

Social Networking Security Loopholes

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Abstract

In today's world, usage of social networking is very common through which people feel more comfortable to get connected to others and stay in touch even miles apart by chatting and sharing moments with each other, WhatsApp is among one of such platform. WhatsApp is an Instant Messenger which allows communication between one or more devices through internet without paying a penny for communicating. Almost all mobile platform namely Android, iPhone, BlackBerry, Windows, Nokia S40, Symbian users can easily use this application. It allows you to exchange messages, videos, audios, and images.

WhatsApp is an excellent tool to exchange ideas but at the same time proving harmful to its users. As people are getting more addicted to WhatsApp application they get into the trap of security pitfalls due to the heavy usage of it. This research paper tells about the concerning security pitfalls of WhatsApp.

Keywords: Social Networking, Instant Messaging, WhatsApp, Facebook

Introduction

Social network plays a vital role in today's world to build social connections or relations among people who have common interests or activities. The concept of social networking with the growing age of internet has taken a complete changed shape in the form of social networking websites, instant messengers, and voice over internet etc. Among those WhatsApp is one of fastest growing instant messenger.

WhatsApp is a Cross-platform application through which user can transfer their messages to one another or can communicate with each other. WhatsApp provides various features like text messaging, sharing audio, video, voice notes, location, group chats and so on. Location can be known by using the Location and Map Services provided by the different OS'es. Despite of these things, privacy is the major issue which affects the user.

In India 76% of smartphone users use only WhatsApp as Instant messenger. This messenger has no restrictions on the length of a message and also you don't need to put a SIM card on a phone but you should have a smartphone or a supported phone with internet

connection and available storage space to use this messenger application.

There are certain advantages of using this application are:-

1. It does not cost, not even a penny for sharing texts and other related things.
2. It takes a less storage space, even smaller than normal application and games.
3. Convenient to get connected with many friends at the same time by starting group chat on WhatsApp.
4. One can broadcast a message to several people at the same time.
5. Sharing of Voice Notes, audio video files, images are made possible through WhatsApp.

On March 31, 2013 the Saudi Arabian Communications and Information Technology Commission (CITC) issued a statement regarding possible measures against WhatsApp, user cannot block contact on whatsapp as well as no feature of friend request.

In November, Whatsapp comes up with a new feature known as Read Receipts which alerts senders when their messages are read by recipients. Within a week, The public authority for data privacy of the German state of Schleswig-Holstein has advised against using

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WhatsApp, as the service lacks privacy protection such as end-to-end client side encryption technology.

Recently, WhatsApp has launched a web based WhatsApp application. It has been released only for android for now and as a plugin for google chrome browser.

With some good there's always a bad side, WhatsApp is also a no exception. There are some security issues and pitfalls with WhatsApp instant messenger application which is proving to be harmful for the users round the world.

Impact of Social Networking Platform

Social networking platform has become a most significant part of our society.

It has integrated with our communication medium and extended our social interactions. People who feel shy interacting face to face with one other, feels great while interacting with each other over these platforms. They without hesitating share their perspectives and thoughts.

It allows people to communicate easily and enormously, irrespective of time and distance.

It has following impacts:

- Social Networking has emerged as a voice if common people throughout the world.
- It has created a wide interaction of people with instant communication between people anywhere anyplace and anytime.

Whatsapp

WhatsApp is an alternative for SMSs, which are once very popular among the youth, this application software is a pun on "what's up". It has been developed targeting mainly the smartphone users with an internet connection.

It is one of the social networking platform giant which has very user friendly features and possess the ability to run on multiple platforms like iPhone, BlackBerry, Android, Windows Phone and Nokia smartphone.

How it grew up

WhatsApp came up with a broad vision and emerged as a great deal for the smartphone users besides all

other SMSs alternatives like BBM, TELEGRAM, WeChat.

There are over 400 million users of WhatsApp proving it as the best SMS replacement technology and platform. The issues faced by the users in any other social networking platform is eliminated by WhatsApp in a very better and easy to use manner.

The excitement of using WhatsApp results in sudden boom of smartphone sale in Asia-Pacific region, especially in India.

The drastic growth in use of WhatsApp made the Mark Zuckerberg, founder of Facebook Inc., to acquire it, with a \$19 Billion valuation.

With this move he cemented himself as the global leader in mobile media by using a very unique acquisition strategy. Even after the acquisition, WhatsApp seems to be growing at very good rate all over the globe. Benefits of WhatsApp are:

- WhatsApp provides us with sharing messages, pictures, audios, vedios in just a one go without charging a single penny.
- Provides with group message where one can interact with more than one people at the same time.
- It also facilitate users with message broadcasting.
- Good marketing mode: Now a days many organisations and individuals like politicians are using it as a marketing tool for promoting themselves.

Survey on Whatsapp

From Survey, data has been collected from US, Brazil, China, South Africa, and Indian Smartphone.

As shown in above fig, Survey says that 43 per cent users use Whatsapp in India and just 35 per cent use Facebook Messenger used in US.

Security in Whatsapp.

WhatsApp requires a microSD card storage to store its data on the users' phone. After WhatsApp installation, it synchronizes with the phone's contact showing users who have a WhatsApp account associated with their number.



Figure 1. Usage of Whatsapp in Different countries. [4]

When a mobile with WhatsApp installed is turned on, “com.WhatsApp” process receives a signal to start the “ExternalMediaManage” and “MessageService” services which runs in the phone’s background till the phone is turned on.

Exchanges messages are stored in ‘msgstore.db’ i.e, SQLite database. Researchers found in earlier version of WhatsApp this was the main security concerns. When news hits internet, security researchers started researching with Whatsapp database (msgstore.db) to

An Average WhatsApp User Sends >1,000 Messages per Month

Average monthly WhatsApp usage per active user*



Figure 2 Average monthly Whatsapp usage per active user. [4]

retrieve the conversation even the deleted ones from the chat option. But Whatsapp reacted soon and came up with an encryption mechanism to protect its database.[1]

Whatsapp Flaw can Expose your Messages in a Minute

Users must be careful while downloading WhatsApp. User should read an application permissions carefully before installing it, your messages history could access by others.

There is a trick which provides granting access to database. Since, WhatsApp have criteria to store their messages into microSD card, applications can access all messages if permission is granted.

The Netherlands-based technical consultant says that, if screenshots contain code and added to Android games, it is easy to retrieve data from a database.

According to Thijs Alkemade, a computer science and mathematics student Utrecht University in the Netherlands, WhatsApp send as well as recieved messages are encrypted with the same key, means if hacker can intercepts all messages, he or she can easily analyze them to cancel out the key and recover the plain text.[9]

Issues Related to Whatsapp

General Issues

- **Anyone can contact you over WhatsApp:** WhatsApp uses mobile numbers as the unique ID. Setting up WhatsApp is a easy task. Once you set up your WhatsApp account you are automatically shown into the list of WhatsApp contacts of who so ever is on WhatsApp and has saved your number in their mobiles. So it becomes more easier for anyone to contact you without seeking your permission which sometimes may results in bullying or harassing anyone over whatsapp.
- **No much security required:** Operating WhatsApp doesn't required any password, it doesn't provides any password security to secure it from other users.
- **No permission for contacting or adding in a group:** Before adding into a group no notification

or request is received, which may lead to become a part of a unwanted group. Though one can delete and exit the group but chances of distributing of your number among unknowns and unwanted people are same and later those unknowns of the group may bother you by contacting you over WhatsApp as anyone can contact anyone over WhatsApp just by your WhatsApp numbers.

- **Anyone can view your mobile number and profile picture:** If you are a part of any group consisting of some of the unknown people too, then they can view your numbers and can even see your personal data like profile picture & status if unknowingly you have set privacy to public.
- Sometimes there may be people who are saved in your contact lists and to whom you don't wish to show your profile pictures in this case there is no option of customise your privacy settings.

Network Issues

- **Chat backup on their servers:** WhatsApp automatically generates backups every day at 4 AM and stores them in the WhatsApp folder of your Android phone. This folder is either located in your device's internal memory or external microSD card. It may restores less recent or most recent backups only, for this you have to uninstall and reinstall WhatsApp. They can get to read chats. If ever their server gets hacked your data might be stealing and could be misused.
- **Man in middle attack:** The hackers can easily get to read one's personal chats and data if they can get into server through Man in the Middle attack on server and as encryption and decryption keys are same as used by Whatsapp they can easily decrypt the data.

Psychological issues:

- It has decreases the self-esteem among the people and increases the psychological disorder.
- People are getting divorced: Introducing of second tick, blue tick (when read) results into fights and raised misunderstandings when people didn't get replies.

Remedies

Intelligent use of WhatsApp may reduce these psychological or to some extent these network related issues and the other concerning issues.

Also WhatsApp developers must provide with more strong security and privacy features which can protect one's privacy and personal data and other contents.

Conclusions

The social networking is growing and it is somewhat good to people in general as it provides with true meaning of freedom of speech and expression, but in some ways it is also harmful too. So one should use this platform for his own good but with a cautious mind that these can also hamper one's privacy and can get into the personal life without the permission of the users.

WhatsApp though on one hand is a good tool to communicate with everyone around the globe and

provide a best and cheapest way for the messaging, but at the same time it is also not away from the drawbacks which one should keep in mind while using. One must be capable enough to protect its privacy and personal wellbeing, without that there won't be much use of such platform.

So, while using such application one must be cautious enough to know that what sort of data they are sharing with the developers and how they will be using it to intrude in the personal life.

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