Prompt Softech Data Estimate

How Much Does it Cost to Make an App like WhatsApp?

By Yesha Pipalia | Version 1.0

Contents

Introduction

With 1.3 billion monthly active users globally, WhatsApp is the most popular and widely used messaging app of the time. No wonder how it is making big money! The app has certainly piqued the curiosity of app development companies about how much it costs to build a messaging app like WhatsApp and what makes it so successful.

However, if you trace back through the history, communicating with people was not as easy as now. Earlier, you could not make swift calls, or chat, or see them through video calls as we do today. Writing letters and emails were more prominent back then, leaving you waiting for the receiver's response for a long time—seldom, as long as a month or two. The business too wasn't mobile then. If you aimed to market your business, the only means were distributing pamphlets or calling your customers individually to let them know about your promotional offers or any other development. But, people still used to manage everything despite the unavailability of the modern mediums of communication we have today.

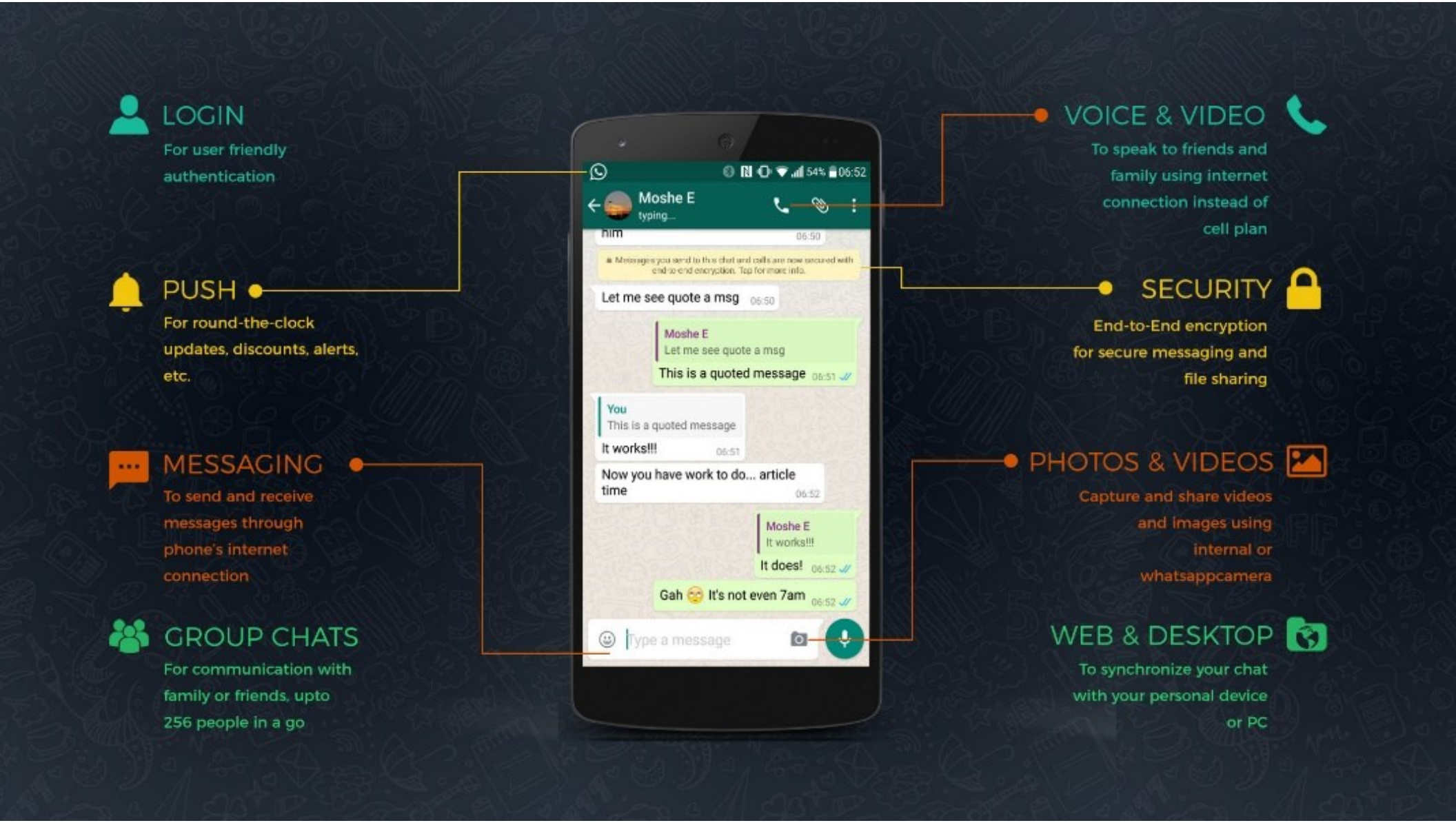
So, how did these things evolve over the years? Perhaps, our needs changed as we gradually moved towards the technology realm. The demand to quickly get in touch with people anywhere in the world is the primary need today, and WhatsApp is the harbinger of instant messaging technology.

The Working of WhatsApp

WhatsApp is an instant messaging service for mobile phones and web that relies on the internet for sending and receiving messages. It is considerably cheaper than the conventional SMS service provided by the mobile network carriers. There're minor charges for subscribing to the service, and it can work on low network connection as well. The app is especially useful for broadcasting messages to a group of people and messaging people overseas.

Released in January 2009 by its founders Brian Acton and Jan Koum, WhatsApp has seen many transformations over the years. Initially, the app was built specifically for iOS platform. Later, the app extended its support to other platforms namely Blackberry, Symbian OS, Android OS, Windows Phone, Samsung's Tizen OS, and WhatsApp Web for PCs. Subsequently, the messaging service was hosted on Windows and macOS operating systems on May 10, 2016. WhatsApp allows sharing images, videos, GIF files, and files through messaging, making it so quick and easy to communicate, unlike the older times.

WhatsApp is free for the users. It manages over 4.5 billion images, 100 million voice calls, and over 55 billion messages per diem (www.expandedramblings.com/index.php/whatsapp-statistics/), making it one amongst the apps with the most extensive user base.



The Features of WhatsApp

There're tons of messaging apps available on all of the app stores. But, what makes WhatsApp so loved and desirable amongst the others? What makes it stand out? It is the way the designers and the developers have paid detailed attention while infusing each feature into the app. Albeit, we know how these elements function, there're many technicalities in the backend we've hardly given a thought. Let's have a closer look at all of these features that form the mainstay of WhatsApp and what all has gone into building each before we get into the cost of development.

Messaging

The default and basic functionality after all! WhatsApp just uses your phone's internet connection to send and receive messages, so there's nothing like SMS fees. For the times you're offline, you can receive the messages when you turn on your data connection or Wi-Fi.

Group Chat

It is this particular feature that has grabbed the attention of the app's users. It's no more limited to chatting with just one person now. You can share messages, pictures, and videos to a number of people—as many as 256 at the same time! You can also keep a name for your group, customize or mute the notifications, and a lot more; the way you like it. Connecting with multiple people in a go couldn't be as easy as enabled by group chats.

Voice and Video Calls

Adding this feature, WhatsApp has notched up the level of how far a messaging app can go in creating an exceptional user experience. Speaking to your friends and family living in any country over a voice call or seeing them face-to-face couldn't be as seamless. WhatsApp uses your phone's internet connection for this and not the voice calling minutes of your phone's plan. So, it's free!

Photos and Videos

WhatsApp's built-in camera feature lets you capture and share all your valuable moments with anyone—instantly—even while your phone is running a slow internet connection. Isn't that amazing?

Document Sharing

All your essential documents, PDFs, presentations, spreadsheets, and files can be shared quickly, eliminating the trouble of emailing or using any other media sharing app. You can send data up to 100 MB so you can instantly receive what you need and send whom you intend to.

Voice Messages

This specific feature has earned an awe from all its users. Reason being, you can simply record your voice message and send it to the other side when you feel the least of typing the entire story. What more could you ask?

Live Location

Recently, WhatsApp delighted its users by providing the convenience to let other people know where they are. Now, you can easily share your real-time location, be it hanging around with friends, business meeting, or your place of commute, with anyone and anytime. Live Location sharing enables you to decide who can see your location and for how long. In a way, the feature is helpful to let your loved ones be assured of your safety.

End-to-End Encryption

While sharing your personal moments on WhatsApp, you want all your communications to be secure. That is why, WhatsApp provides built-in security by encrypting all your messages, calls, or anything that you share so it's no one else but just you and the receiving person who can read or listen to your messages—ruling out WhatsApp too.

Technology and Platform to make an app like WhatsApp

The backend technology WhatsApp is built on doesn't implement anything complicated as it is assumed. However, enough security algorithms are employed to ascertain unbreakable guard against any breaches and malware infiltrating the application as well as users' personal accounts. Let's explore the technology stack being exercised by the app.

Server-side Language

WhatsApp has its server-side written in Erlang programming language for it is open source and provides support for concurrency and dynamic software updating apart from being fault tolerant and highly available. The app also uses the custom version of Extensible Messaging and Presence Protocol (XMPP) to create a user account based on phone number and store it as the username. Later, the app scans the contact list from the phone's address book with that of WhatsApp's central database of users and automatically add the contacts into the WhatsApp contact list of the user.

Operating System

The app works on FreeBSD operating system for its advanced and robust security, storage, and networking features. FreeBSD has its uses in diverse scenarios namely server, desktop, and embedded systems.

Database

WhatsApp implements Mnesia, a distributed database management system for its tight coupling to Erlang (Mnesia is implemented in Erlang), high fault tolerance, fast real-time data lookup, dynamic reconfiguration, and enhanced operational performance.

Web Server

The app exercises YAWS, an open source web server (written in Erlang) for its scalability, reliability, and stability while serving dynamic data generated by the app. YAWS lends high concurrency and elegance derived from the underlying lightweight threading system of Erlang.

Native Development Language

To support and be widely available to the users across different platforms, WhatsApp employs suitable languages for each, namely Objective-C for iOS, Java for Android, and C# for web platforms.

Cost Components and Timeline

So far, we've seen all the essential components that compose WhatsApp. And these play critical if you are planning to develop a similar one. Each component and feature takes its own time to be planned, designed, developed, tested and approved before it is put to use publicly to the users. All the technical details comprising of technology and tools used by WhatsApp have been mentioned afore. In general, the primary tasks include:

- Backend Development
- Frontend & Web App Development
- UI/UX Designer
- Native Platform development
- Quality Analysis

While each of these components takes its own cost and time to develop, it entirely depends on the development team deployed. The number of resources involved varies among different companies. However, a general (average) specification of the resources required to make an app like WhatsApp could be drawn based on the below lines:

- 2 Mobile App Developers (1 for iOS + 1 for Android)
- 2 Web Developers (1 for Frontend + 1 for Backend)
- 2 Quality Analysis Engineers
- 1 UI/UX Designer
- 1 Project Manager

If more resources are available, they could be involved in the app building procedure to make it faster. And, accordingly, the cost would change. Now, let's see the cost estimate for developing the components.

Backend, Frontend, and Database/Cloud

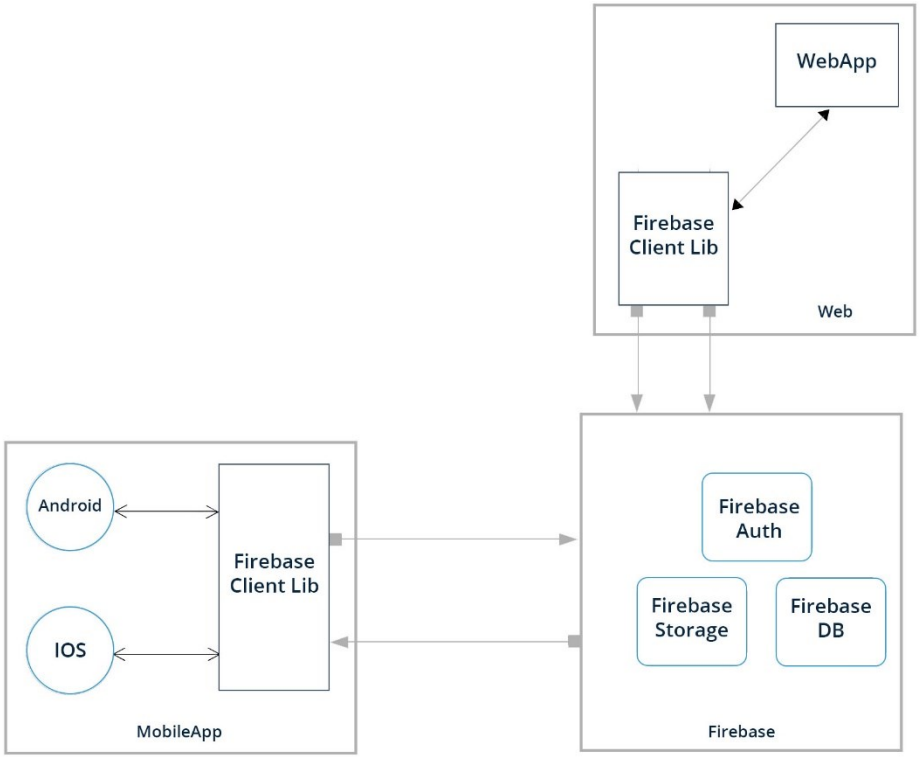
As WhatsApp has a massive database of users, we need a storage platform that can support the same features as of Mnesia. Optionally, Firebase Cloud Messaging (FCM) could be used for messaging and notification services. FCM can be employed for all the platforms—Android, iOS, and Web applications.

Firebase is a comprehensive solution that also provides services for client-side authentication wherein the user credentials of the users are stored within the user management system of Firebase. It supports real-time database in the form of an API service that synchronizes and stores application data across clients in the Firebase cloud.

Further, Firebase Storage which is backed by Google Cloud Storage offers the facility to upload and download files like images, videos, audios, voice messages and other user content.

It would take minimum 240 Days to set up a database architecture, backend, and frontend including the features mentioned (excluding voice and video calls) for the app while using Firebase as the foundation, as estimated by our development team.

The explanatory chart below depicts the entire architecture of the app similar to WhatsApp.



For the backend, ASP.Net MVC can be used as an alternative to Erlang. ASP.Net MVC is a flexible architecture that speeds up the development process, provides multiple views, can be integrated with JavaScript Framework and comes cheap comparatively.

For the User Interface (UI) or Design purpose, Angular JS and Bootstrap are excellent front-end framework tools. These are used to make responsive web designs, can be naturally integrated with different platforms & frameworks, and can be easily customized as per the design of the application.

Mobile App

Our development team suggests that if you're planning to develop an app like WhatsApp, it would be favorable to start from just one platform—either Android, iOS, Blackberry, Windows or Web—keeping the target area and audience in mind. While iOS and Android are preferred mostly, you'd easily be able to find developers having enough knowledge and experience working on Java, Swift, C# or Objective-C.

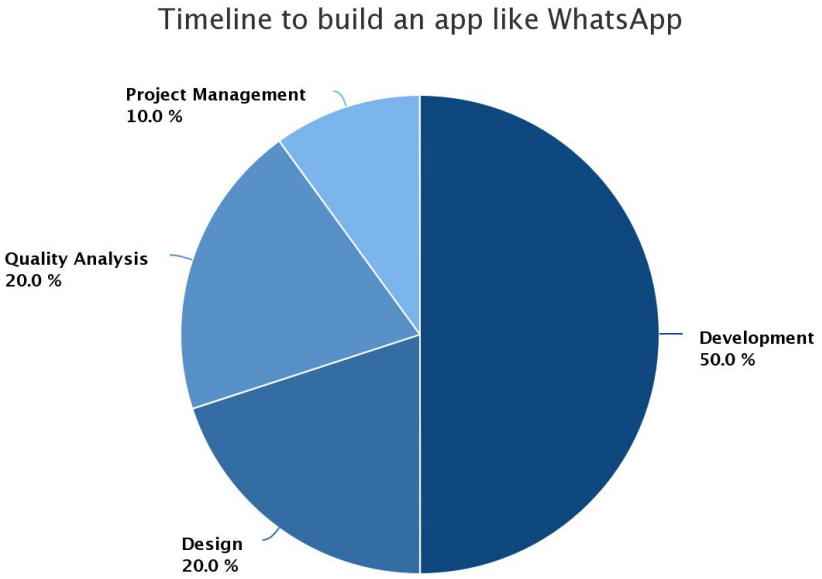
Our development team does a valuation that about 240 days would go into developing the app for each platform considering each aspect of native development like messaging app, libraries, and cloud services, etc.

The Final Word

The cost of software and application development varies among distinct countries. The rates depend upon the workforce employed and for how long (total hours). The charge per hour significantly affects the full pricing of the project. The US and UK charge around $100-150, the European countries impose $40-80 while the Asian countries levy the cheapest hourly rates fluctuating between $20-40. Since the prices keep oscillating, the developer team at Prompt Softech shall cling to an average $20 hourly standard for developing a messaging app like WhatsApp.

Category	Hourly Rate	Day Count Per Person	Total Cost (approx.)
iOS	$ 20.00	30	$ 4,800.00
Android	$ 20.00	30	$ 4,800.00
Web Frontend	$ 15.00	30	$ 3,600.00
Web Backend	$ 25.00	30	$ 6,000.00
QA	$ 12.00	48	$ 4,608.00
Design	$ 15.00	48	$ 5,760.00
PM	$ 12.00	24	$ 2,304.00
Total		**240**	**$ 31,872.00**

Our development team consumes a timeline length of 200-240 days if it has to develop a WhatsApp-kind messaging app. The Development phase (for both Mobile and Web) of the app consumes around half of the total time, i.e., 50%, while the Designing (20%), Quality Analysis (20%), and Project Management (10%) phases require quite less time comparatively.



As a result, we see that the total cost of developing an app like WhatsApp by tallying the values of all the components reaches approx. $31,872. This price includes the development of the chat app for both Mobile (Android and iOS) and Web platforms. We emphasize upon the fact that the factors mentioned above differ geographically, hence the overall cost. Therefore, if you wish to develop the app supporting other platforms too like Windows, Blackberry, PC, etc., you may have to shell out up to $70,000 or more accordingly.

Get More Info (Click Here)