

## **WhatsApp Requirements Specification**

### **Introduction**

This document describes in substantial detail, the software requirements of WhatsApp, an online instant messaging application. This document will describe the problems WhatsApp intends to address, the functional requirements and non-functional requirements of the proposed system. This document is intended for the stakeholders of the application, to assist in the development process of WhatsApp as well as to serve a reference to clarify any future issues that the stakeholders may run into.

### **Description of the problem**

Currently, text based user communication is based on emails, messaging services provided by one's telecommunications provider or through the messaging application built inside a social media platform such as Facebook. Each of these poses a unique issue that prevents user from getting the cheap, reliable, easy to use messaging services. Emails tend to be too verbose and don't associate user's phone contacts with their email ids. Thus, to send an email message a separate database of email ids, need to be maintained. It also restricts the use of inline media such as emoticons that can be attached to the message. Text messaging services provided by telecommunications providers are not cost effective and involve paying a monthly, quarterly or annual subscription fee. Social media based messaging applications might provide media rich, free online messaging services, but often require the user to install the heavy encompassing social media application. The problem of having a separate database of contacts, not linked to one's phone's contacts, also arises in this case.

WhatsApp aims at tackling the above issues and providing a seamlessly integrated, web based, mobile messaging application, that identifies the contacts on a user's mobile device and enables free text messaging services. For better interaction and user experience, WhatsApp intends to provide support for different media types such as audio, video and emoticons.

### **Use Cases**

User – adds contacts from contact list on phone

User – sends a message to an individual

User – sends a message to a group

User – views message history

### **Description of the software solution**

WhatsApp is an online instant messaging application that integrates user's contacts from their phonebook with the application and enables exchange of messages free of cost over the internet.

## **Enhancement Requests**

### **1. Last Seen**

Client has requested that user be able to see the date and time when his/her contact was last using the application.

### **2. User Profile**

User should be able to set their profile picture and a status limited to 150 characters.

## **Functional Requirements**

### **1. User Registration**

User must be able to register for the application through a valid phone number. On installing the application, user must be prompted to register their phone number. If user skips this step, application should close. The user's phone number will be the unique identifier of his/her account on WhatsApp.

### **2. Adding New Contacts**

The application should detect all contacts from the user's phone book. If any of the contacts have user accounts with WhatsApp, those contacts must automatically be added to the user's contact list on WhatsApp.

If any of the contacts have not yet registered on WhatsApp, user should be provided with an invite option that sends those contacts a regular text message asking them to join WhatsApp along with a link to the WhatsApp application on Google Playstore.

### **3. Send Message**

User should be able to send instant message to any contact on his/her WhatsApp contact list. User should be notified when message is successfully delivered to the recipient by displaying a tick sign next to the message sent.

### **4. Send Attachments**

User should be able to send audio, video and images as attachments.

Audio formats that the application should support : mp3 wav

Video formats that the application should support : avi mp4 flv gif

Image formats that the application should support: jpg png

File size must not exceed 2MB per message.

### **5. Broadcast Message**

User should be able to create groups of contacts. User should be able to broadcast messages to these groups.

### **6. Message Status**

7. User must be able to get information on whether the message sent has been read by the intended recipient. If recipient reads the message, 2 ticks must appear next to the message read.

## **Non Functional Requirements/ Software Attributes**

### **1. Scalability**

WhatsApp should be able to provide instant messaging services to 1 billion users at any given time.

### **2. Privacy**

Messages shared between users should be encrypted to maintain privacy.

### **3. Robustness**

In case user's device crashes, a backup of their chat history must be stored on remote database servers to enable recoverability.

### **4. Performance**

Application must be lightweight and must send messages instantly.

## **Operational Requirements**

Application must work on all mobile and tablet devices. User interface must be consistent on all devices.

## **Long Term Plans**

Future plans include providing inline document viewer that lets users view pdf and word attachments within the application chat window itself. Further optimizations can be made to improve performance especially over the network. This includes making most network specific requests as non-blocking background processes. We also aim to expand our infrastructure to include more database servers so as to take back up of user data more frequently.

## **Maintenance and Support Costs**

Maintenance will be handled by in house team of developers in the first 6 months post application launch. Within this period, we aim to hit our target of 100,000 users. Once this target is achieved, we intend to outsource maintenance and support to a third party who will be trained for 4 months on system maintenance and troubleshooting.