

Messaging App MVP

Comparable to: WhatsApp / Telegram

A lean mobile messaging app inspired by WhatsApp and Telegram. It provides private and group communication through text, media, and one-to-one voice calls.

Estimated MVP cost

\$25,150

Estimated effort

445 hours

Key Features

- Phone-number account creation with SMS verification.
- One-to-one text chat and group text chat.
- Media sharing and read receipts.
- One-to-one voice calls at launch.
- Push notifications and in-app account deletion.

Out of Scope for This MVP

- US-based hosting and privacy compliance.
- App Store and Google Play compliance.
- Free beta launch with no payment processing.
- Voice calling is limited to one-to-one calls for the MVP.
- No monetization is included during the beta.

Full Cost Breakdown

Item	Hours	Cost
The system shall allow a visitor to create an account using a phone number and shall use the phone number as the account identity.	5	\$280
The system shall send a one-time verification code by SMS and shall complete registration only when the code is valid and unexpired.	7	\$390
The system shall authenticate registered users by verified phone number and maintain an authenticated session for the mobile application.	7	\$390
The system shall allow authenticated users to send and receive one-to-one text messages associated with the conversation participants.	14	\$770
The system shall allow authenticated users to create user-defined group chats, manage membership, and send and receive group text messages.	20	\$1,100
The system shall allow users to attach and exchange supported photos and files within one-to-one and group conversations.	18	\$990
The system shall record and display read receipts for supported one-to-one and group messages.	10	\$550
The system shall allow authenticated users to initiate, receive, answer, decline, and end one-to-one voice calls.	25	\$1,380
The mobile application shall request microphone access only when a user initiates or answers a voice call and shall handle denied permission states.	5	\$280

This is a starting estimate for a custom-built MVP, designed and built from scratch. You own all the code and IP with no platform lock-in. WhatsApp / Telegram are trademarks of their respective owners; App Developer Studio is not affiliated with, endorsed by, or sponsored by WhatsApp / Telegram.

© 2026 App Developer Studio.

Created by [App Developer Studio](#)

The system shall send push notifications for new messages and incoming voice calls on supported iOS and Android devices.	16	\$880
The mobile application shall explain the purpose of notifications before requesting notification permission and shall handle denied permission states.	5	\$280
The system shall allow users to report users and objectionable text, media, and group content.	15	\$830
The system shall allow users to block and unblock other users and shall prevent blocked users from initiating or delivering prohibited interactions.	12	\$660
The system shall allow authenticated users to request account deletion within the application and shall provide a web-based deletion request process.	16	\$880
The system shall hard-delete associated account data after account deletion, except data subject to legally required retention.	19	\$1,050
Planning	48	\$2,640
Project Management	38	\$2,090
Testing	23	\$1,270
DevOps	19	\$1,050
Design & Frontend Build	58	\$3,190
AI Tokens	0	\$630
Security	23	\$1,270
Risk (10% Contingency)	42	\$2,310
Total	445	\$25,150

Estimate Assumptions

- Estimates cover application and backend development across Flutter mobile and the specified web flow, excluding NFR overhead.
- Supabase, Twilio, OneSignal, FCM, managed storage, and a managed voice provider are available and used through standard SDKs or APIs.
- UI designs, supported file types, size limits, retention rules, blocking policy, and deletion disclosures are provided during implementation.
- Operational moderation staff and report-review procedures exist; the estimate covers the basic review queue rather than staffing.
- Voice calls use provider-managed signaling and media infrastructure; custom telecommunications infrastructure is excluded.
- Standard platform behavior is assumed for iOS and Android permissions, push delivery, and background execution.
- Hard deletion is implemented through application workflows and provider APIs; legal retention and backup purge policies are configuration dependencies.

Risks That Could Change This

- Voice-call behavior may expand if provider integration requires custom signaling, background-call handling, or platform-specific native work.
- Media scanning, large-file handling, and retention requirements may increase storage and processing implementation effort.
- Blocking rules for shared groups and existing conversations require product decisions before enforcement can be finalized.
- Account deletion may require additional compliance, audit, backup, or provider-specific deletion workflows.

This is a starting estimate for a custom-built MVP, designed and built from scratch. You own all the code and IP with no platform lock-in. WhatsApp / Telegram are trademarks of their respective owners; App Developer Studio is not affiliated with, endorsed by, or sponsored by WhatsApp / Telegram. © 2026 App Developer Studio.

- Push delivery and incoming-call reliability depend on Apple and Google platform restrictions and third-party service behavior.

User Stories

US-1 - Visitor

As a visitor, I want to create an account using my phone number so that I can use the messaging service.

US-2 - Visitor

As a visitor, I want to verify my phone number by SMS so that my account is protected from unauthorized registration.

US-3 - Logged In App User

As a logged-in app user, I want to send and receive one-to-one text messages so that I can communicate privately with another person.

US-4 - Logged In App User

As a logged-in app user, I want to participate in group text chats so that I can communicate with multiple people together.

US-5 - Logged In App User

As a logged-in app user, I want to share media in conversations so that I can exchange relevant photos and other supported files.

US-6 - Logged In App User

As a logged-in app user, I want to see read receipts for my messages so that I know whether recipients have viewed them.

US-7 - Logged In App User

As a logged-in app user, I want to make one-to-one voice calls so that I can speak privately with another person in real time.

US-8 - Logged In App User

As a logged-in app user, I want to receive notifications for new messages and incoming calls so that I can respond promptly.

US-9 - Logged In App User

As a logged-in app user, I want to report or block users and objectionable content so that I can control unwanted interactions and help maintain a safer community.

US-10 - Logged In App User

As a logged-in app user, I want to delete my account in the app and through a web request so that my account data is removed when I leave the service.

Requirements

FR-1 - Account Registration

The system shall allow a visitor to create an account using a phone number and shall use the phone number as the account identity.

FR-2 - Phone Verification

The system shall send a one-time verification code by SMS and shall complete registration only when the code is valid and unexpired.

FR-3 - Authentication

The system shall authenticate registered users by verified phone number and maintain an authenticated session for the mobile application.

FR-4 - Direct Messaging

The system shall allow authenticated users to send and receive one-to-one text messages associated with the conversation participants.

FR-5 - Group Messaging

The system shall allow authenticated users to create user-defined group chats, manage membership, and send and receive group text messages.

FR-6 - Media Sharing

The system shall allow users to attach and exchange supported photos and files within one-to-one and group conversations.

FR-7 - Message Status

The system shall record and display read receipts for supported one-to-one and group messages.

FR-8 - Voice Calling

This is a starting estimate for a custom-built MVP, designed and built from scratch. You own all the code and IP with no platform lock-in. WhatsApp / Telegram are trademarks of their respective owners; App Developer Studio is not affiliated with, endorsed by, or sponsored by WhatsApp / Telegram.
© 2026 App Developer Studio.

Created by App Developer Studio

The system shall allow authenticated users to initiate, receive, answer, decline, and end one-to-one voice calls.

FR-9 - Device Permissions

The mobile application shall request microphone access only when a user initiates or answers a voice call and shall handle denied permission states.

FR-10 - Notifications

The system shall send push notifications for new messages and incoming voice calls on supported iOS and Android devices.

FR-11 - Notification Permissions

The mobile application shall explain the purpose of notifications before requesting notification permission and shall handle denied permission states.

FR-12 - Safety and Moderation

The system shall allow users to report users and objectionable text, media, and group content.

FR-13 - User Blocking

The system shall allow users to block and unblock other users and shall prevent blocked users from initiating or delivering prohibited interactions.

FR-14 - Account Deletion

The system shall allow authenticated users to request account deletion within the application and shall provide a web-based deletion request process.

FR-15 - Data Deletion

The system shall hard-delete associated account data after account deletion, except data subject to legally required retention.

NFR-1 - Performance

The system shall target API response times below 200 milliseconds for standard synchronous requests under expected beta load.

NFR-2 - Scalability

The backend shall use a managed database platform capable of scaling with beta users, conversations, messages, and media metadata.

NFR-3 - Observability

The mobile application and backend shall provide performance monitoring, error tracking, and operational logs sufficient to diagnose core user journeys.

NFR-4 - Security and Privacy

The system shall protect account, message, media, call, and report data through authenticated access control, encryption in transit, and least-privilege authorization.

NFR-5 - Availability and Reliability

The system shall provide reliable message, notification, media, and call services with retry or recovery handling for transient failures.

NFR-6 - Platform Compatibility

The mobile application shall support current target versions of iOS and Android and shall comply with applicable platform permission and store policies.

Requirements Assumptions

- The MVP consists of iOS and Android mobile applications plus a web account-deletion request flow.
- No third-party integrations are included except SMS delivery, push notifications, voice calling infrastructure, media storage, and monitoring services.
- Phone numbers are unique account identifiers and SMS verification is available in the launch markets.
- Messages and shared media are accessible only to intended conversation participants, subject to moderation and legally required access.
- The beta supports text messages, photos, and a defined subset of file types with configurable size limits.
- Voice calling is one-to-one only at launch; video calling, conferencing, and call recording are excluded.
- User-created groups support multiple members, with membership and administrative rules defined during detailed design.
- Basic reporting and blocking are in scope; staffing and procedures for operational report review are project dependencies.

- Account deletion is immediate hard deletion by default, subject to legal retention, backups, fraud prevention, and audit requirements.
- The service is free at launch and has no payments, subscriptions, advertising, or in-app purchases in the current scope.
- Supabase-managed database infrastructure and Firebase Performance Monitoring are the baseline technology assumptions.
- Specific capacity, availability targets, retention periods, supported regions, and minimum device versions will be finalized during estimation and architecture.

Technical Specification

TS-1 - Mobile Application

Build iOS and Android applications with Flutter and Dart, using Riverpod for state management and Material Design 3 for the UI system.

TS-2 - Authentication

Use Supabase Auth with JWT-based sessions and Twilio SMS verification for phone-number registration and authentication.

TS-3 - Authorization and Access Control

Implement server-enforced authorization for conversations, groups, media, calls, reports, blocking, and account deletion using authenticated user identity and least-privilege rules.

TS-4 - Backend and API

Provide a REST API over HTTPS using Supabase-managed backend capabilities, PostgreSQL, and optional edge functions for asynchronous or privileged operations.

TS-5 - Data Storage and Media

Use Supabase-managed PostgreSQL for accounts, conversations, messages, groups, receipts, calls, reports, and deletion state; use managed object storage for media files and metadata.

TS-6 - Real-Time Communication

Implement near-real-time message and presence updates through backend-supported realtime mechanisms and integrate a managed one-to-one voice-calling provider.

TS-7 - Notifications

Use OneSignal and Firebase Cloud Messaging for push notifications on iOS and Android, with deep links to messages and incoming calls.

TS-8 - Web and Admin UI

Build a Next.js, React, and TypeScript web application using shadcn/ui and Tailwind CSS for account-deletion requests and administrative report review.

TS-9 - Hosting and Environments

Host web and admin applications on Vercel and use Supabase-managed infrastructure for database and backend services; maintain development, staging, and production environments.

TS-10 - CI/CD and Testing

Use GitHub Actions for backend and web pipelines and CodeMagic for mobile build and store-release workflows, with unit, integration, and end-to-end testing.

TS-11 - Security and Privacy

Protect data with TLS 1.2+, encrypted managed storage, JWT authentication, least-privilege authorization, secure secrets management, and privacy-aware deletion controls.

TS-12 - Observability and Operations

Provide centralized application logs, error tracking, performance monitoring, audit events, service health checks, and alerting for core user journeys and integrations.

TS-13 - Moderation and Account Lifecycle

Implement report submission, blocking, operational review queues, account-deletion requests, hard-deletion processing, and legally required retention exceptions.

Technical Assumptions

- The MVP includes Flutter iOS and Android applications plus a Next.js web flow for account-deletion requests and administration.
- Supabase Auth, PostgreSQL, storage, and optional edge functions are the baseline backend technologies.

This is a starting estimate for a custom-built MVP, designed and built from scratch. You own all the code and IP with no platform lock-in. WhatsApp / Telegram are trademarks of their respective owners; App Developer Studio is not affiliated with, endorsed by, or sponsored by WhatsApp / Telegram.
© 2026 App Developer Studio.

Created by App Developer Studio

-
- Twilio is used for SMS verification; OneSignal and Firebase Cloud Messaging are used for push notifications.
 - Vercel hosts web and admin applications; GitHub Actions and CodeMagic provide CI/CD automation.
 - Development, staging, and production environments are provisioned separately with isolated credentials and data.
 - Phone numbers are unique account identifiers and SMS delivery is available in the launch markets.
 - Voice calling is provided by a managed third-party service and supports one-to-one calls only at launch.
 - Media storage, supported file types, size limits, retention, and scanning rules are configurable beta policies.
 - Admin roles are limited to authorized operational staff and all privileged actions are auditable.
 - Account deletion is immediate hard deletion by default, subject to legal retention, backups, fraud prevention, and audit requirements.
 - Data residency, supported regions, minimum mobile OS versions, capacity targets, and uptime objectives are finalized during architecture and estimation.
 - The service has no payments, subscriptions, advertising, or in-app purchases in the current scope.