Dark Mode

Figure 8 depicts the admin page after selecting the admin page option. Administrators utilize this menu.

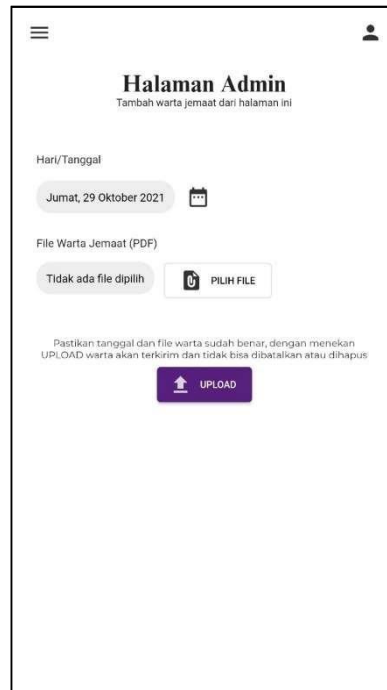


Figure 8. Administrator Page

CONCLUSION AND RECOMENDATION

Conclusion

Digital Congregation News has been successfully deployed and now can be accessed by the church congregation on Android Play Store. This application helps the church in distributing the information around the church to the congregation. With this system, it helps the church in conveying information to the congregation widely and whenever the congregation can access it. Because it's digital, of course, it can be distributed quickly and doesn't cost money to print.

Recommendation

Digital Congregation News Android-Based in The Christian Evangelical Church in Minahasa is an early stage study. This application should be continued and expanded according to needs and as an answer to the challenges of the church today. This application can be developed such as adding several church activities that allow it to be

added to this application. In addition, in the future the church census feature can also be integrated into this application to link church data with congregational census data.

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