

A Generic Review of Messenger Application: WeChat and Whatsapp

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ABSTRACT

Over the Internet today, communication environment is more easy and interesting to the citizen. There are much interesting in modern technology when they provided a good substrate for creating large-scale data sharing, content distribution, and application-level multicast applications. The important objective of this article is getting information about comparison of two distributed system in messenger application. Messenger application is known as a tool communication that can get any information. The distributed system is one of the independent and single coherent systems it was built an application that will be informed that section is being fixed or replaces to serve more applications or users. The distributed system for this article about the comparison of two distributed system in messenger application for *WeChat* and *Whatsapp*, it is also known as the famous application for this generations nowadays.

1. Introduction

The distributed system is part of the independent computer and acts to its users as a single coherent system. But, even within a single system it also ranges from high-performance mainframe computers to join small nodes in sensor networks. There are no assumptions are made through the way when computers are interconnected. In principle of the distributed system, it works to make it easy to expand and scale for users. It makes it normally be continuously available every time. An application and users will be informed that a section is being fixed or replaces will add to serve more applications or users. The distributed system will include a comparison of two distributed system in messenger application for *Wechat* and *Whatsapp* is also one of the famous application for this generations nowadays. For this application, networks of mobile phones can use everywhere and every time, it also important to daily activities. This message is known as “queuing model”, it will form main participants that are sender and receiver [1]. There are many networks of which it is composed the sender will place the message and the respective receiver once receive the messages such as mobile phones networks that are the have internet. In others word, distributed system as one in which two types that are hardware and software components located on the networked computer. It can communicate and coordinate their actions by sending messages. The entire range of systems in which networked a mobile phone important and usefully be implemented. Modern distributed system, messaging for loosely coupled communication when an application operating in functionality to each other, multiple tiers, and providing different services [2].

The messenger application that is connected to the network can use separated by any distance of the user, maybe on separate continents or in the same building or same locations. In

modern technology, most of the messenger application is developed refer on-client server architecture [3]. For design application, in part of the client-server architecture, the interaction between multiple client and server are very important to the designer that needs to be considered because it taking account of the fact that every client interacts with others server at the same time [4]. In social media, the messaging application is tools that have deeply interpersonal communication with each other or grouping. It is social media tool that provides good real-time text transmission over the Internet. Software apps WeChat is the application in the category of social network timeline, quality branded account, games and a large popular to the mobile terminal is becoming major good business transaction platform. Besides that, WhatApps also have similar characteristics with WeChat for messaging application. WhatsApp also used for communication between the smartphones.

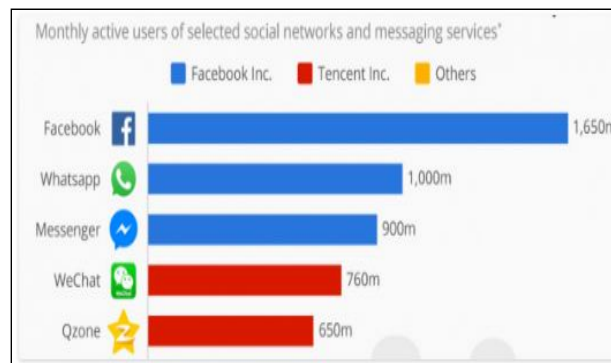


Figure 1.0 Whatsapp and WeChat are the most active messaging application

2. Literature Review

A. WeChat Messenger Application

Messenger application WeChat is most used in the distributed application. WeChat started off known as Instant Messaging app in 2011 and still uses until 2018 as a good communication messenger. These massager applications WeChat can allow send characters and photo fast and support any voice intercom [5].

Advantage WeChat is had good interaction with the interface. Interaction for application WeChat is used color green and white. In human-computer interaction, role color also important in design. Good interaction will make user give more feeling in used it. Messenger application is particularly attractive to this generation nowadays because its agreement users to instantly obtain and share information with a list of their online friends or family [6]. In addition, the basic function of WeChat also includes text, emoticon and voice interaction mode from WeChat friend, group and the public number that can also bring out voice and text that contain interesting information interaction conveniently.

This WeChat also one of the part learning platforms is applied distance education for learning section through teaching resource pushing system. This resource such as client device equipped with WeChat software, teaching resource-bank server and WeChat server [7]. For education, nowadays students like to spend much time for gadget and they can achieve independent, besides being a positive study under various environments and good quality study in healthy life. Due to the fact, the majority of the student has own type mobile device all can feel comfortable with information presentation, engaging learners because it guides learning through the

items they create using the application provided [8]. This application is one private network, that knowledge will be limited and allows file sharing then be viewed by whoever that involve of the communication chat.

Besides that, next to an advantage of WeChat is feasibility applied to Oral English learning. By modern technology, using computerized media and network communication technology to organize teaching and learning processes using the mobile phone. This definition of learning using mobile is “process of coming to know between across multiple contexts among others people and personal interactive technologies to every individual students” [9]. It also practices student to carry out English oral activities and listening wisely as it provides more attractive and interesting to learn with many materials, create active learning by reducing the nervousness by face-to-face oral practice and better use Internet in the directed learning process. For example, WeChat has been providing good support software *JOOX* especially listening for musically.

In addition, as users, they should know that WeChat is one of the public platforms that are very useful for everyone. It is very simple and collective manner which once a push message is sent to the public service account, every one of the accounts WeChat can get the information. The form available (text, voice messages, pictures, video, links, and files)[10].

The disadvantages of WeChat are by distributing the computational workload on peers such as the host by members of the system. In concurrency network, concurrent program execution is the norm. The capacity of the system to process shared resources for increased to the network and the coordination.

Second disadvantages are user have the social profile that makes it easier for them to interact. Likely, there is lot individual use the beautiful picture of someone as a profile picture such as artist picture for their profile picture because users think there are just funs for them. Otherwise, the confidentiality of data is not protected. The problem of spam caused by server pushing messages to users to each other's [8]. For users, overload information will make it spam and will make the risk to third parties.

There are a number of security issues need concerns regarding this WeChat applications. Some users believe are designed not from original either because it is not the first mobile Internet-based messaging application. It has many register user accounts for WeChat worldwide, and its sticker shop considered by some netizens as the prototype of “WeChat” sticker gallery. Some people said this application runs under strict Chinese laws, people who are using it in other countries which can have a threat to privacy.

It wills currently facing many security issues of technical problem and poor security awareness among users. The privacy for personal data is at the highest risk level if the user cannot manage wisely every month. Security issues for malicious also use when networking with strangers expands using two activities “Find People Nearby,” Messages In Bottles” and “Shake” will make you as a user of networking with strangers. Payment risk is also security issues it will happen when the sender sends unencrypted information to the server and then server forward information to the receiver. This security issue is taking seriously for the government because of it also one of the ways of spreading pornographic content among people.

The solution for these issues, if you are still willing to use it as your messaging application, so as intelligent user's application should enhance user experience through technological innovation. For example, WeChat stickers can be developed further independently and creatively. Besides that, another solution is WeChat should strengthening strategic cooperation with operators.

For instance, the transition by the messaging application from communication software transforms to life service platform. Wechat provides users the highest level of control over user privacy. The privacy is the only messaging application to be certified by whitelisting(trustworthy) that has a guide by the law of messaging application. Launch WeChat application, and go to “Settings”, then click under the “Privacy” section, after that choose a disable a number of features. The feature will shows “Public Moments”, “People Nearby”, and “Drift Bottles”.

B. WhatApps Messenger Application

As stated in the introduction, WeChat and WhatApps share some similar features as a messaging application. WhatApps founded in the United State of America in 2010 and has been implemented in Malaysia. These applications function on each smartphone operating system [11]. The applications belong to young and adult generations under 9 until 60 years old for daily life. WhatApps add a description to let know group about important information and visible via the group’s invite link.

First, advantages WhatApps application working as a tool to supplement medical education especially for the medical student on clinical attachments. This application work as send positive feedback and improve communication between tutor and medical student. It sends messaging very fast than WeChat and useful by providing a platform for clarification of uncertain aspects of the course [12].

Second advantages are the good application in health and healthcare for decision making and patient care. Patients share information release forms to let knows all the team members communicate clinical healthy data using Whatsapp. Users think it is application low cost that does not spend so much money and fast technology with the learning and improving patient care while list preserving their privacy. Using WhatsApp give more positive learning and achievement levels [13]. In general, public, send and receive messaging alerts that are relevant to their health needs such as health information and motivational can be used to deliver an alert to users applications. This lay users useful for hosting virtual peer-to-peer support groups.

A third advantage is integrating Whatsapp in the educational system and academia for students. It is the availability of the lecturer learning on weekend or public holiday that will continue outside the classroom. For example, some University making F.O.C for student only using Whatsapp and it is very useful. In will makes there seems to be connection use of technological, among others things Whatsapp enables availability in asking question, scheduling meeting and asking about notes. Figure 1.0 shows an example of group student Whatsapp discussing their class and figure 2.0 show personal messaging with others.

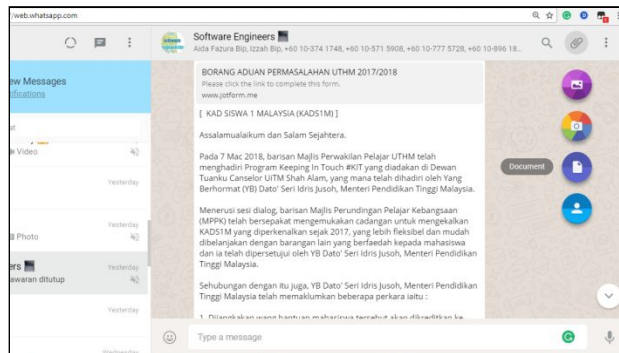


Figure 2: Example group Whatsapp student

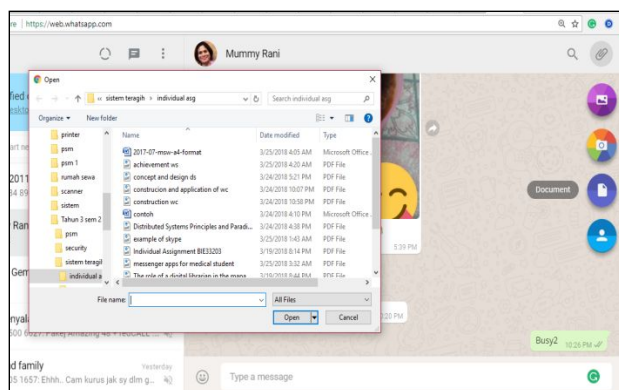


Figure 3: Example of Personal Messaging

But this Whatsapps has disadvantages, it is software that needs to update every 3 months. If updating the software at the same time it needs big memory Smartphone to support. Sometime Smartphone does not support the updating software.

Second disadvantages for this messaging application is annoying when receiving irrelevant or nonsensical messages that make the user, not in good feeling with the channel communication. These will guide to lead people using regular text just for the need of the unidirectional message.

Security issues still happen if user careless on how to protect their application. This is the system of communication that exposed only the communicating parties to access the messages through the medium is encrypted by end-to-end encryption is part of important in WhatApps. Communication with each other available using various properties of the encryption protocols because it used for making the end-to-end communication encrypted and inaccessible for an unauthorized user. The signal protocol also as security issues, because it functions similar to others that need to encrypt both text messages and voice calls by using an asynchronous method under a shared key.

Concerning Whatsapp all the security issues are important, the signal protocol was in architecture designed always updating in keeps users privacy concern in minds between other security issues. This is to ensure that the message sender or receiver cannot be irrefutably tied to any particular

message and safe to send in past by using the various forward encryption techniques. Security protocols include:

- Establishing and Receiving Sessions
- User-To-User And Group Messaging Protocol

In the privacy domain, metadata is encrypted during transit, timestamps, connection duration, connection frequency; phone numbers data will be stored on the servers. Figure 3.0 shows on how to secure your Whatsapp from others.

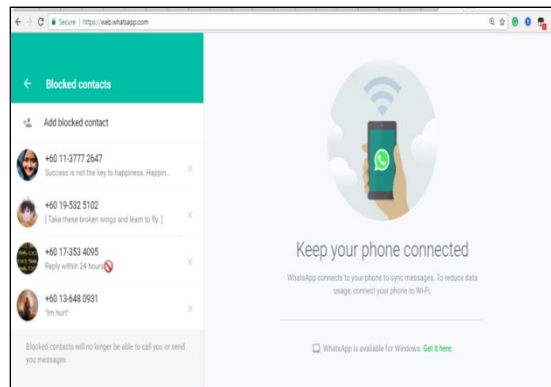


Figure 4: Example of Blocking users from chatting

3. Methodology

The messenger application is implementing using JXTA library. The integration of local proxy, it was testing the chord file-sharing agent by itself. The methodology describes the system without the interference of peer not participating in the system. The tester said the big problem comes from lacking a large-scale test environment. This will happen when the system becomes biggest; the application should have better performance than the client-server application. Figure 5.0 and 6.0 show the description of WeChat and Whatsapp from play store.

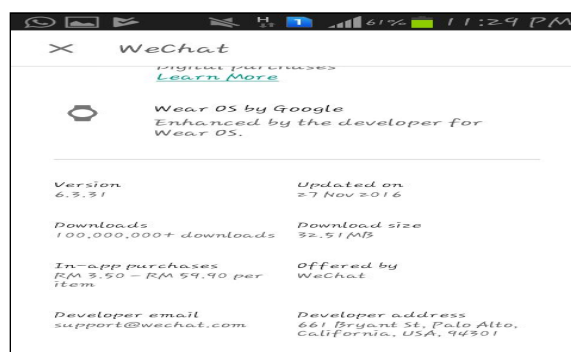


Figure 5: Description of WeChat

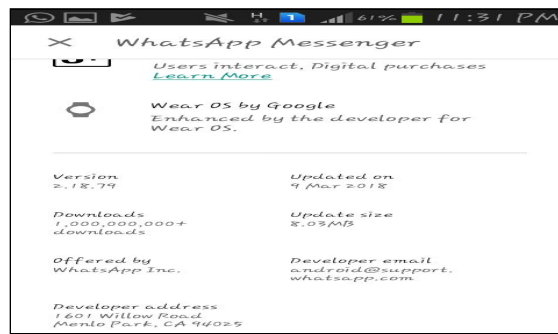


Figure 6: Description of Whatsapp

4. Results and Discussion

The result from Table 1.0 show description a client and server are together built in the classic client-server.

Table 1: Messenger Application Protocol Function description

Module	Description	Application
Registration and Login	User register in register pages	Whatsapp and WeChat
Get notice user “online” or “offline”	The user can get the pop-small text “Online” at the above text message box.	Whatapps
Get notice user “deactivate” account	The user can get the pop-small text “Deactivate” at the above text message box	Wechat
Sending the message to the user	The user can send the message to group chat and personal message with each other.	WeChat and Whatapps
Send message in format media (picture, voice, emoticon)	The user can send the message in format media in group chat and personal message with each other.	WeChat and Whatapps

Logout, Unregistered	User available to log out or unregistered if not interesting with this application	WeChat and WhatApps.
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For this section discussion, the local proxy model very important in messenger application because it will implement. All request client module as a server, there is no server module is needed but share resources via P2P with local proxy on other hosts. The design architecture for information exchanged is categorized in files and folders. In others word, it also synchronized between local proxies using P2P file sharing system known as “Communication Base”

Table 2: Functions of WeChat and WhatApps tools

App / Function	Text	Game	Picture	File	Nearby	Timeline
WeChat	Y	Y	Y	N	Y	Y
WhatApps	Y	N	Y	Y	N	Y

Key: Y- Yes N-No

These messaging applications, making each client can be shared folder through inbox or outbox. The user needs to log in by user id, once login has been done P2P will search function in the filename. So, when user logout, the local proxy will delete the corresponding.

For this part sending and receiving messages, when users send the message to other users the content will be stored in a file with the rename of the name. And every each time user achieve and read a message, the local proxy will give feedback send a query to the P2P system for downloading from other hosts’ local proxies. By increasing demands on three types; flexibility, scalability and a message-oriented middleware known as an infrastructure for loosely coupled interprocess communication in an enterprise service bus or clouds[14].

5. Conclusion

As a conclusion, the messaging application may have positive and negative side technology when designing and implementing the distributed system to the world but as a user account, it need be considered together with other issues. The important things should be considered about performance, confidentiality, availability, integrity, and comprehensibility for responsibility as a user. In the distributed system, the standard rule that content of the syntax and semantics of those services that should follow in the messaging application that are the only activity openness are offered service

References

- [1]Coulouris, G., Dollimore, J., & Kindberg, T. (2012). Distributed Systems: Concepts And Design. Computer (Vol. 4). Retrieved From [Http://Www.Amazon.Com/Dp/0321263545](http://www.amazon.com/Dp/0321263545)
- [2]Guo, M. (2015). A Preliminary Analysis Of Developing Mobile Learning Application Of College English Based On WeChat. In International Conference On Advanced Education And Management (ICAEM 2015) (Pp. 428–432).
- [3]Jøsang, A., Miralabé, L., & Dallot, L. (2015). Vulnerability By Design In Mobile Network Security *, 14(4).
- [4]Kamel Boulos, M. N., Giustini, D. M., & Wheeler, S. (2016). Instagram and Whatsapp in Health and Healthcare: An Overview. Future Internet, 8(3), 1–14. [Https://Doi.Org/10.3390/Fi8030037](https://doi.org/10.3390/Fi8030037)
- [5]Liu, Z. (2014). A Study on The Application Of WeChat In ESP Training. Theory and Practice in Language Studies, 4(12), 2549–2554. [Https://Doi.Org/10.4304/Tpls.4.12.2549-2554](https://doi.org/10.4304/Tpls.4.12.2549-2554)
- [6]Min, T. (2014). Research on Wechat Marketing Strategy of Enterprises Which Is Based On The SICAS Model. International Journal of Business and Social Science, 5(61), 213–217.
- [7]Nesmith, C. (2014). WeChat for Education, 1–13.
- [8]P. Ahuja, S., & Mupparaju, N. (2014). Performance Evaluation and Comparison Of Distributed Messaging Using Message Oriented Middleware. Computer and Information Science, 7(4), 9. [Https://Doi.Org/10.5539/Cis.V7n4p9](https://doi.org/10.5539/Cis.V7n4p9)
- [9]Raiman, L., Antbring, R., & Mahmood, A. (2017). Whatsapp Messenger As A Tool To Supplement Medical Education For Medical Students On Clinical Attachment. BMC Medical Education, 17(1), 1–9. [Https://Doi.Org/10.1186/S12909-017-0855-X](https://doi.org/10.1186/S12909-017-0855-X)
- [10]Stipe, C., Eugen, M.State-of-the-art of messaging for distributed computing systems (2017). [Https://Doi.Org/10.2507/IJVA.3.2.1.34](https://doi.org/10.2507/IJVA.3.2.1.34)
- [11]Uysal, A. K., Gunal, S., Ergin, S., & Gunal, E. S. (2013). The Impact of Feature Extraction And Selection On SMS Spam Filtering. Elektronika Ir Elektrotechnika, 19(5), 67–72. [Https://Doi.Org/10.5755/J01.Eee.19.5.1829](https://doi.org/10.5755/J01.Eee.19.5.1829)
- [12]Wang, Y., Li, Y., Semaan, B., & Tang, J. (2016). Space Collapse: Reinforcing, Reconfiguring and Enhancing Chinese Social Practices through Wechat. Proceedings of The 10th International Conference On Weblogs And Social Media, (ICWSM), 427–435.
- [13]Wu, L., & Yang, X. (2013). A Research on The Services Of University Mobile Library Based On The WeChat Public Platform. Research on Library Science, 18, 13.