iCheque- A Digital Way to use Cheques!

Developed By:
Akshit Gandhi
Saurabh Mehta
Abhishek Jain

1. Target Segment & Need Gap

The target segment is any Customer of the Bank who uses Cheques as a payment mode.

The traditional paper mode of using cheques has a many inconveniences for our customers.

Problems faced from Customers Perspective:

Customers have to wait in queues to deposit/withdraw cash against cheque, they have to pay penalties in case of dishonouring of cheques due to signature mismatch, they have to wait for a new chequebook to arrive in case of an exhausted cheque book, cheque clearing takes a max of 1 day, etc.

Problems faced from Banks Perspective:

Banks have to deploy more staff and counters for clearing cheques, every bank is in the race to provide better customer experience to the customers and so they want to reduce the time with the cheque clearing process. They have to deploy & maintain CTS machines which adds to their operating cost. They have to print cheque books and send them to customers through a logistic channel again adding more cost! Upgrading infrastructure to support this “analog paper cheque transactions” is a tough job for the banks. Even many bank employees have been found guilty in illegal cheque clearing practices, etc.

2. So what is our goal?

We want to create a platform/app through which customer can create and deposit cheques at his own convenience without any restriction of pages in cheque books or banking hours. We believe banking must be made simple, safe and convenient.

Our Solution:

We have created an app through which customers can create cheques, deposit cheques, withdraw cash or even split a cheque. Note: All the functionalities/features of the cheque have been kept intact in designing the solution. We have 4 basic types of cheques **Payee/Cross/Bearer/Self** all carrying their usual meanings.

Since cheques are **negotiable** instruments and they cannot be completely ruled out from the economy but it needs to be given a digital shape. Given the above features we also have the feature to even generate Post-Dated Cheques (A feature lacking with ICICI's approach eftCheques).

Consider that you need cash against a cheque urgently, well you can get cash upto 1 Lakh using our feature. You would argue that I can deposit the cheque in my account and then use my Debit Card, but here you go wrong! The maximum limit you can withdraw using a debit card may be around INR 50,000/- well what about the rest amount? Well, another use case wherein you can split a received cheque into 2 to pay 2 people! (elaborated later).

3. Features & Functionalities

Generate Cheque:

To generate cheque you just need to login using your mobile number registered with the bank and a 4 digit password. Select send option and then select **Type of Cheque** (Payee/Bearer/Cross/Self) Select **Date**, enter **Payee Mobile Number**, **Amount**, **Confirm Amount** & **remarks/comments**. We have a database of cheques where these details will be stored and each cheque will be assigned an ID which is unique. Now, you may share this cheque received as SMS with the Payee.

Deposit Cheque:

Login into the iCheque account and add the cheque details received and your mobile number. Here we have employed careful security measures to ensure that no other person can deposit the cheque not meant for him and also before proceeding with the transaction the expiry status of the cheque is checked. Upon passing some more security criteria the amount is transferred through UPI. This gives the customer the convenience to deposit funds into his account without going anywhere.

3. Features & Functionalities continued..

Cash Withdrawal:

In this feature we first check if the cheque is a bearer cheque/ self cheque if so we let the customer proceed with generating a 6 digit code which can be used to withdraw cash from any ATM of the bank Note: OTP is valid only for 1 hour and upto 1 Lakh can be withdrawn (This functionality will attract more users for this app!)

Split a Cheque:

In Small Businesses in India Cheques are used to transfer the ownership from one person to another using either unnamed or bearer cheques. We wanted to give it extra functionality through which not only a customer can forward a cheque to another person but can also split some amount into 2 parts and send 2 separate cheques to either 2 different persons or the same person. This is very helpful in many cases.

3. Features & Functionalities continued..

SMS Cheque Generation:

Another feature of our system is that if there is no internet connectivity or if the customer uses a feature phone instead of a Smart Phone then he can generate a Cheque using SMS. The request is verified with a IVR call by verifying the customer's PIN. Upon verification a Cheque is generated and it is sent via SMS.

Other additional features include viewing details like cheque status, payee, amount,etc all generated cheques, stop clearing of a cheque and so on.

Future update will be to push **Demand Draft** Generation online using our platform which will deduct the balance beforehand and then generate demand draft.

If this product becomes a **reality**, it stands a high chance to **revolutionize** Banking for Corporates, Businesses, etc. As **India** is moving towards **Cashless** & **Digital Economy** these steps matter the most!

4. Technology Stack

Our whole **server architecture** is deployed on Digital Ocean.
The Programming Languages used at the server side are:
PHP and Python.
PHP is used for posting data from app and Python scripts are used to generate SMS/IVR calls.
MySQL is used for Database.
Operating System used is Linux (Ubuntu 16.04)

On the **Client Side** we have used a **Hybrid Framework** for Building App (**PhoneGap**).
The Programming lanuages/markups used:
HTML, **CSS**, **JavaScript**, **Jquery**, **Bootstrap**, **AngularJS** and **Android Studio**.
->The app is compatible with **Android, iOS, Windows** and many more platforms which are supported by Cordova. The app is tested on Android, iOS and also on the Web.
Operating System used to develop app was Windows 8.1.

Our **SMS/IVR** providers are **Plivo** and **Twilio.**
The helper libraries were used and a **US based number** was purchased to facilitate the functionality of generating cheques using SMS and PIN verification system.

5. Comparison with other solutions

Now, given these features there is NO single app/solution in the market that can provide such diverse features with such simplicity. It has many advantages over the traditional method as it is more safe, secure, easy and convenient to use. ICICI Bank's eftCheques also does not have these many features (There is a limit of **maximum Rs. 25,000 per day** for which an eftCheques can be issued for, the cheques are valid only for 3 days, beneficiary needs to keep account number and IFSC Code ready so that decreases the convenience whereas we just want you to remember your mobile number and password!) With our app you can **generate Cheques for any AMOUNT!** And validity for 90 days same as the traditional cheques, and we are using UPI as the backbone of transferring funds so our app will be compatible with any Bank In INDIA. Comparing with NEFT and RTGS well you will have to wait for atleast 30 mins for your bank to activate the new beneficiary and you need to know the beneficiary's account number, IFSC Code and other details.

6. API's used

We have used the Retail Banking API and the UPI for developing this app. Additionally we have a database of Users, Cheques, etc. Which can be accessed by posting relevant parameters & values at the url http://139.59.79.171/icici/<api-name.php> .

7. Integration

The system is very simple to integrate into any existing app like eftCheques or even POCKETS giving it "MORE" than a wallet functionality as we have developed standard webpages to be served. As the core functionality uses ICICI provided API is will be pretty simple to integrate into their system. As far as cash from ATM is concerned it may take a software update at the ATM's.