

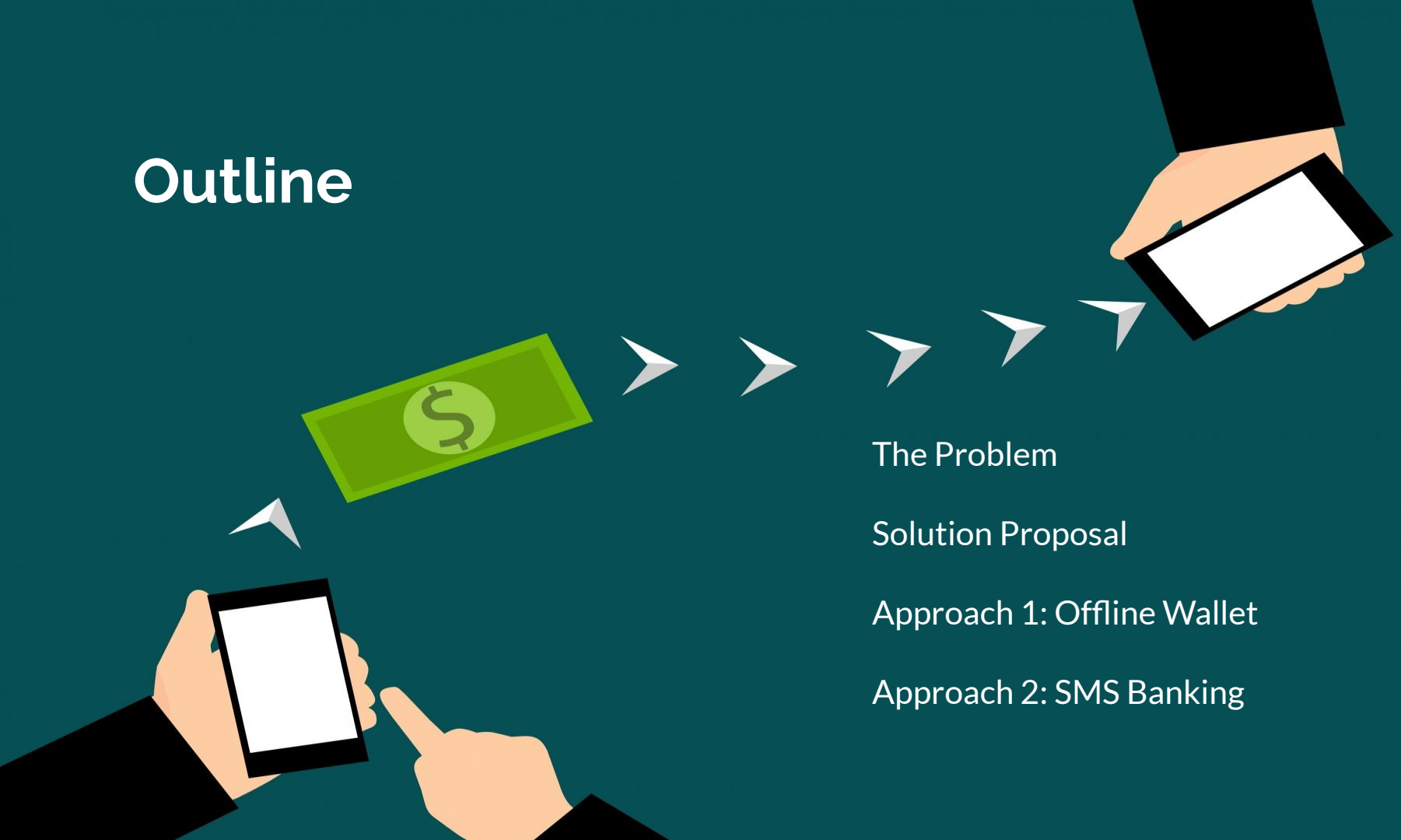


# Team DeBeggars

Offline payments  
And Transactions



# Outline



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## The Problem

**Offline Digital Payments in Rural India,  
during internet or server shutdowns.**



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# Problem Statement

**Internet Availability is a major necessity for digital transactions.**

Internet connectivity is cheap and easily available in modern cities and major towns, but is unavailable in most rural areas. Statistics show that nearly **50%** of rural population **lack mobile internet access** (Source Wikipedia)

This keeps the rural citizens from exploring the possibilities of digital transaction and enjoying its convenience.



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# What is Offline Payment

Offline payments are transactions that are either

- (a) processed without a data connection (or)
- (b) transaction is recorded offline and processed and settled at a different point of time when connectivity becomes available with one or either parties involved in a transaction.

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# Solution Proposal Part-1

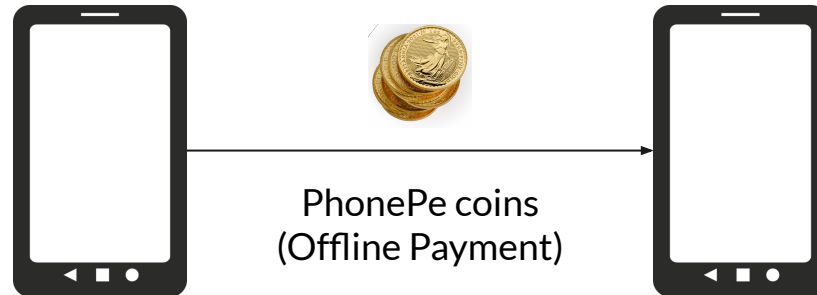
## Use of Encrypted Offline Wallet

Offline wallet is a crypto-encrypted currency generated when money is added to it through bank transfer validated by an online server.

- Offline wallet is enabled with basic KYC verification using Aadhar card (or other govt. identification).
- P-Coins can be generated and added to the offline wallet by making a payment using UPI or SMS Banking.
- P-Coin is a binary data containing owner info and coin code generated by the server.

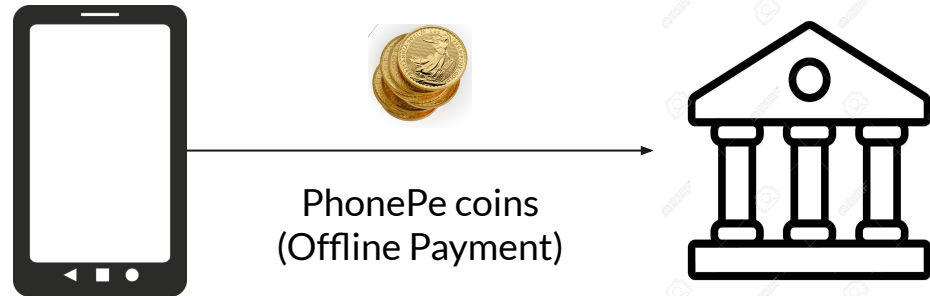


- During offline payments, P-Coins are digitally signed with transaction details like receiver, sender, date&time.
- The receiver would receive the P-Coins but would remain non-transferable till the transaction is validated online.
- Upon validation, owner details are updated at the server and those coins are made available for transaction in offline wallet





- P-Coins received can be sent to a bank account through online transaction.
- This will mark all those P-Coins as terminated in the server making rendering them unusable.





## Security Features

- **Security against stealing** - Owner info is stored online and to change it, a valid transaction has to be made by the original owner.
- **Security against double payment** - P-Coins are removed from the payer's offline wallet. Also all transactions are validated online.
- **Security against fake money** - P-coin received have to be validated online to enable them for further transactions. This prevents spread of fake/duplicated P-Coins and also makes tracing the culprit easier.

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# Solution Proposal Part-2

## Use of SMS Banking

**SMS banking is a form of mobile banking that facilitates the use of SMS linked with customers' mobile phones to provide the service of financial transaction.**

Fact : Earlier SMS banking was used in mobile recharge stores but the currency was in the form of talktime.



## Reasons to choose Short Message Service (SMS)

- SMS **do not require internet connectivity**.
- Works with **2G network**, which is available everywhere
- **Secure** as requests accepted from registered phone numbers only
- Can be made possible even on a **feature phone** (SMS format must be known).

Questions?

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