The Challenges and Learnings of Implementing Wallet Connection on Mobile

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No.1 eCommerce Platform for All Businesses. Start, Run + Grow Your Business with Shopify.
What is gm shop?
gm shop is our take on tokengated commerce

What if we could unite brands with their most loyal fans, granting those fans access to exclusive products, gated by the NFTs they already own?
To build that, we need to allow users to connect their wallets and know which NFTs they own.

**proof of ownership in as few steps as possible**

In a seamless fashion.
How did we support wallet connections?
React-Native

Quick Start For Dapps (React-Native)

A drop-in library which helps easily connect your React Native dapps to Ethereum Wallets on Android, iOS and the Web.

Notice: This library assumes you already enabled prerequisite support for Web3 inside your application. This can be done by creating a new project using `npx create-react-native-dapp`, or by introducing support for Web3 in an existing project by using `npx rn-nodeify --install --hack`.

For more details, check out the documentation.

Installing

To get started, install `@walletconnect/react-native-dapp`:

```
yarn add @walletconnect/react-native-dapp
```

If you haven't already, you may also need to install `react-native-svg` alongside a persistent storage provider such as:

`@react-native-async-storage/async-storage`
Deeplinking

Tip

Click here to create deeplinks for your application.

Deeplinks enable instant invocation of the user’s preferred wallet application with correctly parameterized transactions.

Only the (authenticated) user can confirm the transaction, and the wallet can be a web, mobile or desktop app.

URLs embedded in QR codes, hyperlinks in web pages, emails, or chat messages enable robust, cross-application signaling between otherwise loosely coupled applications.

You can use deeplinks for things like:

- Creating a URL so your users can open your app directly in MetaMask Mobile to interact with your application with their Ethereum account.

- Providing a one-click experience such that users can easily make payments to another account (with pre-filled parameters like recipient address, amount, network, etc.)

- Let your users make gasless and instant transactions with Connext payment channel requests
  - This requires that the user opts in for the InstaPay experimental feature.
We were not seeing the success rate we wanted
We still had failures for no apparent reason.

Our hypothesis:

WalletConnect's library assumes a persistent connection, and that was getting in the way.
After a connection and signature:

Our backend could check whether the wallet had the NFT to unlock the products, and the client could drop the session.

Remember: our use case was to establish **proof of ownership** in as *few steps* as possible.
We rewrote our wallet connector code

Getting rid of WalletConnect's React Native dapps library and using their primitives to build our own connector.
The results were good! User feedback, internal feedback and our numbers were significantly better! This version shipped to our users.
Users with really valuable NFTs prefer them

- They are way more security-conscious than the average user.
- We wanted to incentivize good behavior
- So we implemented support for Ledger wallets
But some users wanted support for more hardware wallets.

Unfortunately, not all of them have mobile support.
So as a last resort, let the user connect via desktop*

And propagate that connection to the app.

*Still not implemented, so take with a grain of salt
There's still a long way to go.
What we learned

- Rainbow - WalletConnect Core
- Ledger - WalletConnect Core
- Coinbase Wallet - Deeplinking
- Metamask
  - Android: WalletConnect Core
  - iOS: Deeplinking
- Desktop fallback as a last resort for all other wallets

We needed a robust solution. However, your mileage could vary depending on the use case, the size of your team and the expected reliability.
“We shape our tools and thereafter our tools shape us”

John Culkin
If we want Ethereum to reach the next billion, it needs to be easily accessible on the platforms people use.
Thank you!

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Bounty up for grabs!

Check gitcoin for more details