

## Competitive Analysis

### Group 4

The first step in the analysis was to identify the different types of categories of applications which people made use to share their files.

These were broadly divided into three categories:

- 1)Dedicated file sharing apps
- 2)Cloud Storage applications
- 3)Social Media/Instant Messaging apps

<i>Dedicated File Sharing Apps/Web Apps</i>	<i>Cloud Storage</i>	<i>Social Media/Instant Messaging Apps</i>
Send Anywhere	Onedrive	Discord
Airdrop	Google Drive	Signal
LocalSend	Proton Drive	Instagram
Easyupload.io	MEGA	Facebook
Gofiles	Filen	WhatsApp
Wormhole	Dropbox	Snapchat
		Telegram

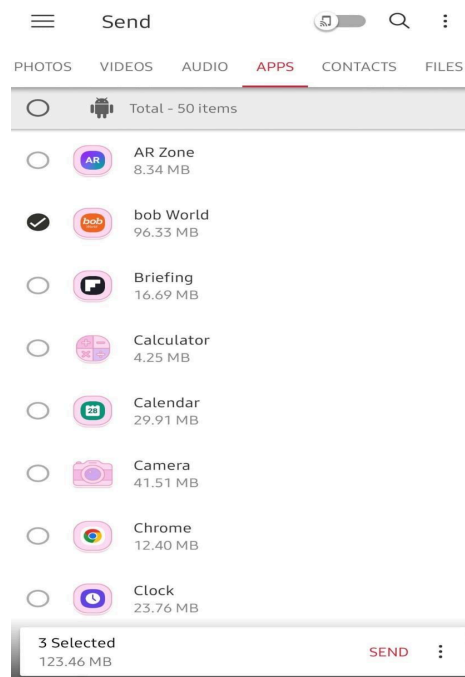
**The detailed analysis for each application is as follows:**

## Dedicated file sharing applications

### 1. Send Anywhere

#### Pros

- This can be used to transfer files between devices running on different platforms.
- It can also directly send files up-to 10GB in size.
- If send anywhere is used on an Android device, a link can be generated directly from any messaging application referred to as “Quick Link Share”.



*Fig 1: Send Anywhere allows the user to send multiple forms of attachments at the same time.*

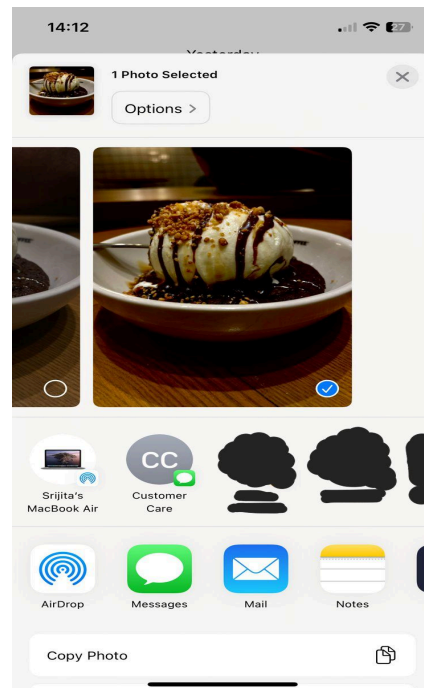
#### Cons

- Files shared using Send Anywhere are stored temporarily so if the recipient doesn't download the file within a certain timeframe, it may get deleted.
- Send Anywhere relies on an internet connection for file sharing. Offline sharing is limited to devices connected to the same local Wi-Fi network.
- Send Anywhere primarily focuses on file transfer. If one requires robust collaboration features, such as real-time editing or commenting on documents, they may need to use additional tools.

#### Comparison with Quick Share

Send anywhere also allows sharing of files through a 6 digit code if the recipient also has the send anywhere application installed while Quick Share allows sharing only through links/nearby devices.

## 2. Airdrop



*Fig 2 : Airdrop allows a seamless share within the Apple ecosystem, such as iPhone and Macbook Air.*

### Pros

- There is no limit to file size, and the speed of transfer is dependent on the respective individual hardware of the device
- AirDrop uses end-to-end encryption, so there's no way for Apple to decrypt the content of the material; it's secure
- Easily transfers files on Apple watch as well
- Doesn't need an internet connection; works well if bluetooth and WiFi are turned ON
- By default, AirDrop is set to share with Contacts Only.
- An easy and quick share option between apple devices - for example - to open up a webpage on a larger screen such as an iPad or MAC can be done quickly
- Allows multiple file sharing to multiple people

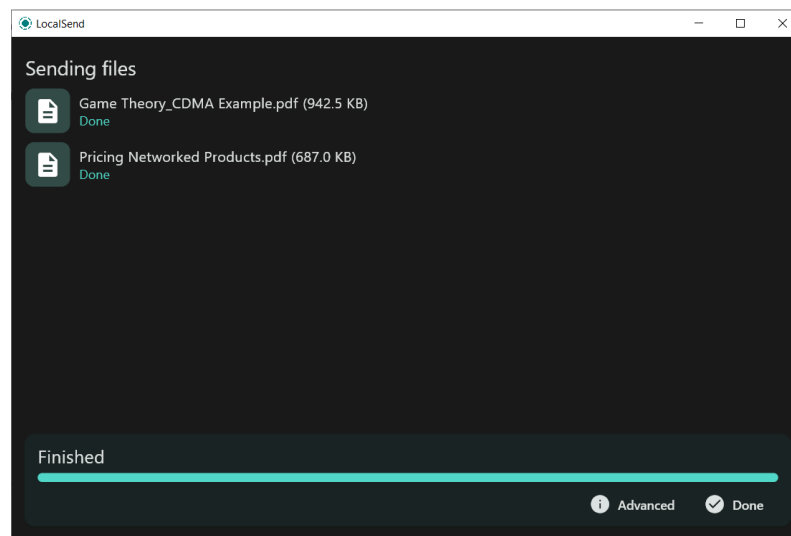
### Cons

- Applicable only in the Apple ecosystem
- Works only for nearby devices, within a 30-foot range.

### Comparison with QuickShare

Since Airdrop is not a universal sharing solution, QuickShare merge with Google's Nearby Share is a step towards that direction barring the Apple devices which is a plus. Another huge bonus for QuickShare is that one can send as a link and the other person can download the file from temporary cloud storage. The recipient doesn't need to even know what QuickShare is.

### 3. LocalSend



*Fig 3: File Sharing through LocalSend*

#### Pros

- The files can be encrypted when sharing
- It doesn't require an internet connection or third-party servers
- A sender can single/multiple files to multiple recipients at the same time
- If the recipient does not have the app installed, the sender can send a link and then approve the request, allowing secure transfer.
- The sender can also send a QR code (to allow to open the link) to receive the files
- When sharing through an Android device, it allows the sharing of APKs of installed applications, enabling easy transfer of apps between devices

#### Cons

- It would be helpful to send a password-protected file while transferring a file.

#### Comparison with QuickShare

It would be helpful if QuickShare also would allow sending files to multiple recipients at the same time. QuickShare also does not allow the native transfer of applications by selecting them and allows only after an APK for the app has been created by the user which is possible with LocalSend.

## 4. EasyUpload.io

### Pros

- Any file can be uploaded upto 10 GB without any restriction or necessarily registering.
- Uploaded files can be password protected to keep them secure. With access control only people you want can download the files.
- With the expire duration option, you can set your files to expire after some amount of time.
- The sender can also keep a track of the no of file downloads through the shared link



The screenshot shows the EasyUpload.io web interface. At the top, there is a 'Show' dropdown menu set to '25' and a search bar. Below this is a table with columns: Name, Size, Expires At, Password, Link, Uploaded At, and Download Count. Two files are listed: 'zihowRYM\_400x400-2(2).jpg' and 'zihowRYM\_400x400(1).jpg', both 0.02 MB in size and expiring on 2024-02-21 at 12:13:54. The first file has a password '2lcoa6' and a link 'yvrnd75'. The second file has a password 'yvrnd75' and a link '2lcoa6'. Both files have a download count of 0. At the bottom right, there are 'Previous', '1', and 'Next' buttons.

↑	Name	Size	Expires At	Password	Link	Uploaded At	Download Count
file	zihowRYM_400x400-2(2).jpg	0.02 MB	2024-02-21 12:13:54		2lcoa6	2024-01-22 12:13:54	0
file	zihowRYM_400x400(1).jpg	0.02 MB	2024-02-21 12:13:54		yvrnd75	2024-01-22 12:13:54	0

**Fig 4:** File sharing through easy upload

### Cons

- A user can upload files upto 10 GB as a free user but your files can be stored for the maximum duration of 30 days. They need to buy the premium account to increase file size and storage upto 500GB and can then store them permanently.
- An internet connection is required to access the files

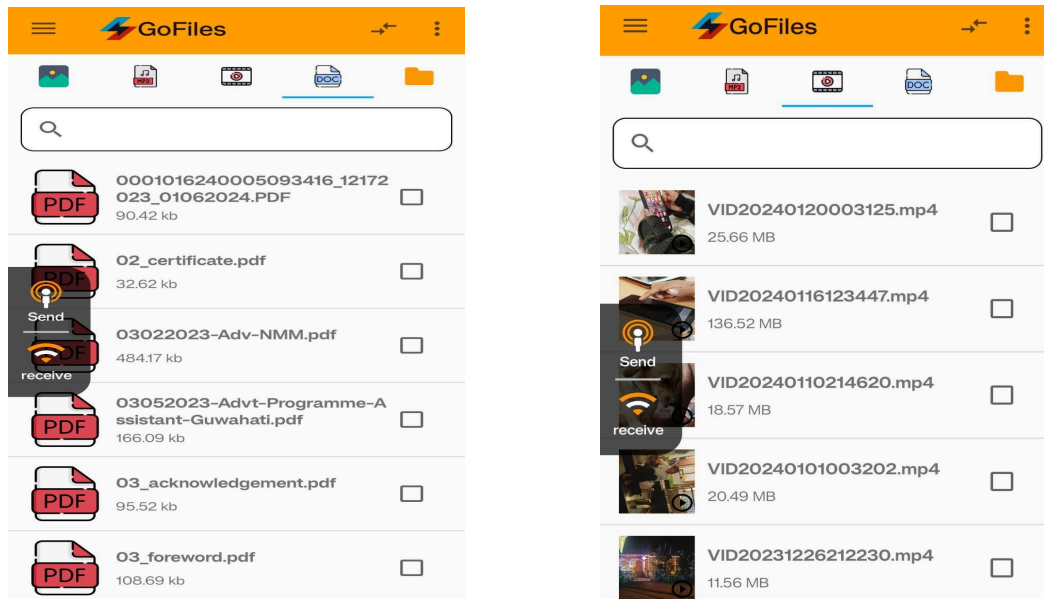
## Comparison with Quick Share

Easy upload offers storage upto 1TB for the shared links(through a premium plan) to store it on their servers forever while links shared through QuickShare expire after 7 days. Easyupload also is focussed on link based sharing and does not offer sharing through the local network compared to QuickShare.

## 5. GoFiles

### Pros

- It is a very lightweight application
- Contains icons of different forms of files on the phone - photos, doc, videos and internal/downloaded files, makes it easier to use
- Allows import or export of data between smartphone and the connected PC and works both on Android and iOS
- Data is encrypted in transit



**Fig 5 and 6 :** With clear Send/Receive options along with separate symbols for different forms of files,

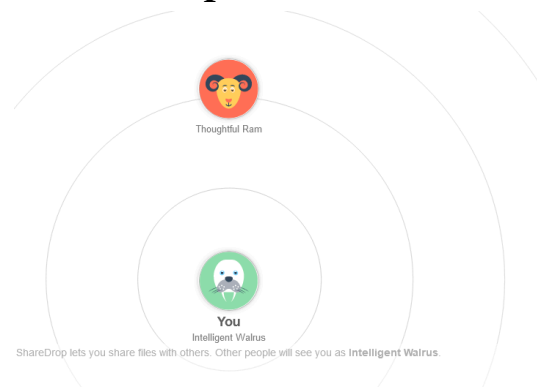
## Cons

It Does not support bin and exe files

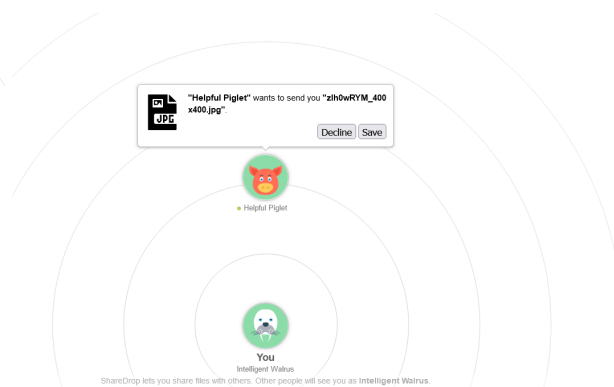
## Comparison with Quickshare:

GoFiles is compatible with both Apple and Android devices and that gives the app an advantage over Quickshare(for Nearby device sharing). The app also allows a lock feature for all the files uploaded onto their servers as well as an app lock on the device granting increased security as opposed to Quickshare that allows only password protected files.

## 6. Sharedrop



**Fig 7 :** Finding Nearby devices through Sharedrop



**Fig 8:**Sharing files through Sharedrop

## Pros

- It allows you to send files to other devices in the same local network and between networks as well
- The user can either open the URL if they are on the same network to see each other's avatars and send files or send them A room URL or a QR code to allow transfer between both the users.
- It allows users to send files instantly without the need of any app installation

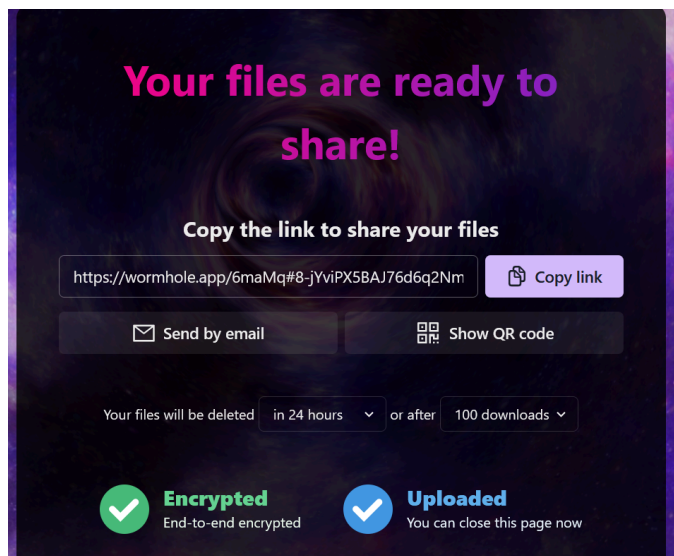
## Cons

- It requires an internet connection to discover other devices.
- There are no options to have a password -protected file while transferring a file.

## Comparison with QuickShare

QuickShare does not necessarily need the internet to transfer files but it is not compatible with all devices(as of 21 January 2024) which could restrict the use of it.

## 7. Wormhole



*Fig 9: Shared link through Wormhole*

## Pros

- The data is encrypted during the file transfer.
- The user can also set the time or set the number of times the file can be downloaded before its expiry.
- The user can also share a QR code of the link to another person
- The user can also send up to 10 GB of files in a single instance.
- It also supports instant file streaming and the recipient can start downloading before the files have finished uploading.

## Cons

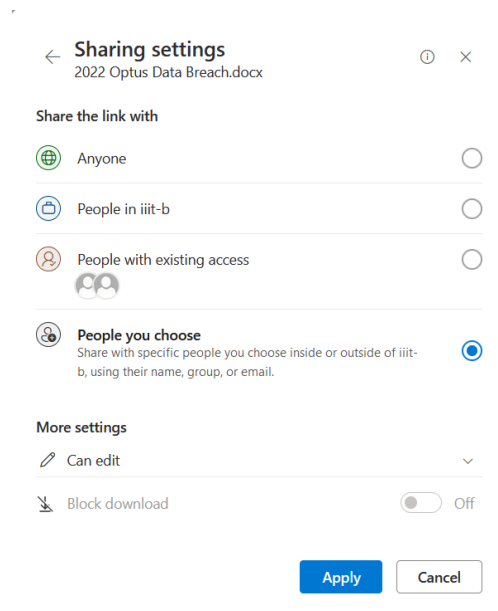
The user needs an internet connection to access the link.

## Comparison with QuickShare

QuickShare sets the default expiry to 2 days but the user can customise the setting to set the expiry time. In QuickShare, the user cannot set expiry “after (n) downloads” With QR codes and links in QuickShare, there is a size limitation of 3GB per file and 5GB per day that can be transferred.

# Cloud Storage apps

## 8. OneDrive



*Fig 10: Shared Access options in OneDrive*

## Pros

- It mainly allows the user to share a link with another user to view the files
- The application allows the user with several access features to select from  
If the account is a part of an organisation, it allows easy access to the people of the entire organisation.
- The application also allows the user to block the download of the file/folder
- The application also allows the user to select the pertinent modification access. It allows the user select from the following 1)Can edit 2)Can review 3)Can view

## Cons

- It allows only 5 GB of free storage



- It does not allow executable (EXE) files to be shared.

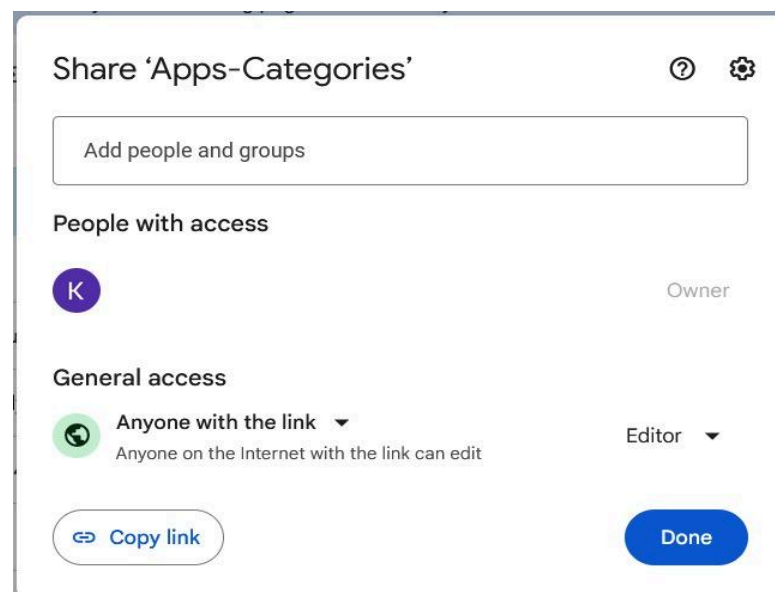
### Comparison with QuickShare

Onedrive allows the user to open and modify files directly through the web browser as it is a part of the Microsoft suite of applications allowing instant access to the files in comparison to QuickShare. It also allows the user to block downloads and manage modification access to the files.

## 9. Google Drive

### Pros

- Offline access can be enabled to specific files allowing to view and edit documents without an internet connection.
- Users can set access permissions, share files securely.



*Fig 11: Sharing and managing access of files through Google Drive.*

### Cons

- While Google Drive provides 15 GB of free storage, this may be insufficient for users with large files or extensive storage needs. Additional storage requires a subscription and comes with associated costs.
- While Google Drive offers offline access, users need to set up offline access for specific files or folders in advance.

## Comparison with Quick share

As Google offers a wide range of other services as well it is possible to easily open and edit the shared files in comparison to Quick- Share. Google Drive provides detailed access controls, allowing users to set permissions for viewing, editing or commenting on shared files. Access control settings can be implemented in Quick Share for enhanced file security. It also maintains a version history for files, allowing users to revert to previous versions if needed, QuickShare just allows users to view link sharing history.

## 10. Proton Drive

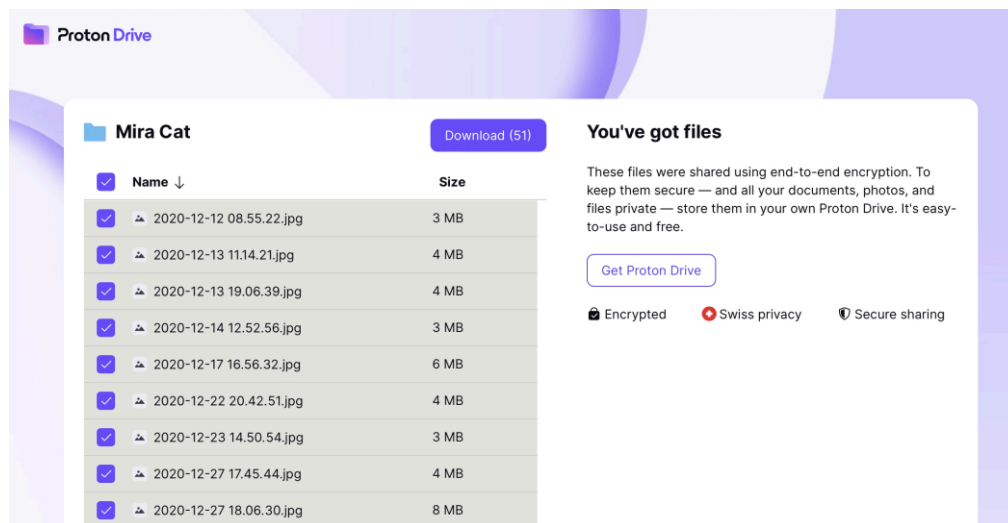


Fig 12 :A snapshot of proton drive web app [\[Source\]](#)

### Pros

- It uses zero-knowledge encryption.
- Proton operates its own encrypted data centres in Switzerland, renowned for its strict data privacy laws.
- We can share files and folders from Proton Drive with anyone using secure shareable links. These links are generated locally in our browser, so Proton never has access to our files or folders.

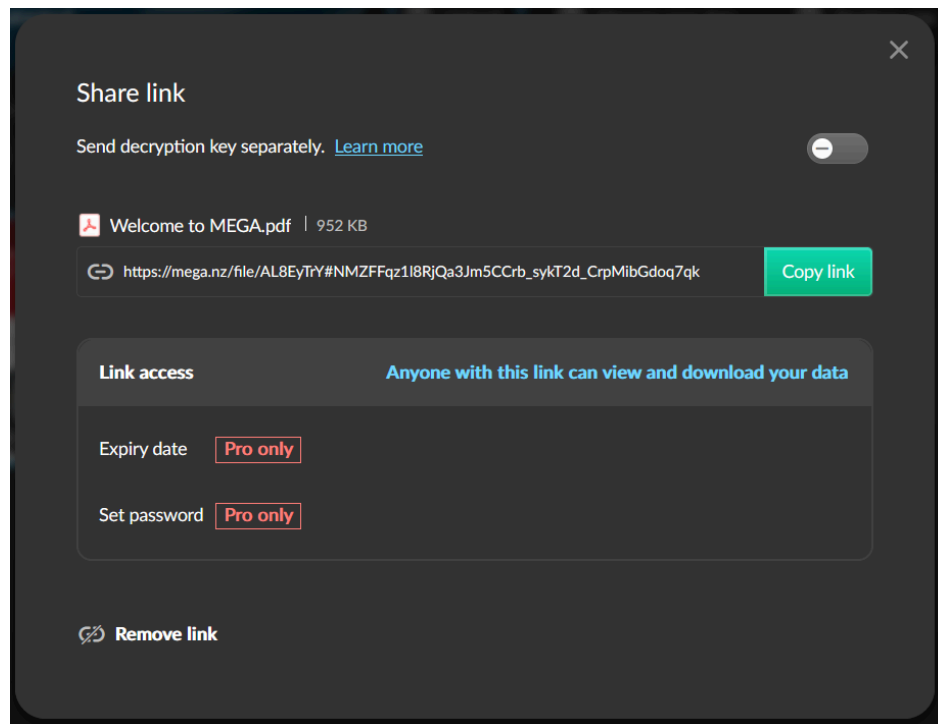
### Cons

- Free plan offers only 1 GB, with paid plans reaching up to 2 TB.
- Focuses on secure storage rather than real-time document collaboration.

## Comparisons with QuickShare

Proton Drive has a limited storage capacity limiting the number of files a user can send through their storage in comparison to QuickShare which is focussed primarily only on file-sharing.

## 11. Mega



*Fig 13: File sharing through Mega*

### Pros

- We can generate encrypted links to share files or folders with both MEGA users and non-users.
- MEGA retains previous versions of files, allowing us to revert to older versions if needed.
- Access previous versions through the web interface or mobile app.
- Users can send a separate decryption key to allow for secure sharing of files.

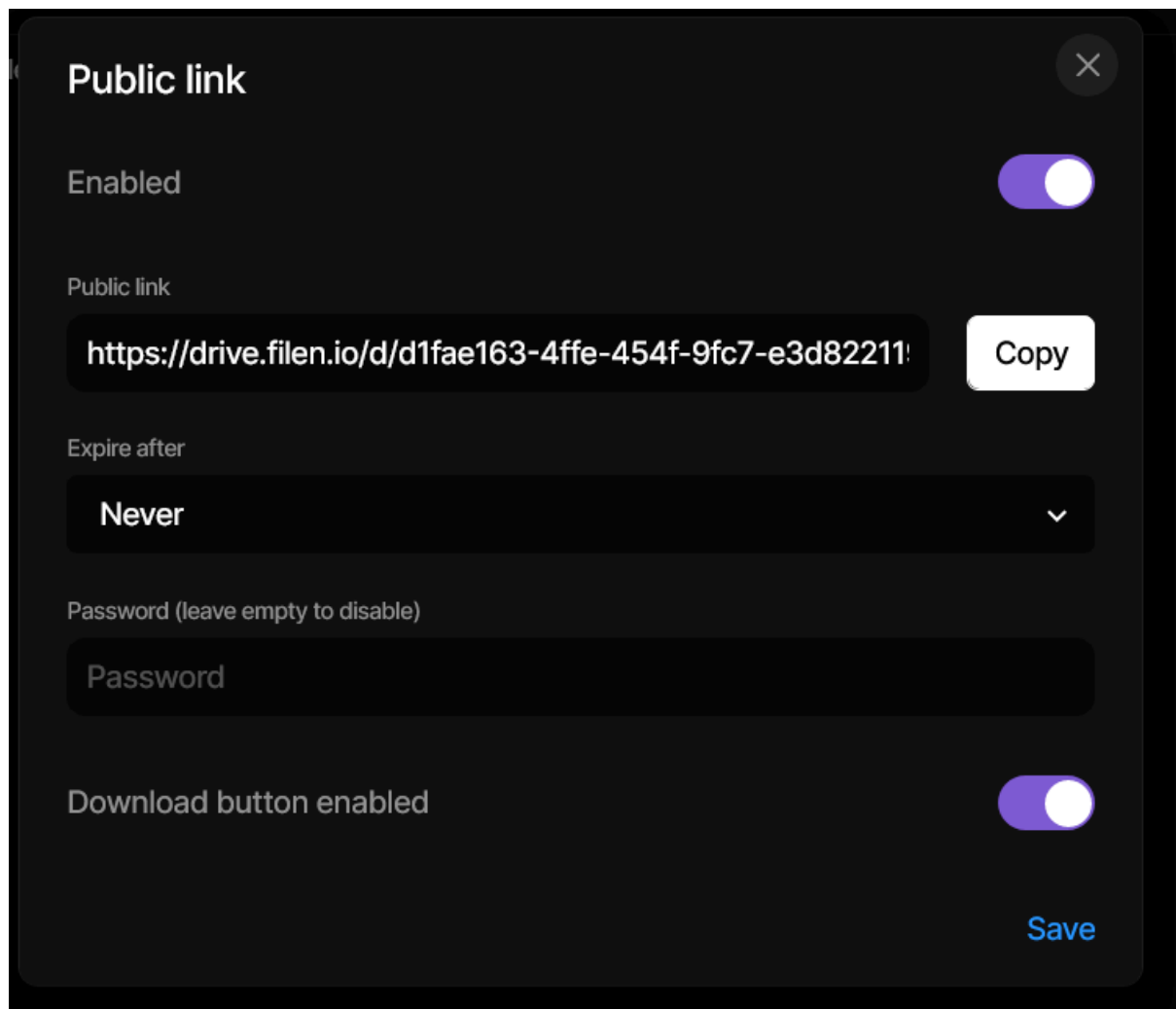
### Cons

- User get only 20gb of free space
- The password protection and expiry date features are locked behind a premium plan.

### Comparison with QuickShare

QuickShare is budget-friendly with generous free plan, good security features, lacks advanced collaboration tools. Mega focuses on privacy and security, massive free storage, pricey paid plans, excellent encryption but clunky interface.

## 12. Filen



*Fig 14 : Link sharing and options available through Filen*

### Pros

- The user can upload a file/folder to the cloud storage
- The user can share a public link to anyone by copying it.
- The user can choose from a set of “expiry” options to set the expiry of the file/folder
- The user can also restrict the downloading of the file/folder by a recipient.
- The user can also set a password to protect the file/folder

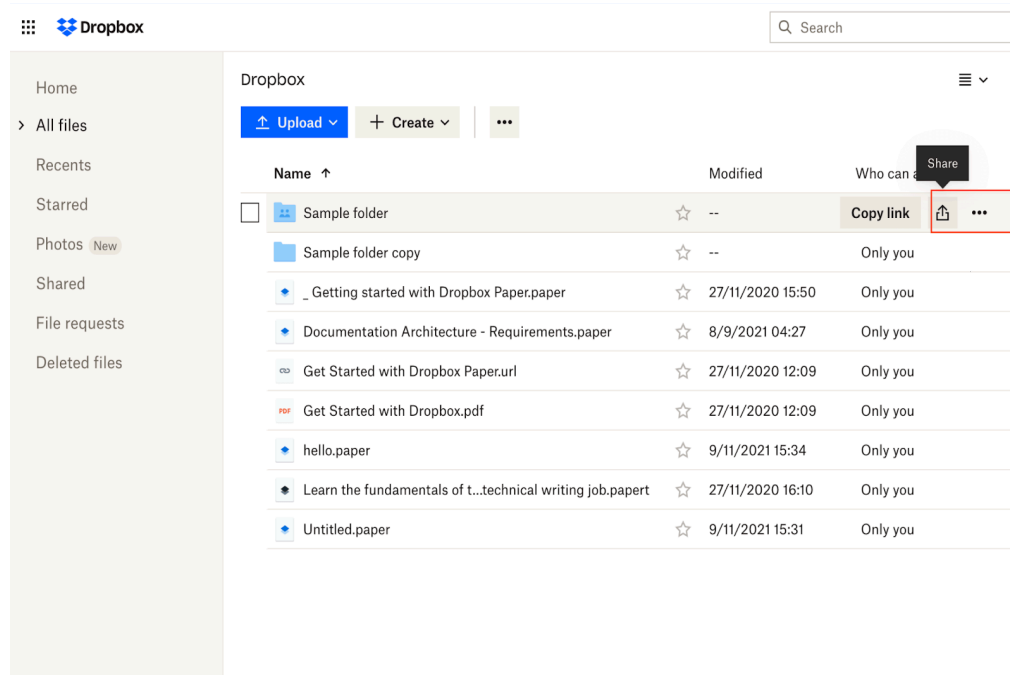
### Cons

- There are only a limited number of options for the “expiry” option and the sender cannot set a custom “expiry” time.
- There are no options to set the access for modification (for example if the user wants to edit the folder and upload a file to the link)

## Comparison with QuickShare

QuickShare being a dedicated sharing platform provides more options than Filen. It also provides ease of access for the user to send the files from their device through the QR codes/selecting a contact which is not seen in Filen.

## 13. Dropbox



**Fig 15:** Dropbox allows 'specific file sharing' which allows to share specific sub-folders[Source]

### Pros

- Dropbox has features that enable collaboration such as the ability to create Microsoft Office or Google Docs/Sheets/Slides files from within Dropbox and a new shared Spaces interface for group collaborations
- It enables real time monitoring of changes made on the files shared; and this is automatically updated and synced for all recipients.
- Can share files with emailed links or URLs, while also choosing between read-only and editing permissions for recipients.
- File organisation is easier to do on Dropbox
- Shareable links support password protection and expiration dates.
- Dropbox also offers LAN sync, that is, for multiple computers connected to a single network, Dropbox will sync files directly between them.

### Cons

- Makes paid subscription necessary, free storage only upto 2 GB and comparatively expensive paid subscriptions
- Most useful features such as offline usage, digital signatures, smart syncing is all available only for premium subscribers

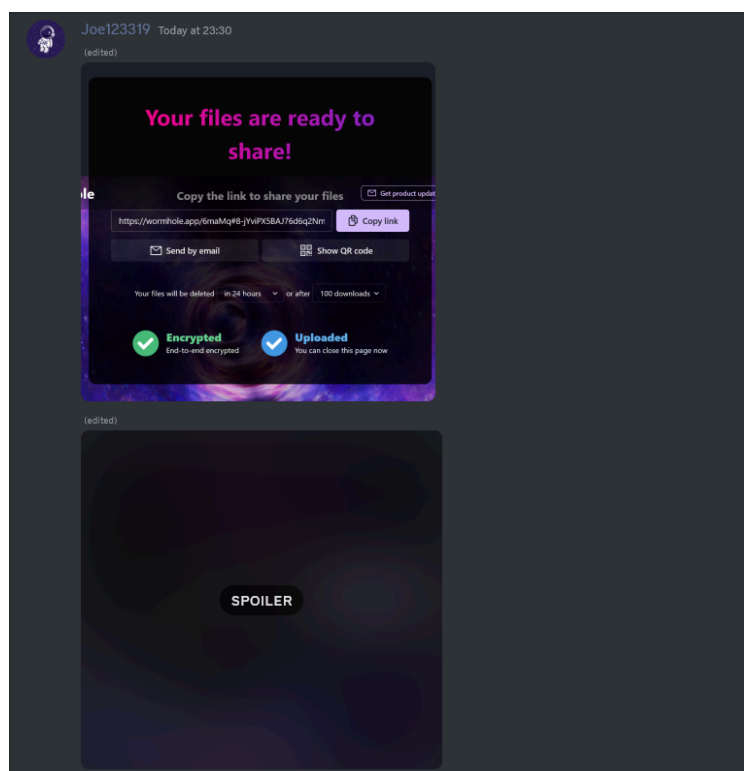
- It only uses the highest level of 256-bit AES encryption for stored files. File transfers employ standard SSL/TLS security which, while effective, doesn't provide the same standard of elite encryption offered by 256-bit AES.

### Comparison with QuickShare:

Dropbox is a cloud storage app with several different functionalities for collaborative work allowing seamless integration with other applications but certain features are paid. QuickShare on the other hand allows for instant transfer between devices without any additional cost.

## Social Media/Instant Messaging Apps

### 14. Discord



*Fig 16: Sharing images through Discord*

### Pros

- If the sender wants to send a file to multiple recipients and are a part of a single group(server/guild),Discord allows easy sharing of files.
- The user can also set the files as spoilers (and hide it) .The sender write the alternative text for the shared image.
- Discord also does not have time limits on editing a message which allows the modification of any file sent by the user.
- The user can also delete the file at any period of time.

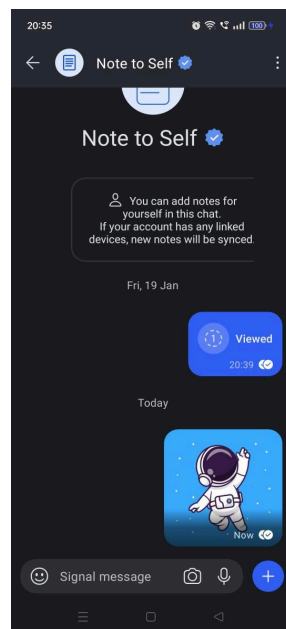
## Cons

The file size limit for free users is 25 MB. For Nitro Basic subscribers, the file size limit is 50 MB and for Nitro subscribers, it is 500 MB.

## Comparison with QuickShare

As Discord is a platform dedicated for communities and messaging, it is slightly different in comparison to QuickShare. Discord could be helpful for people having a discord account and sharing a common server or are friends on the application enabling easy sharing of the files while it might be very inconvenient for a recipient not having a discord account.

## 15. Signal



*Fig 17: File Sharing through Signal*

## Pros

- For iPhone and iPad users, image files are restricted to 8 MB, while GIFs are at 25 MB, and videos are limited to 95 MB. Android users image and GIF files limited to 6 MB and 25 MB, respectively, and videos restricted to 500 MB. Desktop users, both Mac and PC platforms image files capped at 100 MB, GIFs at 25 MB, and videos at 100 MB.
- We can choose to set files to disappear automatically after a certain time.
- Signal uses end-to-end encryption during file sharing also.

## Cons

- Signal isn't ideal for sharing massive files due to size limitations.
- Users need to have a signal account.

## Comparison with QuickShare:

Similar to other instant messaging platforms, Signal is mainly focussed on messaging but it is suitable for users to send small files to other Signal users/themselves as it is a more privacy focussed application in comparison to other similar messaging platforms. QuickShare, on the other hand, allows for more large file sharing and offers other options to set an expiration date for the files.

## 16. Instagram (File sharing feature analysis only)

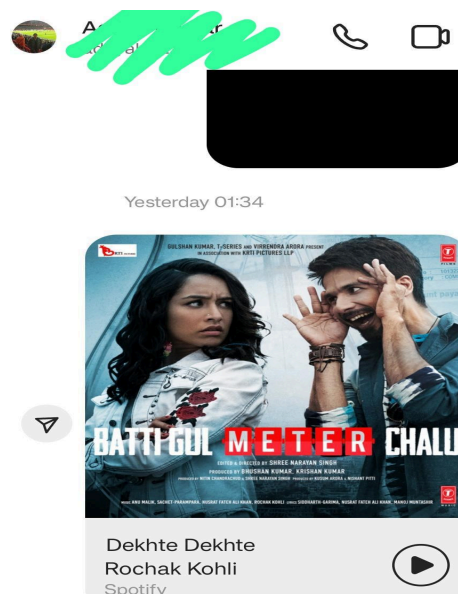


Fig 18: Instagram enables sharing of 30 second snippets of songs

### Pros

- Messages (voice and text) can be sent individually and in groups both at the same time
- Enables real time/interactive sharing owing to its positioning as a social media app - such as Sharing a 30-second preview of a song via integrations with Apple Music, Amazon Music, and Spotify
- Incentivises sharing without having to leave the homepage (which is also important for a social media app)
- Allows “silent sharing” without notifying its receiver - useful for a social media app, not necessarily relevant for QuickShare

### Cons

- Voice notes are only allowed up to one minute; pre-recorded audio files cannot be sent
- Instagram does not allow upload of PDF files/PPT Files



- Optimised as mobile app, does not support most sharing functions on the browser/PC

### Comparison with QuickShare

Instagram incentivises interaction within the app only and is not designed for file sharing purposes and hence is not a direct competitor of QuickShare.

## 17. Facebook (File sharing features only)

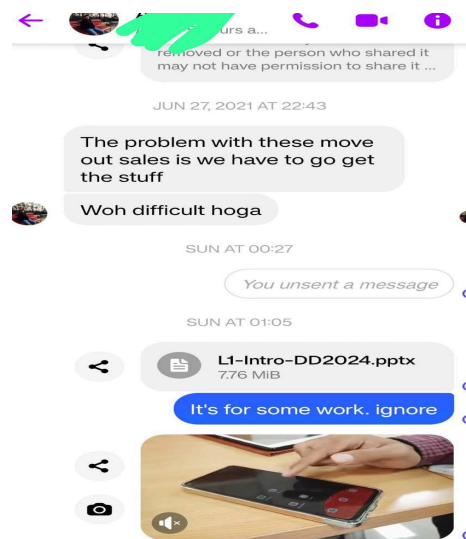


Fig 19: File sharing on Facebook messenger app

### Pros

- Synced contacts from appear real-time for sharing/Instant Messaging
- Enables interactive real-time sharing
- Messages (voice and text) can be send individually and in groups both at the same time

### Cons

- Separate social media app and separate messenger app for file sharing on Mobile phone
- Pdf/ppt file sharing happens only on the browser on a computer and not on the mobile phone app
- Gives repeated notifications of “you’re leaving the app” while the receiver opens the file on a different app, such as pdf reader and PPT readers.
- Slow for large files
- Audio files can only be recorded and sent and pre-recorded files cannot be sent on the mobile phone app
- Allows on only 25 MB of data-sharing of any kind

## Comparison with QuickShare

Not a viable competitor for analysis with QuickShare given it's an app targeted towards a different market segment for different set of functionalities.

## 18. WhatsApp

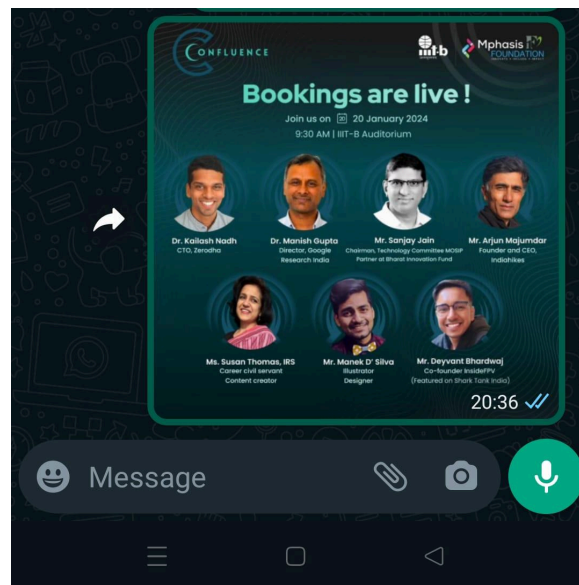


Fig 20: File Sharing through WhatsApp

### Pros

- All files you share on WhatsApp are encrypted, ensuring privacy and security.
- Share photos and videos that disappear after being viewed once.
- Send files directly from your cloud storage like Google Drive or Dropbox.
- WhatsApp automatically compresses photos and videos to reduce file size, making them faster to send and receive.
- We can share photos and videos up to 2 GB in size in individual chats.
- The file size limit for photos and videos in groups is also 2 GB per file. However, there's an additional 100 MB cumulative limit for all messages (text, media, etc.) sent within a 24-hour period in a group.
- The maximum file size for audio files shared on WhatsApp is 100 MB. This covers MP3, AMR, AAC, OGG, M4A, and WAV formats.

### Cons

- Internet connectivity is required for both sending and receiving files.
- Disappearing media features don't guarantee complete deletion - recipients might take screenshots or record the content before it disappears.

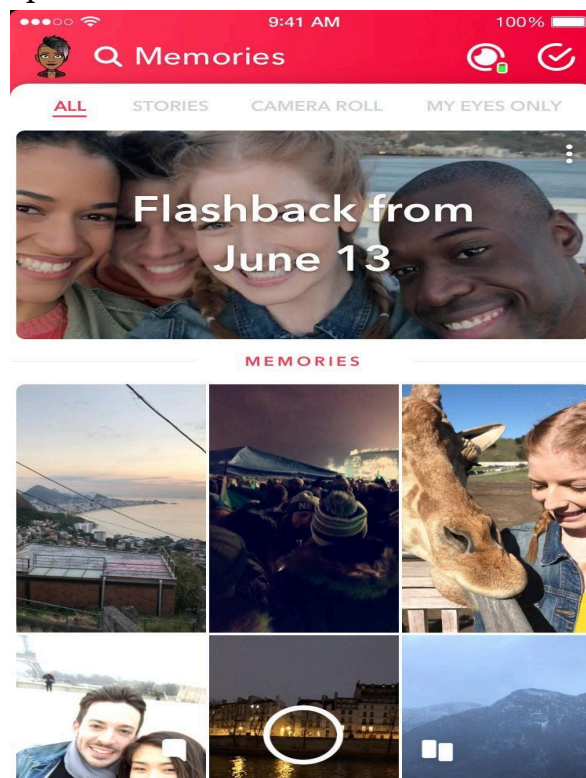
## Comparison with QuickShare

WhatsApp is not specifically designed for file sharing it offers way less features when it comes to file sharing than QuickShare although it is suitable to share small files over WhatsApp..

## 19. Snapchat

### Pros

- Filters provide users with location-specific overlays, allowing them to customise their Snaps based on their current surroundings or special events.
- Users can create group chats, making it easy to share content and communicate with multiple friends simultaneously. This is particularly useful for collaborative efforts and group interactions.
- A collection of Snaps/images can be shared that form a narrative about their day. This feature is great for sharing daily updates, experiences, and highlights with friends in a sequential format.



*Fig 21: Snapchat shows flashbacks in the form of memories to enhance user interactivity.[Source]*

### Cons

- Snap Map can be a fun feature but it raises privacy and safety concerns but users should be cautious about sharing their location.
- Once a Snap is viewed and disappears, there's no way to retrieve it. This may be a drawback if you want a more permanent record of your shared content.

## Comparison with Quick share

Instant image/file sharing is usually done through snapchat where the user can set the time limit for the recipient to view the image. There are also limited editing features in QuickShare for customising the file before sharing.

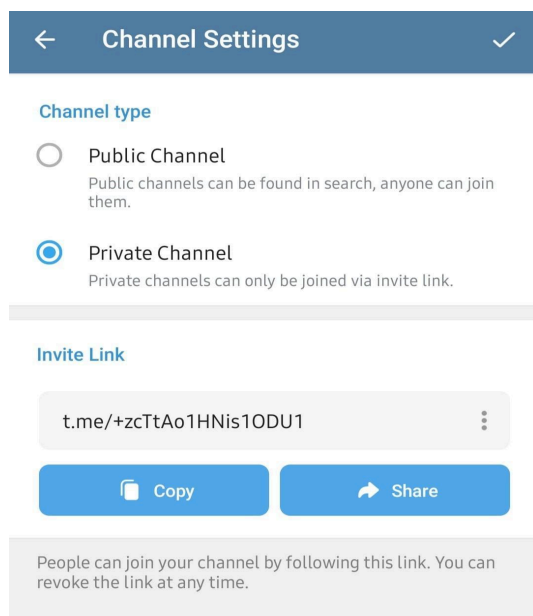
## 20. Telegram

### Pros

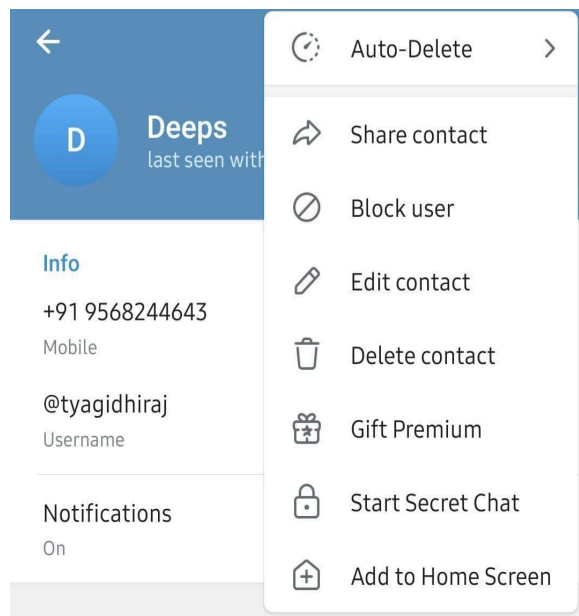
- Telegram offers a secret chat feature wherein Messages, media, and files are encrypted and can only be viewed by the intended recipient.
- Telegram provides cloud storage for users' messages and media, making it easy to access content across multiple devices.

### Cons

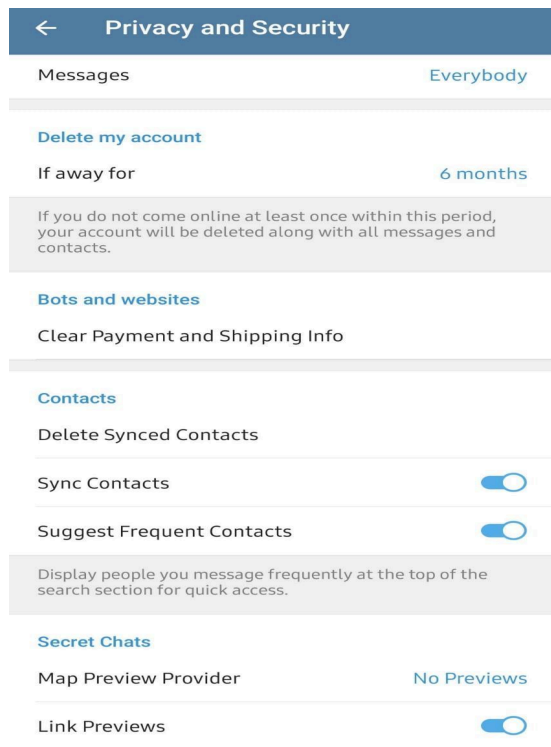
- Due to its privacy features, Telegram is criticised for being a platform of choice for illegal activities, such as the sharing of pirated content.



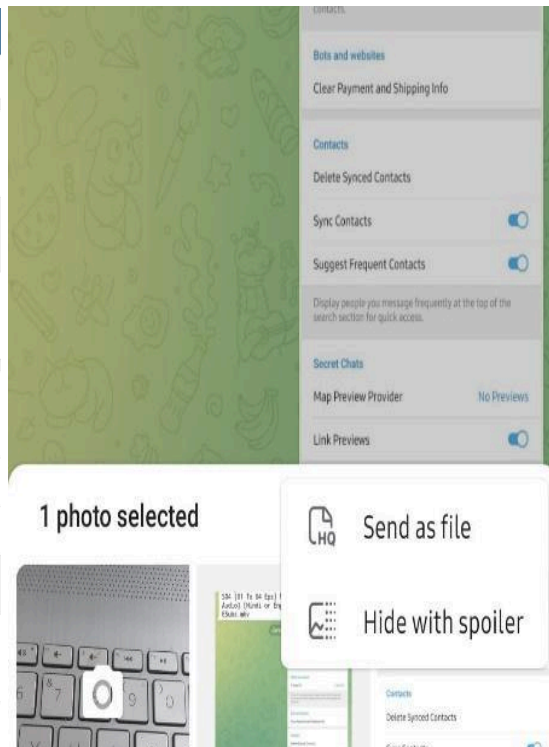
**Fig 22::** Cloud storage can be accessed by making a private channel.



**Fig 23:** It also offers the secret chat feature



**Fig 24:** Link preview to preview content without leaving app



**Fig 25:** It allows the image to be sent as full size file or can be compressed as well..

## Comparison with QuickShare

It would be helpful to implement a feature similar to Telegram's Instant View, allowing users to preview documents without leaving the app. There is no option in Quick Share to compress the file size while sharing as provided by Telegram.