

How to Create a Video Chat App: Explaining Features, Monetization, and Technologies

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We've updated this article to describe all steps needed to create a video streaming app

The tendency of a remote lifestyle changed the way people cooperate.

[Buffer's remote work report](#) stated that 31% of respondents can work

remotely. The question is, how digital nomads manage communication issues?

Table of contents

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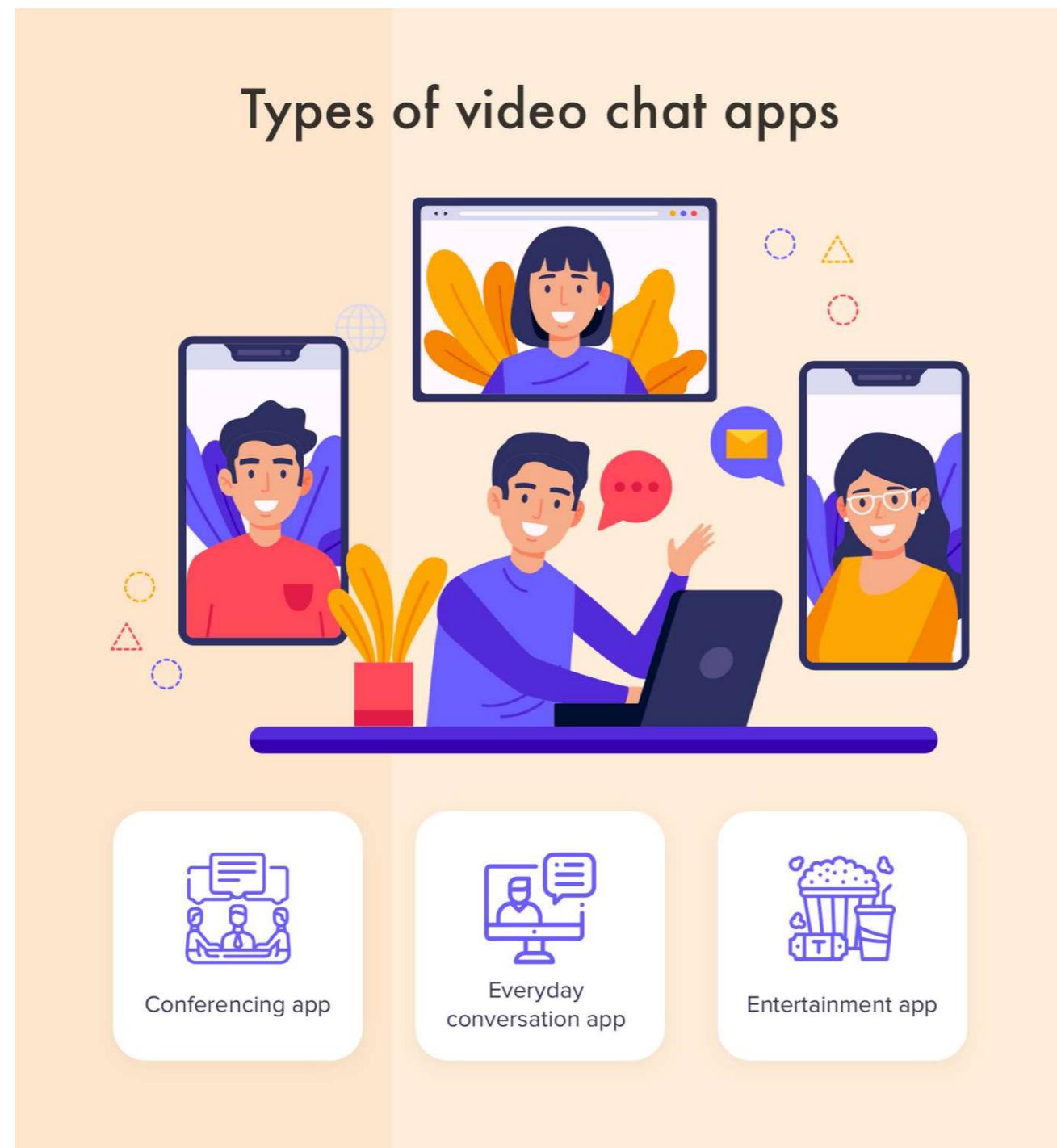
To provide an uncut conversation experience on-the-go, startups and companies create video chat apps. Apps like **Viber** and **WhatsApp** were created by enthusiast entrepreneurs and now gain millions in revenue. Still, you need to define a set of features and understand a budget for video chat app development. Not talking about hiring specialists who'd build the app.

In this article, I'm going to outline features, steps, and tech stack needed to build a video chat app.

What Are the Types of Video Chat Apps?

The main purpose of these apps is to stream a video from the user's front or back camera to others. Every app has its target audience. It can be enterprises with their frequent meetings or general users looking for a simple way to communicate with friends and fight with boredom. You have to keep your target audience in mind to build a successful video chat app that satisfies user needs.

So, there are several types of video chat apps and user groups for whom CLEVERROAD they're built for.



Three main types of video chat apps

Video Conferencing

This type is normally used for meetings involving many participants **CLEVERROAD** (around 500 users). Conferencing video chat apps can be used for business, work, and e-learning. The main advantage is the support for dozens of users participating in a conference at the same time.

It's impossible to develop a video chat app for conferences without a superb video and audio quality. Besides, the app should automatically adjust audio and video bitrate quality according to the user's internet connection speed. But they may lack some other features. **Skype** is a well-known example. It has a solid mobile app, but a rather weak desktop version. Additional features like reactions and statuses leave much to be desired.

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Another example is **Zoom**, a popular solution for those who want many participants on a call. With an enterprise plan, it can support up to 500 users per conference. However, a recent popularity growth revealed some **serious security issues**. It turned out that Zoom doesn't use end-to-end encryption. While this issue exists, it's recommended not to exchange any

sensitive information via Zoom. On top of that, a free subscription provides **CLEVERROAD** conferences no longer than 40 minutes, which may not be enough.

Video Calling Apps

Some messengers have a video chat feature. Despite the fact that their main purpose is instant messaging, they still let users arrange conferences. **Facebook Messenger**, **WhatsApp**, **Viber** can make video calls. These apps don't limit the conference time and are distributed for free. However, a slight disadvantage is the participant limit. Facebook allows up to eight users while WhatsApp only four. Still, eight users are more than enough for many to keep in touch with their friends and family.

Entertaining Apps

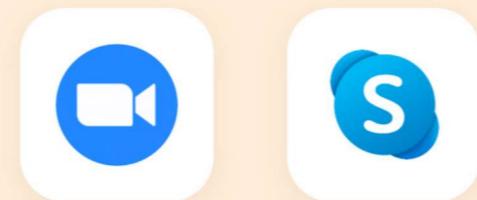
How to build a multi-user video chat app that fights boredom? The final type on our list answers this question. It lets users chat while playing games. For example, **Houseparty** has some built-in games. When user contacts are online, they receive a notification and can invite them to join the party.

Discord is another example. It's a complex app for gamers that lets users make video and audio calls, launch gaming streams, monitor what games user's friends play, and what groups they create. Video chat app's interface may appear to be overloaded with features, but it just takes some time to get used to it.

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Examples of video chat apps

Conferencing app:



Zoom

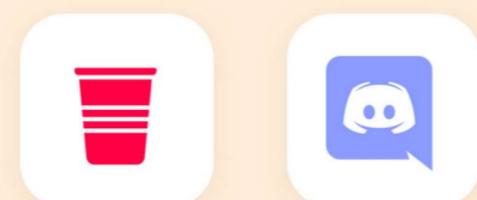
Skype

Video calling apps:

Facebook
Messenger

WhatsApp

Entertaining apps:



Houseparty

Discord

Top favorite video chat apps

How to Build a Video Chat App?

For now, you know all the main types of video chat apps.

However, there may be a situation when you need to integrate a video chat into a ready-made app. For example, telehealth apps can't survive without video chat. If that's your case, it's better to contact a [software development company](#) and decide how to integrate this feature.

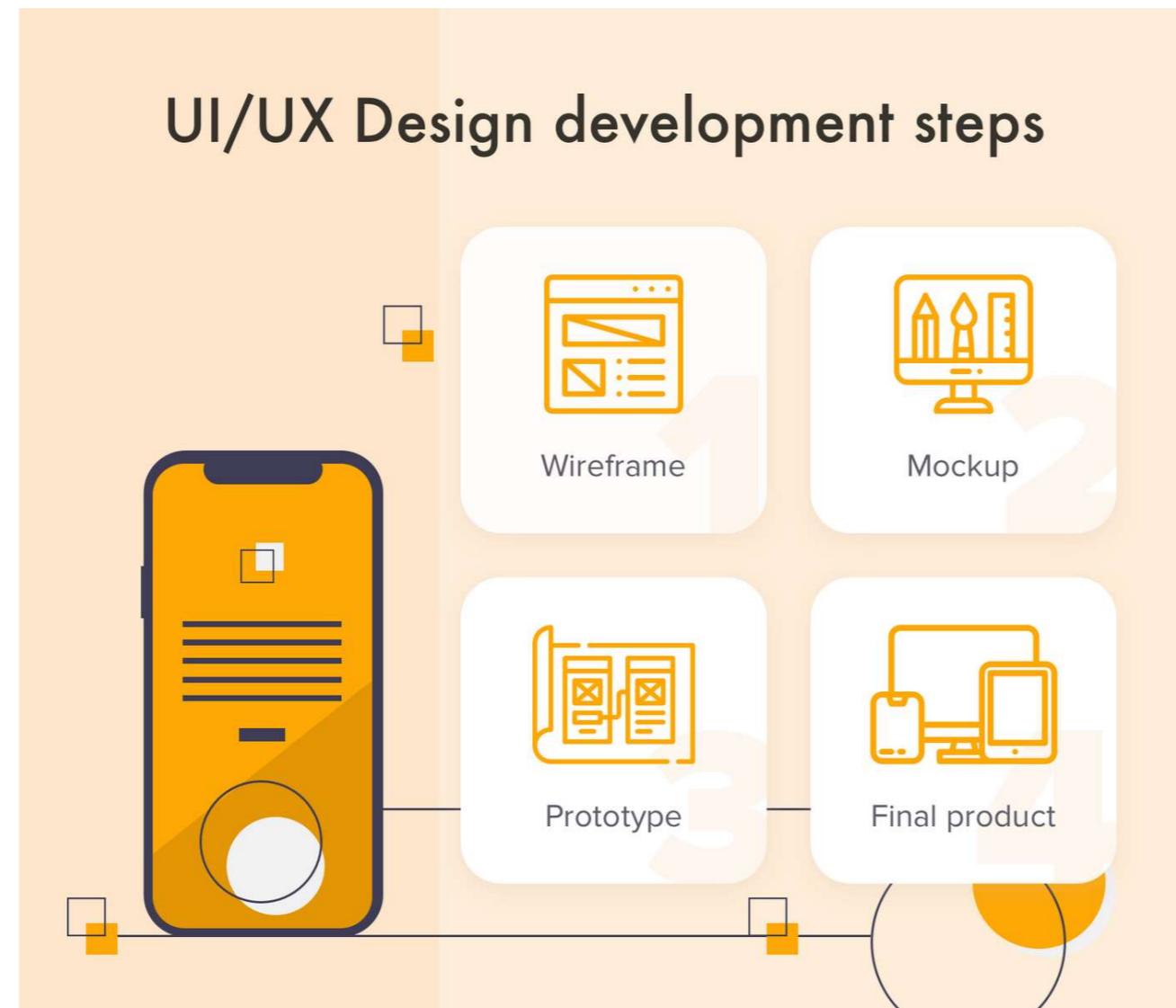
CLEVEROAD Find out the major development steps that guarantee a successful product launch.



UI/UX Design

UI/UX design services come in the first place. If you're aiming at a wide audience, your design should be minimalistic and intuitive. A UI with specific features may suit a particular audience. However, if it has a ton of buttons and menus, it'll scare off the majority of users.

If you create a video chat app for users of all ages and technical proficiency, make sure that it will be convenient for every single person.



4 steps to create an outstanding UI/UX design

CLEVEROAD Backend Development

Server logic is a foundation for video chat app development. There are several ways to build the backend. You can either build it from scratch or use various software as a service (SaaS) solutions, like **PubNub**. Building an app from scratch gives you more flexibility, while SaaS solutions will save you time.

We will discuss the tech stack in detail later on.

Video Streaming Protocol Integration

Transmitting a live video/audio via the app is possible due to the WebRTC (Real-Time Communication) protocol. WebRTC protocol provides features, like peering, streaming, audio/video codecs for communication between users. In simple words the server exchanges some data between the clients that are willing to connect to each other. That's how they can start a direct connection, that is independent of the server.

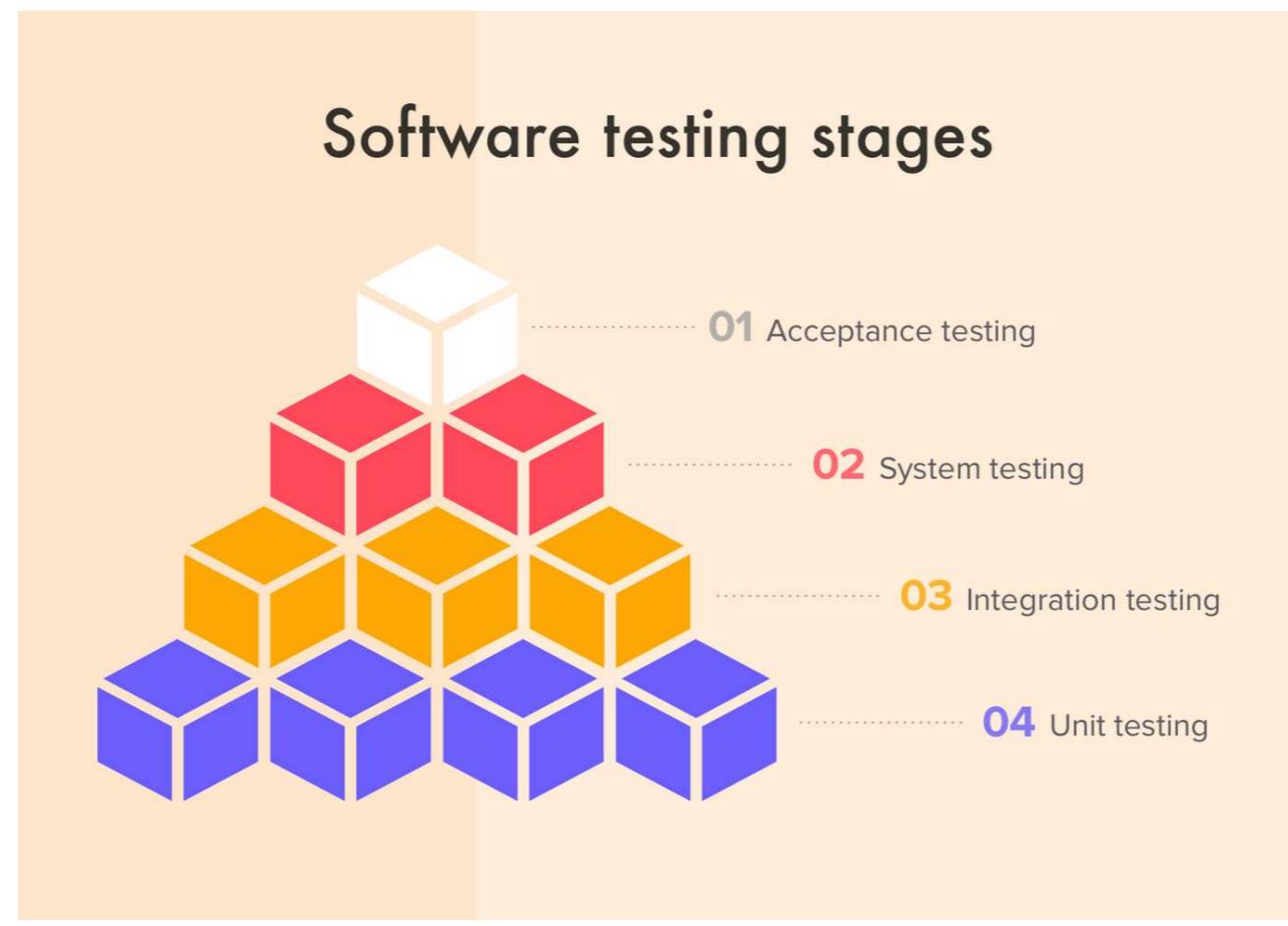
On top of that, WebRTC is a secure protocol for video chat app development. This derives from the fact that software companies are building healthcare HIPAA compliant apps applying this protocol.



Want to know what HIPAA is and why it's better not to mess with it? [Check out this article!](#)

Testing Stage

Make sure that every line of your code works as it should. Bugs can lead to audio-video desync, failures of some features, or even personal data leaks. That's why quality assurance is so important. Of course, it's unreal to launch an ideal product. Developers will fix issues after they get user feedback. Still, the fewer bugs are in the initial version the better user experience will be.



Need some real-life QA examples? In
[this post](#) you'll find out how we

perform testing at Cleveroad!

Select the Team

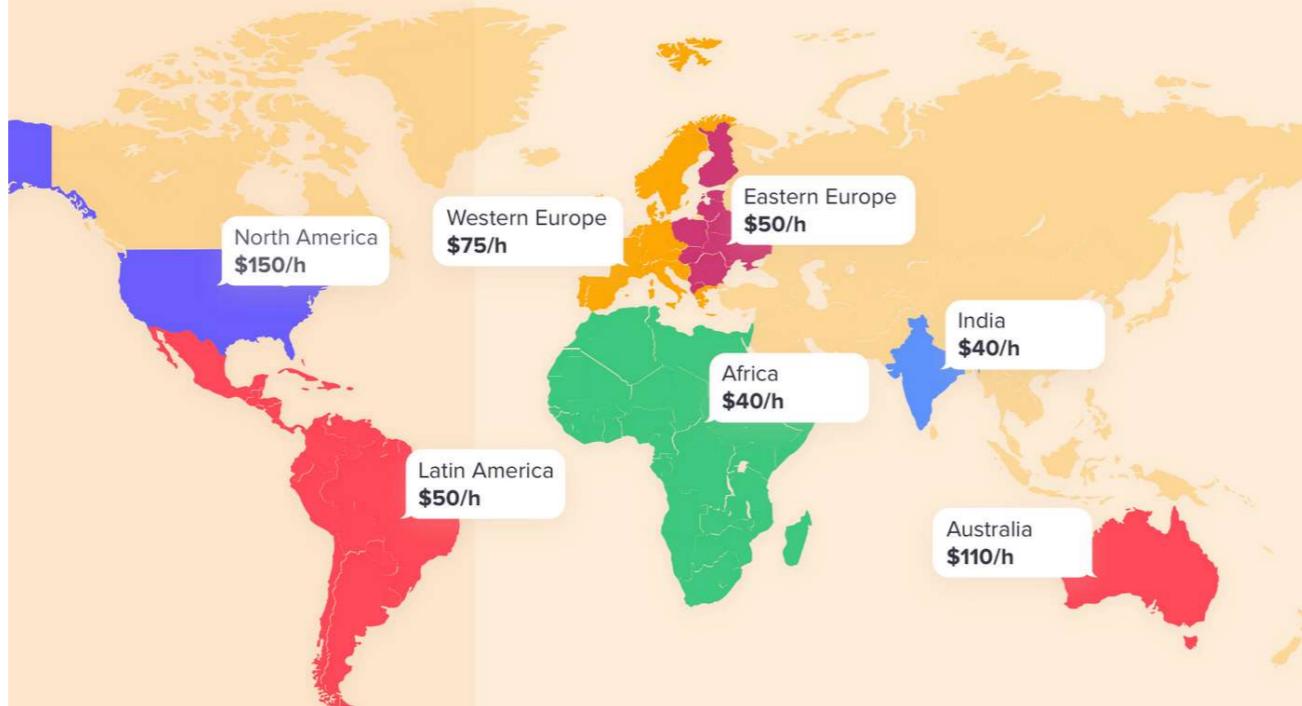
To bring your project in life, you'll need a software development team. You can hire an in-house team of developers or outsource your project companies in other countries.

If you're aiming at long term cooperation, an internal development team is your choice. With your own team, you can get face-to-face communication and completely control the video chat app development process. However, this approach requires you to rent an office, pay for hardware/software, and waste time on recruiting. On top of that, in-house developers usually charge way more than outsourcing teams especially talking about North America.

On the other hand, you can hire an outsourcing software development team. First of all, this strategy is attractive in its cost flexibility. The average developer rate in Eastern Europe (popular outsourcing destination) is **\$50/hour**, which is fairly cheaper than **\$150/hour** in the US. Also, a huge talent pool allows you to find developers in no time. It saves team hiring time, so your project will be delivered faster. Even though you may face some communication issues, the majority of companies arrange meetings at a suitable time for the client.

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Developer rates in different regions



Popular outsourcing destinations

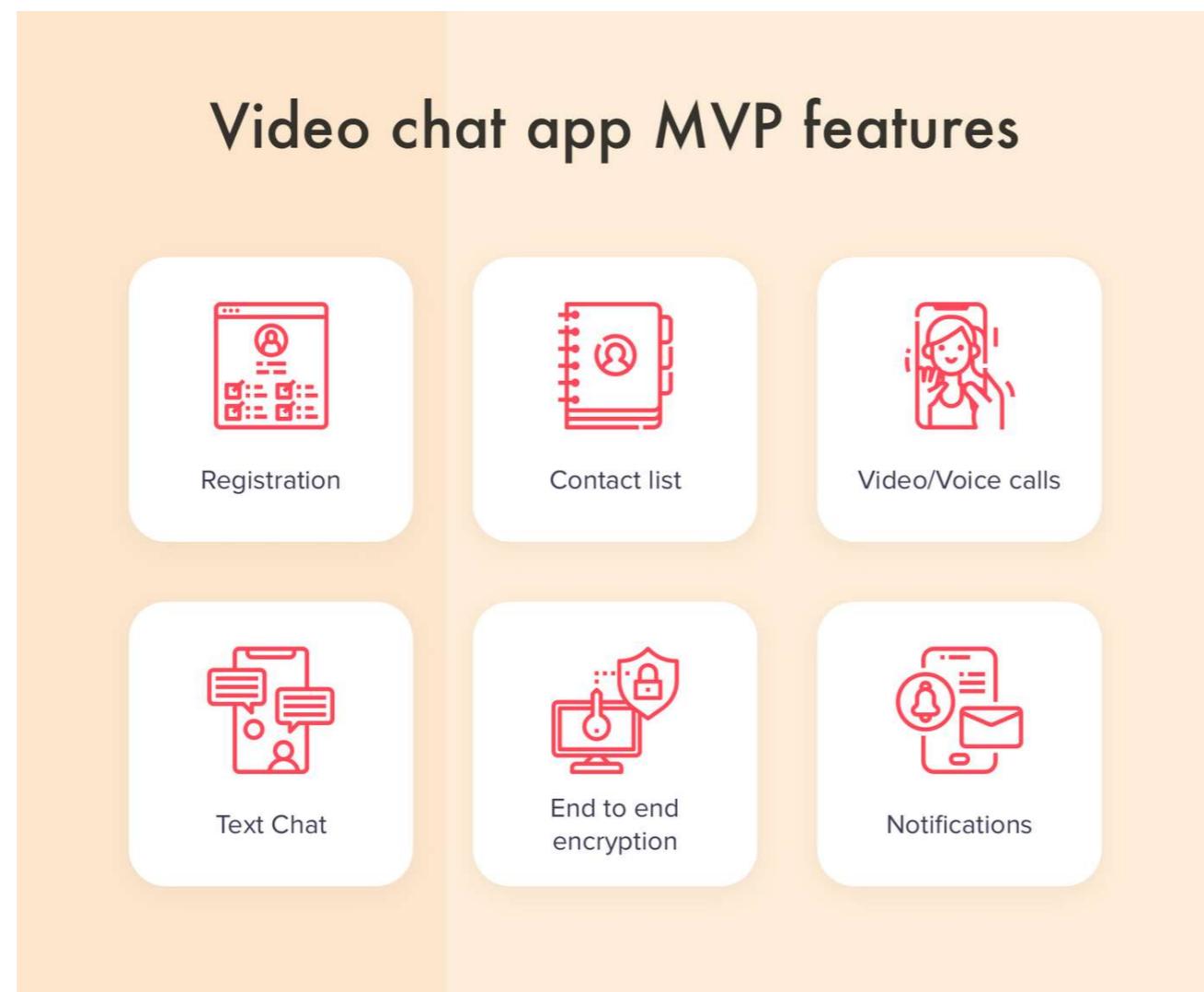


Here you can find more [details about different software development practises!](#)

Video Chat: MVP Features

To test the potential of your idea, it's better to create a video chat app MVP (Minimum Viable Product) first. A minimalistic set of features will help you

understand what your product lacks and how to improve it. Let's get through the basic features needed to develop a video chat app.



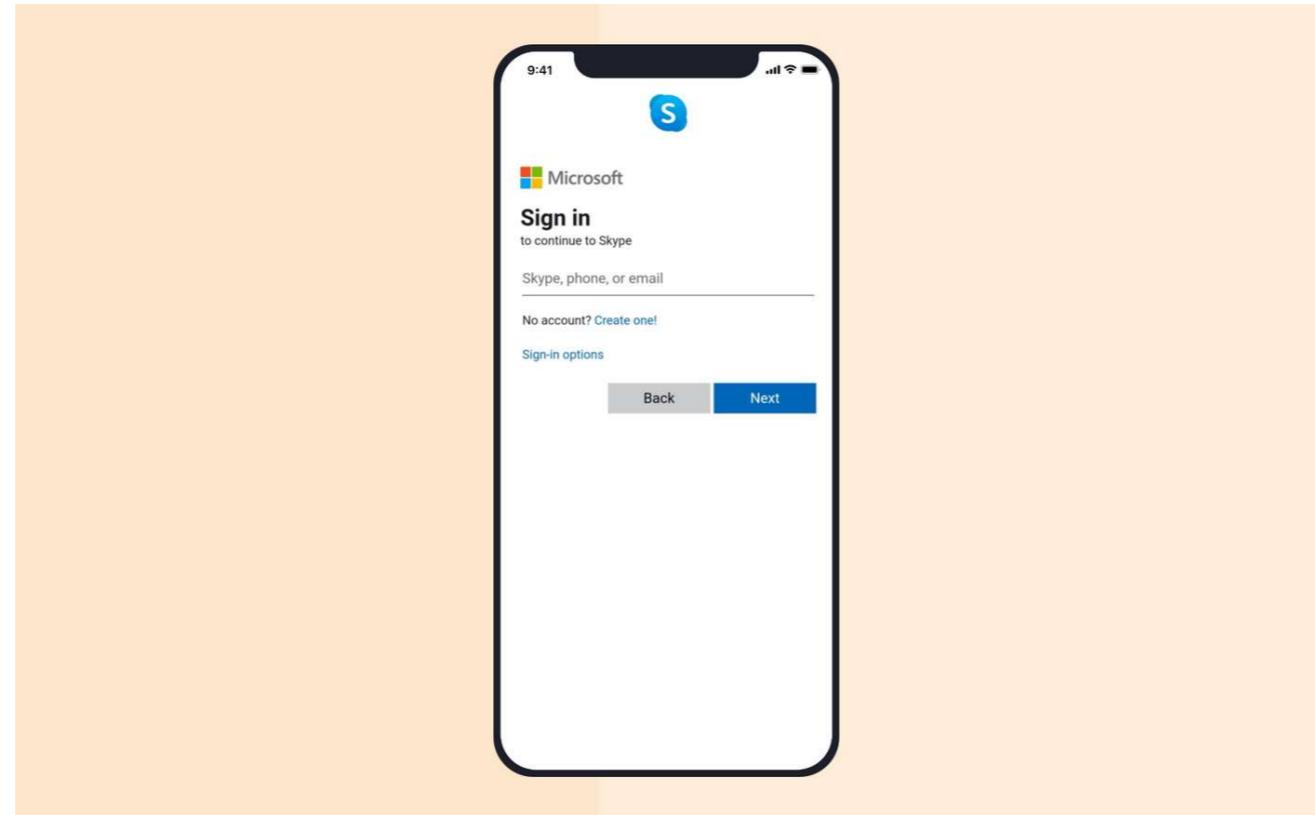
Vital features for video chat

Registration

The registration may be optional for users. For example, Zoom doesn't require you to register. You may write your name right before joining the conference. However, it'll be convenient for occasional users only.

Repeated name requests will irritate constant users. That's why it's obligatory to develop a registration feature for engaging user experience.

Also, registered users are more likely to enter your app again. Take care about logging in with third parties. **Facebook Login** and **Google Sign-In** will help you to implement this feature.



Skype sign in screen

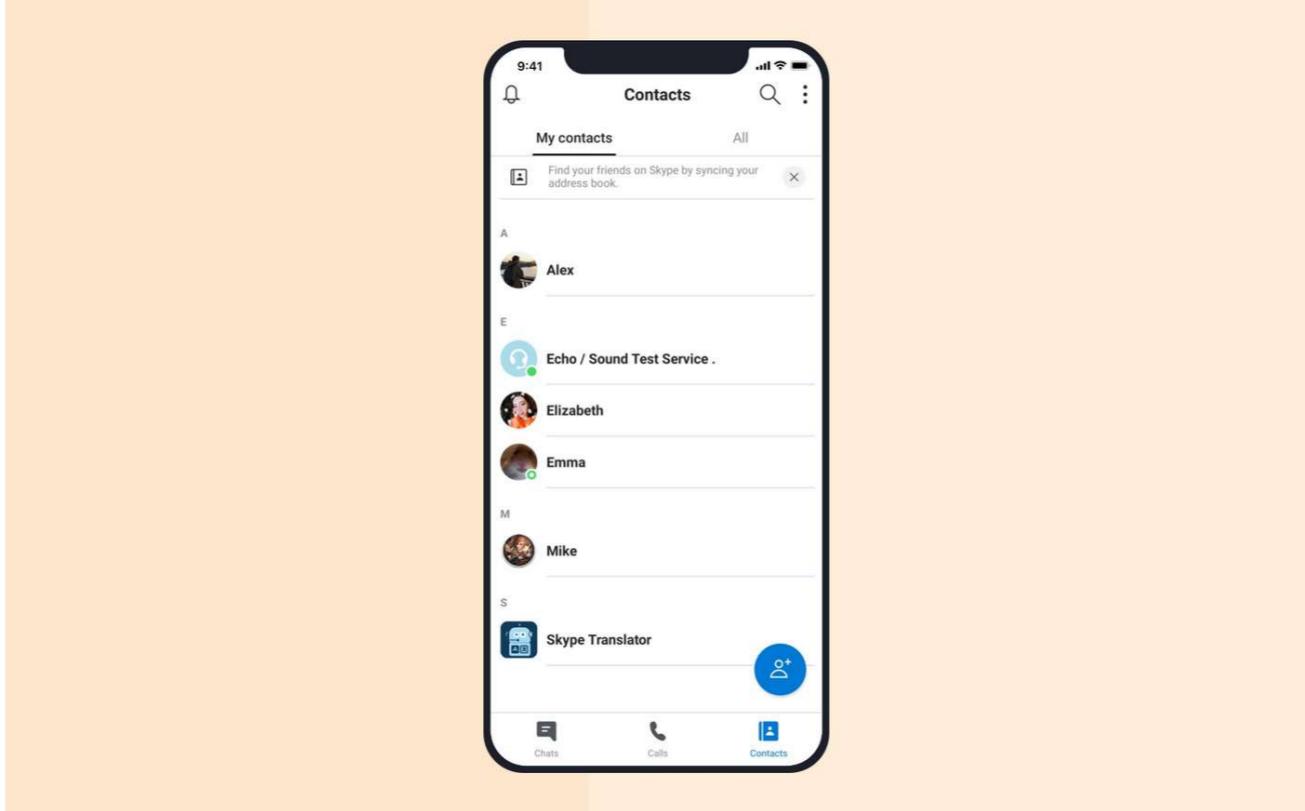
Profile Management

Registered users need to manage their personal data. Usually, it'll be names, e-mails, passwords, and so on. If your app offers paid subscription plans, you have to take care of payment details. Popular app market platforms won't let you use payment methods of your choice. Thus you have to integrate **in-app purchase tools** so that customers will pay with credit cards via the platform's payment system.

Contact List

Obviously, you can't build a video chat app without a contact list. There's a couple of components that form a contact list. The first one is the search engine. Users should be able to find other people in the vastness of your app. It would be great if they could search both by nickname and real name.

Another component is integration with the user's phonebook. You can fill a contact list automatically by searching similar phone numbers in your system. However, make sure to ask permission to access the phonebook before using the numbers. **Google Contacts API** is the easiest way to import existing contacts into your app.



Skype contact list screen

Video and Voice Calls

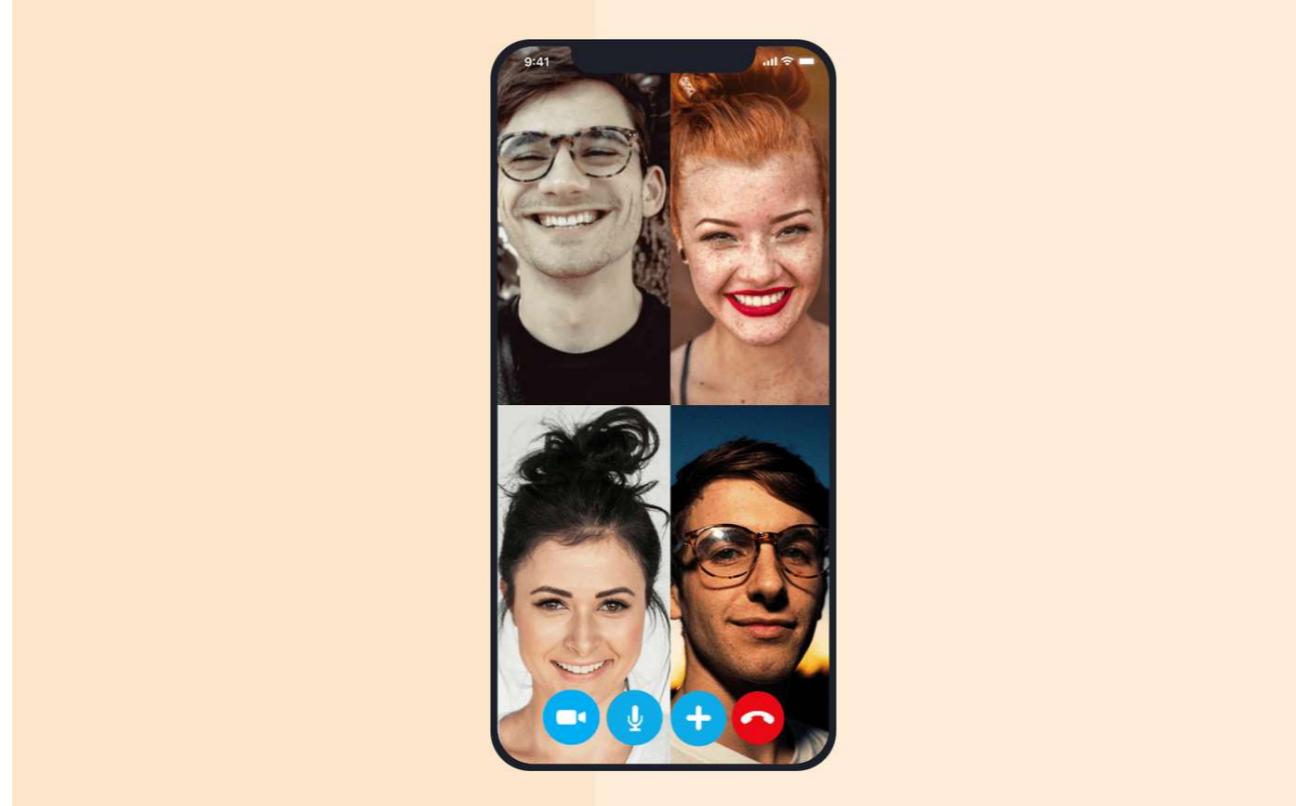
A chief ingredient in video chat app development. Apart from video calls, the app should have voice calls. Thus, users will be able to keep in touch with people abroad. Foreign calls are expensive in terms of internet traffic, so in-app voice calls are a cheaper alternative.

Obviously, the video should be transmitted in at least HD quality, and audio should be loud and clear. Of course, it's not entirely in your hands, and quality depends on the bandwidth. Still, your responsibility is to optimize the real-time connection as best as possible.

Group Calls

One-to-one calls are good, but not enough to be a self-sufficient product. Your users may want to organize group conferences, so let them do it. Depending on your audience, decide how many users per call should be supported.

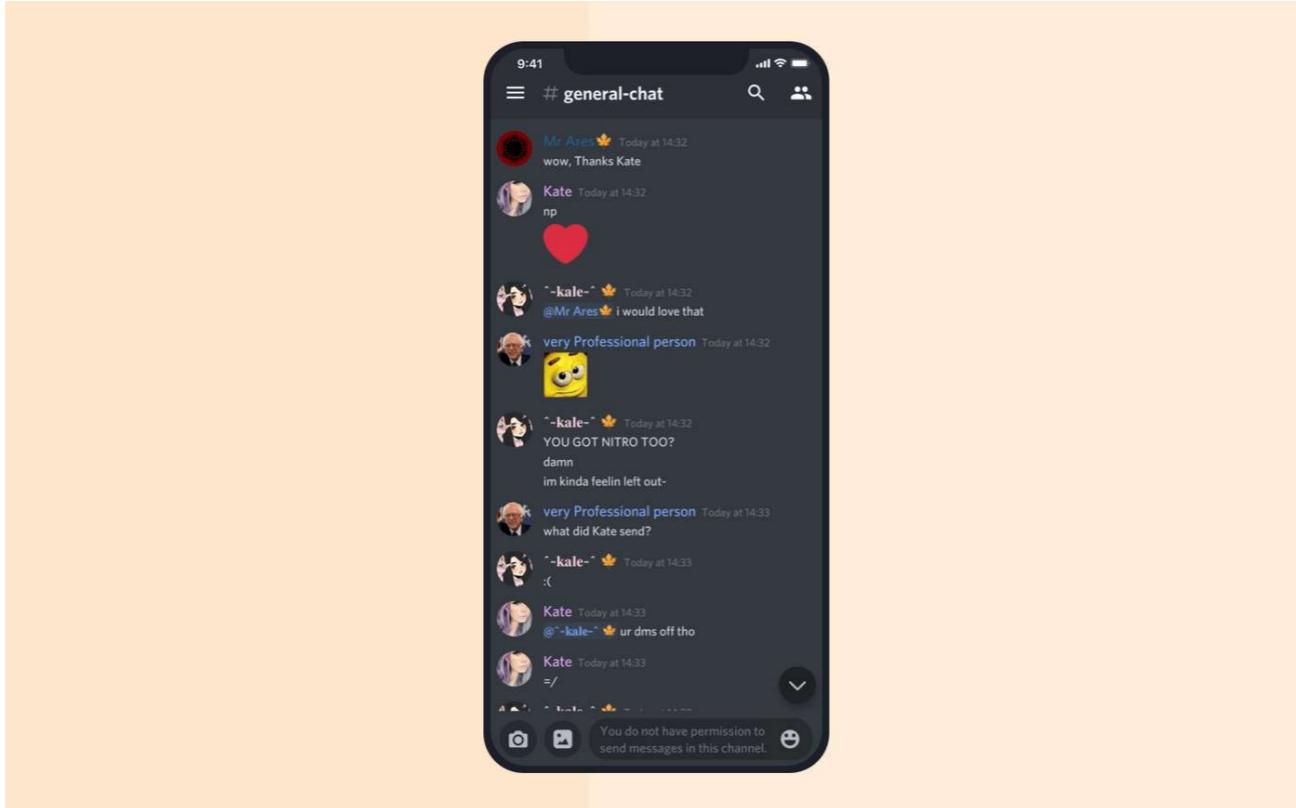
If you're aiming at businesses, support no less than 50 users. If your app is for everyday conversations with friends, 10 people per call will be enough. Develop some key features for conference hosts, like muting/unmuting users, inviting, and banning. But you have to mind an important thing. The more users you want to be in the conference the harder it will be to build a logic for the app. Thus, the cost of app development will increase.

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A 4-user group call

Text Chat

Sometimes, it's not an option to make a call. The user may be in an area with poor coverage, or simply on a meeting. Text chat comes in handy here. To create a video chat app with a text chat, you can use **Twilio**. This SDK contains primary instances needed for a chat, like users and messages. It's a cross-platform SDK, so it allows engineers to reduce development time.

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Discord channel chat screen

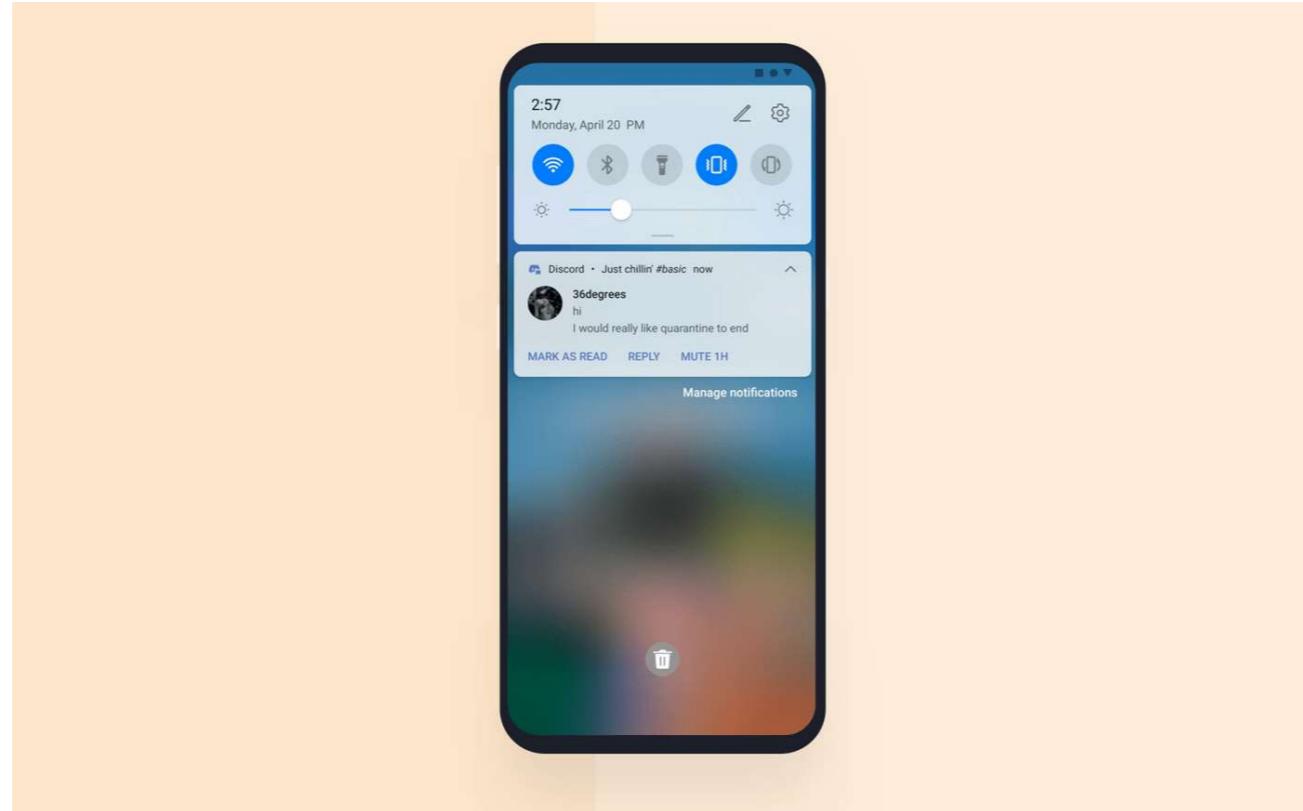
End-to-End Encryption

This is the type of encryption where devices of recipient and sender are a final transfer point. The message is encrypted on the sender's device and decrypted only on the recipient's device. Nobody can read this message when it's being sent. So, add this feature to ensure that all conversations will be confidential.

Protocols like **AES-256** and **HMAC-SHA256** will help you to make a video chat app secure. They split the data into 256 bits long blocks. Then these blocks are encrypted, transmitted to the destination point, and decrypted on the side of the recipient.

Push Notifications

A simple feature that solves a load of users' problems. The app will automatically notify users about new messages in the chat, missed calls, keep them informed about new updates, and more. Third-party tools like **Firebase Cloud Messaging** or **Apple Push Notification** service will help you improve user engagement with minimum efforts.



Push notifications by Discord

What's the Price for a Video Chat App?

Since you already know how to make a video chat app with MVP features, I'd like to show you the price for each of them.



Remember: this price is approximate, and may vary depending on your



requests! Total price is specified per one platform. Web backend is calculated only once.

Video chat app estimate

Feature	Approx development time(hours)	Approx cost (\$)
Authorization	37	\$1,850
Profile	31	\$1,550
Contact list	14	\$700
Audio calls	26	\$1,300
Video calls	29	\$1,450
Chat integration	102	\$5,100
Streaming protocols	14	\$700
Player Integration	33	\$1,650
Notification system	35	\$1,750
In-app purchases	10	\$500
End to end encryption	30	\$1,500
Screen sharing	22	\$1,100
Virtual background	70	\$3,500
Custom stickers	24	\$1,200
Custom masks	74	\$3,700

CLEVERROAD Feature	Approx development time(hours)	Approx cost (\$)
Design	80	\$4,000
Frameworks integration	22	\$1,100
Total	653	\$32,650
Web backend	315	\$15,750

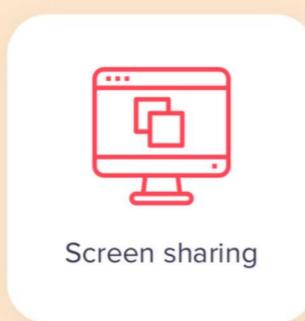
As you can see, the development per one platform requires 968 hours and \$48,400. However, the development process for the second platform will take 653 hours and \$32,650 because you already have a backend.

Video Chat App: Advanced Features

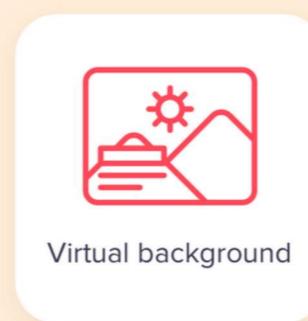
Features listed below are totally necessary to make a video chat app but aren't enough to build a product that stands out. Features covered in this section are the best bet for any video chat app.

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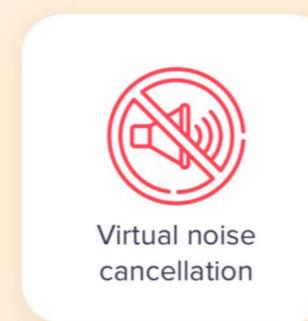
Video chat app advanced features



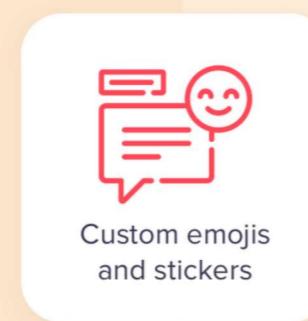
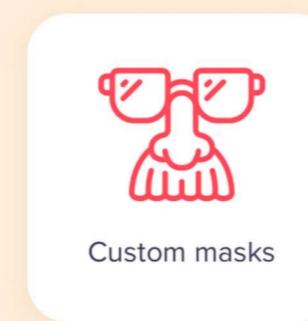
Screen sharing



Virtual background



Virtual noise cancellation

Custom emojis
and stickers

Custom masks

Top favorite advanced features of video chat app

Screen Sharing

This feature is a must-have for any online conferencing app. It's used to illustrate the contents of your screen without irritating anyone. Screen sharing is useful for tutorials, streaming games, or even watching movies together. It can be used both in business conferencing apps and in apps for everyday conversation. Screen sharing can be implemented into your app with the help of the **WebRTC** protocol.





Discover how **screen sharing became a basis** for a whole industry of gaming streams!

Virtual Background

A hilarious, practical, and simple feature in terms of video chat app development. Its purpose is to replace the user's background with a picture of their choice. Maybe they want to sit in front of the Eiffel Tower or somewhere underwater surrounded by fishes.

This feature works best with a green screen. Of course, it can also work without it, but some tracking issues are inevitable. For example, Zoom offers both of these options, and the outcome of the second one is pretty impressive. This feature may seem senseless, but it definitely has its benefits. It can hide the mess in users' rooms! Just let them put an attractive background image, and all the scattered clothes are hidden from others.

Virtual Noise Cancellation

Sometimes background noise is ruining the whole conversation. Someone watches TV loudly, or kids are playing in the backyard. Noise cancellation may come in handy in this case. With the help of deep learning algorithms, engineers can separate a user's voice from the background, and suppress the background sounds with white noise.

This approach is complicated and requires a lot of development time. But no need to worry, there are some turn-key solutions on the market. For example, **Krisp**, an AI that helps you to create a video chat app with noise

cancellation. It can be integrated into any conversational app on any **CLEVERROAD** platform. It cancels the noise on both sides of the conversation. A lot of famous apps trust this solution. For example, Discord recently integrated Krisp into their app.

Custom Emojis and Stickers

How to create a video chat app that is personalized for users? Let them create custom emojis and stickers. Sometimes default in-app stickers may seem boring, and users take matters in their own hands. It's a common practice among messengers and chatting apps. Users often have their local jokes, and they want to move them into chats. So, a custom sticker pack is a great chance to share their sense of humor with others.

Custom Masks

AR effects are a creative way to add some more individuality to your app. Masks were initially launched by Snapchat but then gained popularity in every app that uses a front camera. To get some more positive feedback from users, let them create their own masks.

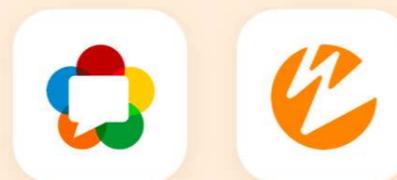
Let's explore the Instagram experience. At first, they had a team that worked specifically on filters and masks. Later these developers created software that allowed users to create their own filters and masks. The popularity of this feature is enormous. Soon, users developed so many masks that the team wasn't needed anymore. Thus, Instagram could satisfy customer needs and send developers to more important parts of the project.

Spark AR is a great solution that allows creating different AR objects, including facial masks.

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Technologies used for video chat advanced features

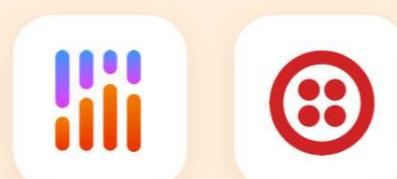
Screen sharing:



WebRTC
protocol

Wowza

Virtual noise
cancellation:



Krisp

Twilio

Custom Emojis
and stickers:



Photoshop

Sketch

Illustrator

Custom masks:



Spark AR

Apple ARKit

ARCore

Main tools for the development of advanced features

Video Chat App Technical Stack

How to create a video chat app? You have to decide on the tools you will be using during the development. There's a vast range of technologies used in mobile app development, but I've tried to outline the most important ones that are used to build a video chat app.

Remember: this tech stack is approximate and depends on the features you need. It's always better to discuss the tools with an experienced app development company.

Programming languages:

- Swift
- Kotlin
- Java

Frameworks:

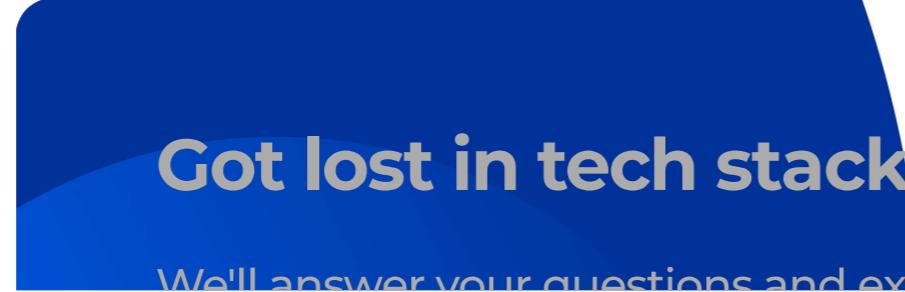
- Node.js
- Spark

Databases:

- MySQL
- Oracle

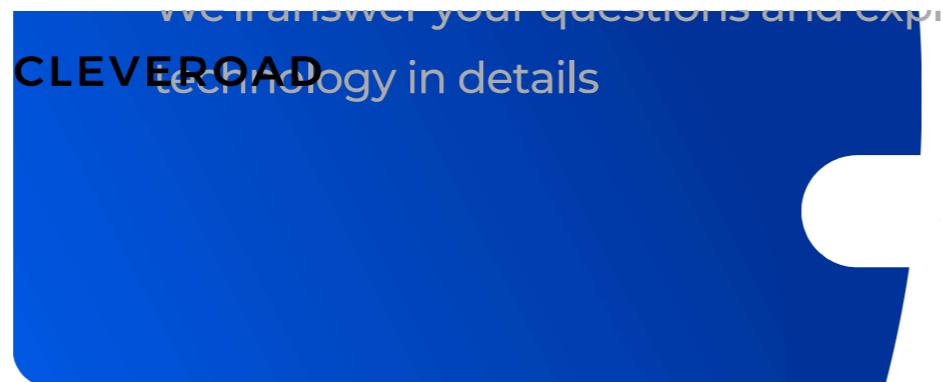
Cloud platforms:

- Amazon EC2
- Amazon S3



Got lost in tech stack?

We'll answer your questions and explain every



Streaming protocols:

- WebRTC
- RTP
- RTMP

Encryption protocols:

- AES-256
- HMAC-SHA256

API & SDK:

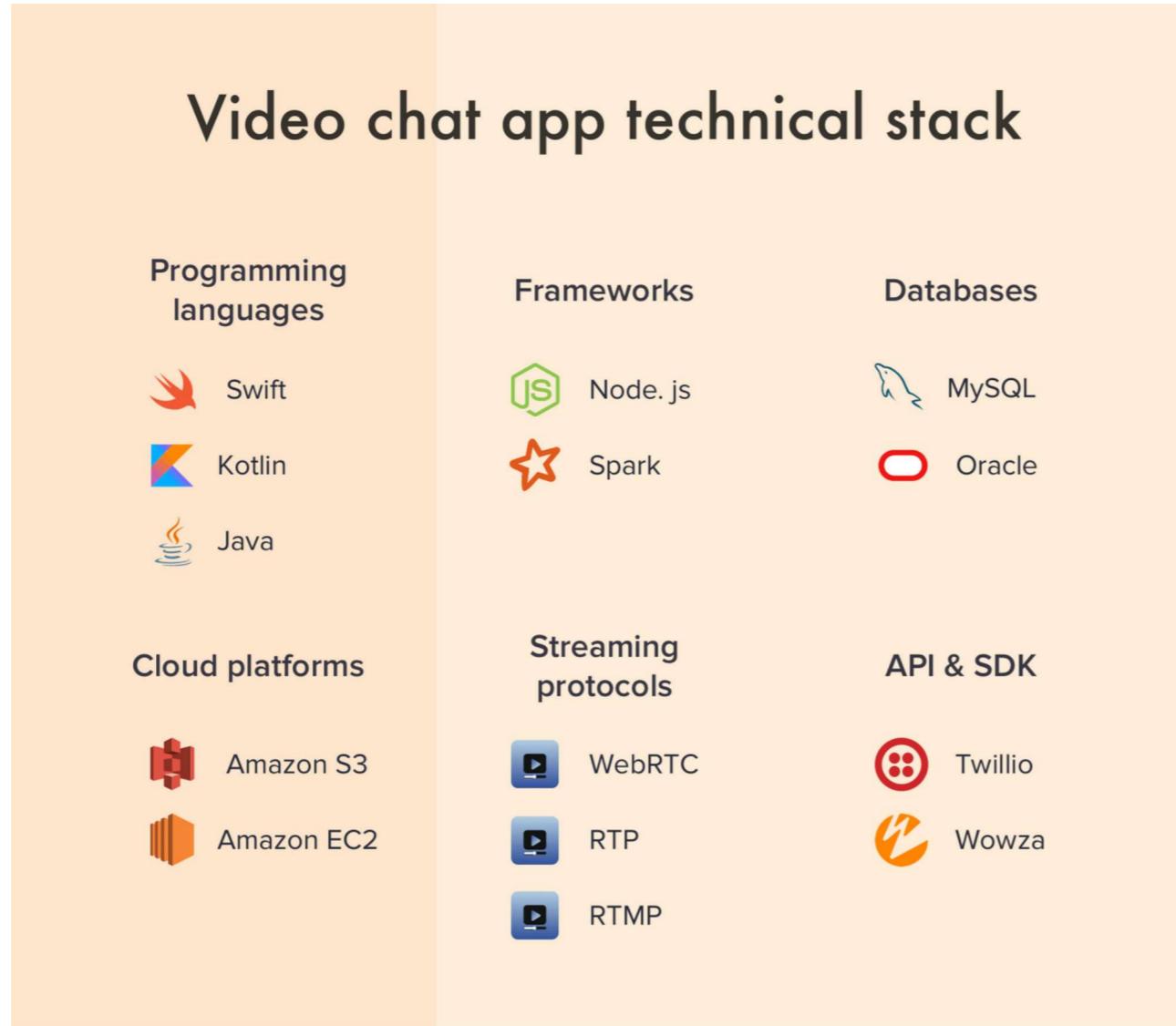
- Twilio

SaaS solutions:

- Krisp
- PubNub
- OpenTokRTC

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Video chat app technical stack



Technologies that are used in the majority of video chat apps

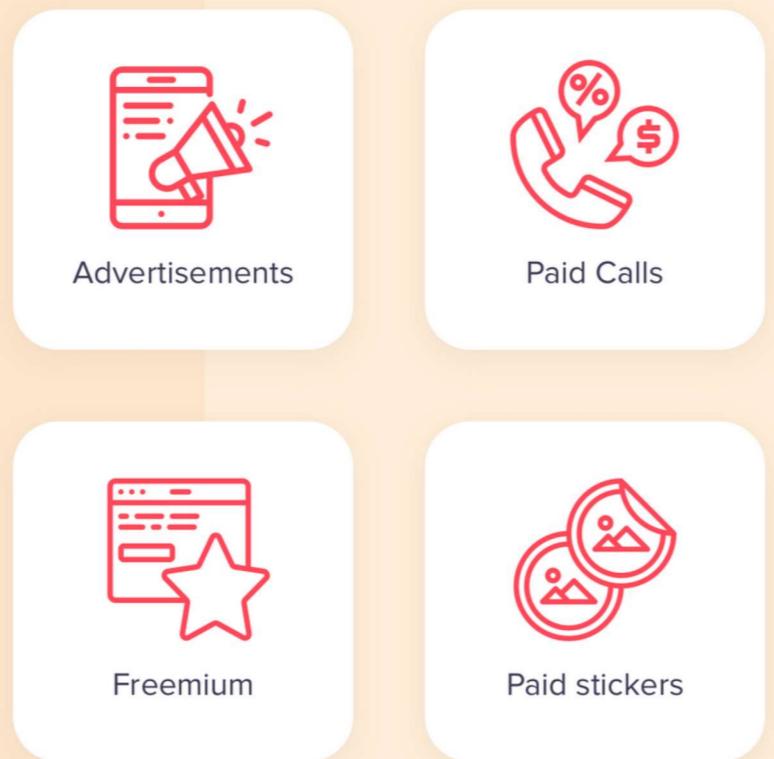
Video Chat App Monetization Strategies

One of the most important questions — how to build a video chat app that earns money? Investors love products that already generate income, while you'll need funds to continue with product development.

There are four main ways to make your app earn money. Let's go through all of them.

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Video chat app monetization strategies



Four ways to earn revenue of video chat app

Advertisements

This one is a kind of secondary option for a video chat app. The reason is that advertisements suit more to video streaming apps, because commercials can be integrated right in the middle of the video. In the case of video chat app development, you can't integrate the ads during the call.

Instead, you can display small promotional banners during the whole conversation. Also, you can place unskippable ads at the end of the call, but that can be annoying, so don't overuse it. The income of the listed options

is not that high compared to video streaming services, but it still has the right to live.

Paid Calls

Have you ever been in a situation when you urgently need to phone someone via cell phone? Users can't always stay online, but they always carry their phones. While building a video chat app, you can let users make mobile calls with your app.

It has a sense for users who have to keep in touch with foreigners. A common call often costs more than a call via the app, and this fact attracts users. We can take Skype as an example. It provides specific call rates for every country that are fairly cheaper than roaming.

Freemium

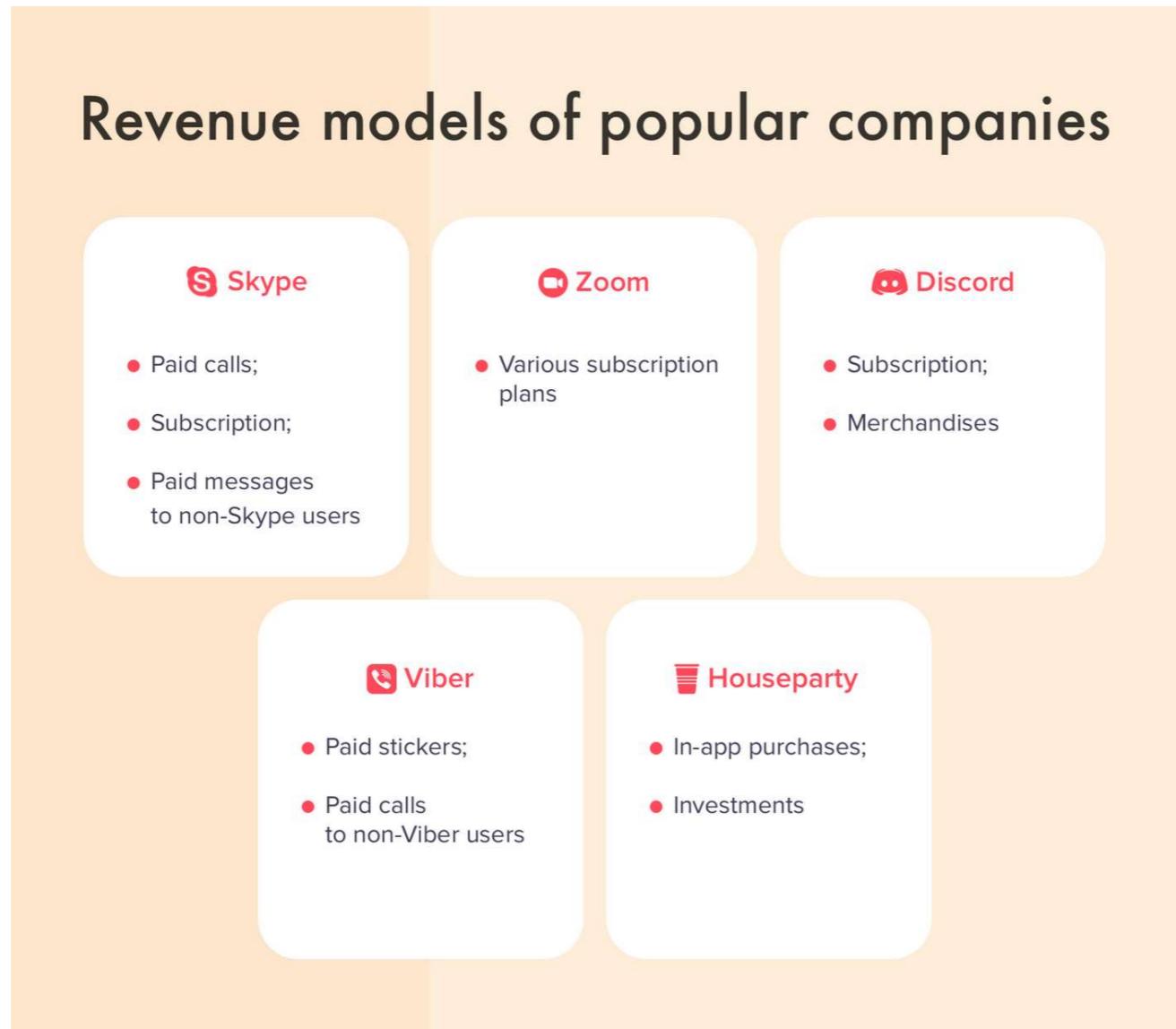
It's obvious that basic features like video calls should be free. However, you can set some limitations on time or number of participants.

For example, Zoom provides free conferences up to 40 minutes long and 100 participants. If users need longer conferences, they have to pay **\$14,99/month** to get 24 hours long conversation. The plan that costs **\$19,99/month** increases the simultaneous amount of users up to 300.

Paid Stickers

How to develop a video chat app feature that gets revenue and entertains users? Create paid stickers.

Everyone likes funny and creative stickers. So, hire additional designers that will focus on this task. Users will be glad to pay a reasonable sum for quality stickers with a good idea.

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Monetization strategies that well-known video chat apps use

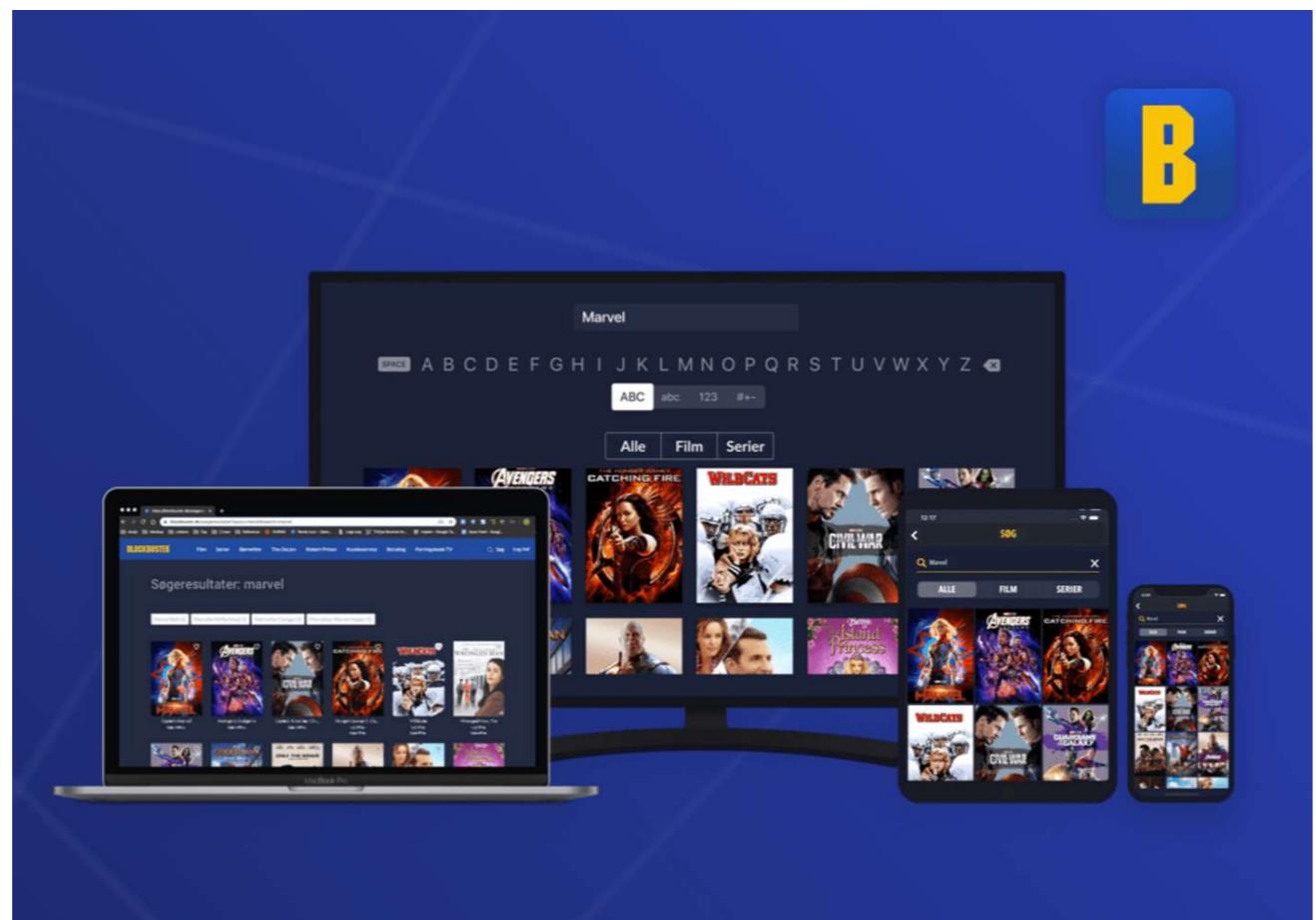
Our Expertise

Our software development team has considerable experience with streaming applications.

We've recently updated Blockbuster — a video streaming app.

Blockbuster was an iconic video and gaming rental company in the US. Some time later, a top-tier Danish provider purchased its brand rights and

launched a streaming platform for Nordic countries. We were updating the **CLEVERROAD** mobile version of Blockbuster on both platforms.



Blockbuster video streaming app

During the development, we used the following technologies:

- **Mobile/Tablet:** Kotlin for Android and Swift for iOS development
- **Authorization:** Facebook Login
- **TV streaming:** Google Cast SDK
- **Video analytics:** Youbora
- **Libraries for Amazon Web Services:** Apollo, CloudFront, Lambda, Elastic Beanstalk, GraphQL, AWSAppSync

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Frequently Asked Questions

What are the basic features of a video chat app?

How to make a video chat app?

How to make video chat app on Android?

What is the technology used to build video chat apps?

How to make a video chat app for iOS?

How do you start a video chatting app from scratch?

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thank you. very nice is this then information

N

Nejas

10.08.2020 at 10:10

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Awesome and Amazing effort. A-Z information. Thanks a lot.



Oleksandr Sh.

12.08.2020 at 10:40

Thanks! Appreciate your feedback!

KA

Khurram Abbas

21.08.2020 at 11:12

[Reply →](#)

Thank you very much for providing the complete information on video call app development process and cost. Keep it up good work. Thanks & Best Regards,

S

SNO-coder

05.10.2020 at 09:32

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Wow I learnt a lot, thanks!

E

Elizabeth

23.12.2020 at 09:03

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Our clients say

"Your team is skilled and dedicated to the end-user experience and that showed in the final product.

Absolutely looking forward to working with the team in the future."



Yeremia Nakhaima

About project
CLEVEROAD

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Co-Founder of
GreenLight

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