Project **eWallet**

Bohol I Electric Cooperative, Inc.

I. Overview

BOHECO I eWallet is a mobile application (Android, iOS) that will enable the consumer to pay from their homes via ePayment method. The idea is that the consumer can download the app, creates his e-account linking with his BOHECO I account, and deposits an amount from our payment partners or directly to our office tellers. The amount he deposited will act as a balance, in which he can use whenever he wants to pay his bills, of course, that is if the balance is still sufficient.

II. Scope

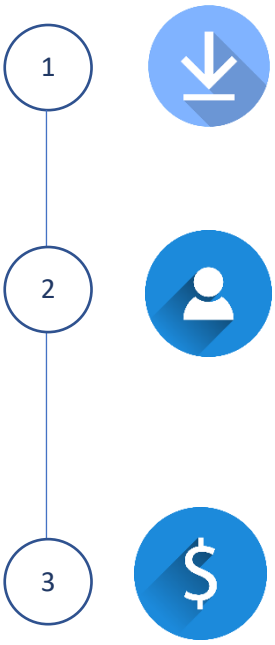
As modern technology advances, so should our services. The demand for online transactions nowadays is high. The sole purpose of the project (for the time being) is to provide an easy and convenient mode of payment for our consumers' monthly bills. In the future, other transactions such as reconnections, energization applications, etc., will be included in the app as well.

III. Comparado

There are already a handful eWallet and ePayment apps out there that are already well-established. But none of them has the capability of eliminating the basic problems we always face when accepting payments from third-party organizations (e.g., double payments, arrears). Below is the list of comparisons between ours and third-party eWallets.

Case	Third-Party eWallets	BOHECO I eWallet
Can it eliminate double payments?	-	**YES**
Can it include the surcharges if the bill is due?	-	**YES**
Can it monitor and restrict transactions if arrears are present?	-	**YES**
Can we monitor realtime?	-	**YES**
Can it deliver confirmation notifs to consumers if payment is done successfully?	**SOME**	**YES**
Can it alert the consumer if he is due?	-	**YES**
Can consumers deposit balance on our payment partners?	**SOME**	**YES**
Can we trace the details of the transaction (location, phone, etc.) for emergency purps?	-	**YES**
Is it report ready?	**SOME**	**YES**
Is it encryption-ready?	**YES**	**YES**
Are consumers required to pay additional fees?	**YES**	-

IV. Client App Process Flow



Step 1- Consumers will download the app from our web domain or from the Play Store

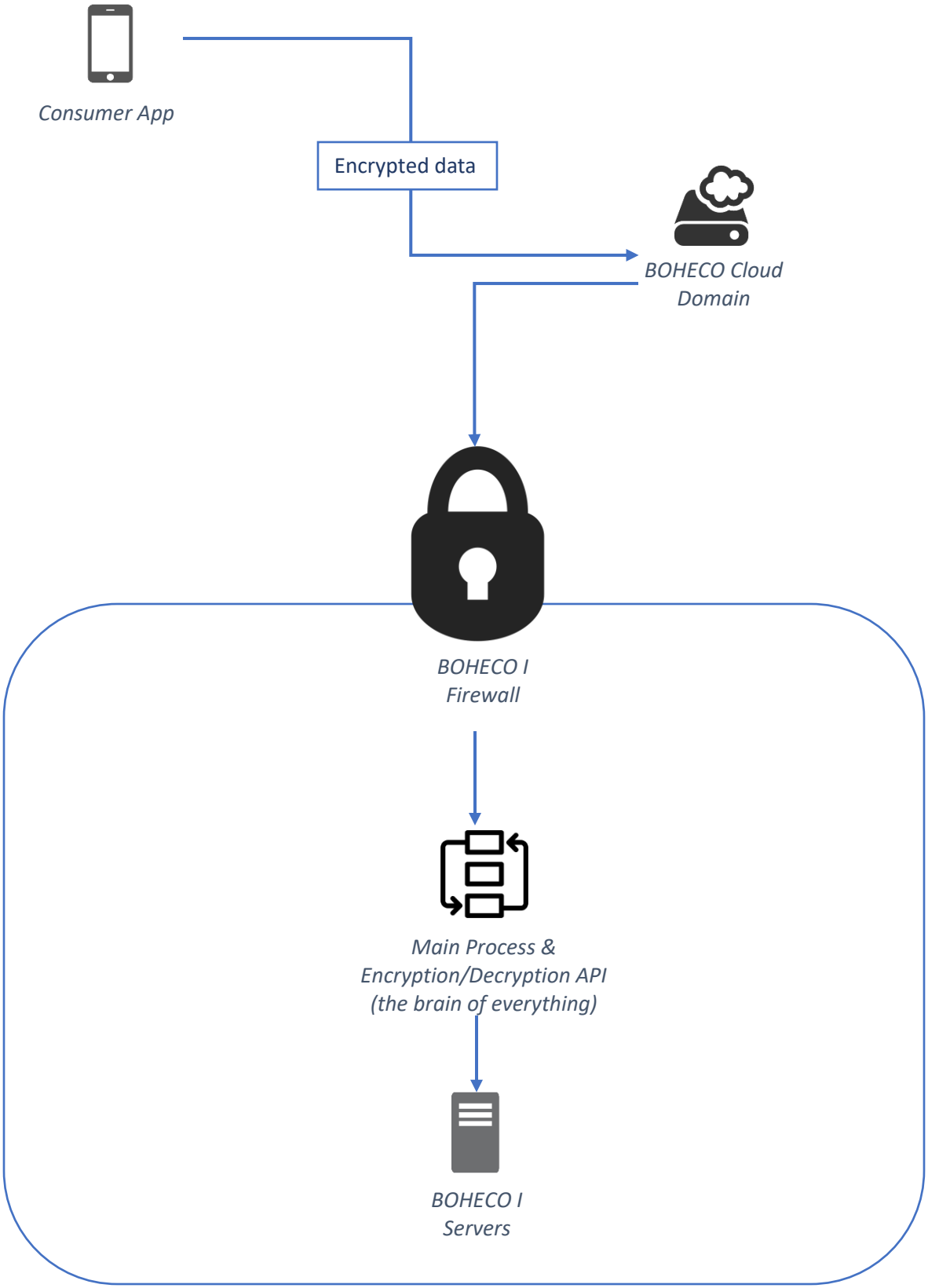
Step 2 - The consumer will create his/her BOHECO I eWallet account tagged on top of his BOHECO I account

Step 3 - If a consumer desires to pay, he will deposit a fair amount of money via our tellers or to our payment partners to his eWallet account. This money will act as his balance on his eWallet. NOTE that this balance is consumable, so if he has still sufficient balance on his wallet for the next billing months, he can still use it.

ADDITIONAL NOTES

1. If the consumer desires to not do any transaction on his eWallet, he can still use its other features such as viewing of his monthly bills (previous & present).
2. If the balance is not sufficient enough to pay his bill, he will be notified.
3. He will also be notified if his bill isn't paid yet 2 days before his due date. The notification will include his surcharge.
4. The balance is NOT TRANSFERABLE TO ANY OTHER eWALLET ACCOUNTS AND NEVER WILL BE, in case somebody will try to tamper his phone. He cannot also pay twice, there's no logical point in doing that.

V. Application Schema Diagram



VI. Logic & Validation

A. User/Consumer Account Related

1. A user must be an MCO of BOHECO I, and thus should have a BOHECO I account with an active account number. He can never create an eWallet account NOR use its other services if he is not since his account number will be used during the validation.
2. **HE CAN NEVER HAVE MULTIPLE EWALLET ACCOUNTS EVEN IF** he has multiple BOHECO I accounts. An account number can only be linked to one eWallet account, but an eWallet account can contain multiple account numbers since there are many consumers with multiple connections.
   2.1. By default, only on account number is linked to his eWallet account. If he wishes to add his/her other connections, he will file an additional account request, which is a feature embedded in the app. We will be verifying his application via phone call to ensure that the account he requested to add is his.
   2.2. He can use his balance to pay all his linked accounts as long as its sufficient.
3. He can only log his account in to strictly **ONE DEVICE AT A TIME**. Meaning, he can never sign in one eWallet account across multiple phones at the same time. If he wishes to log on to another device, he will log his account out of the previous one.
4. He can download his SOA in the form of PDF through the app.

B. Payment & Balance Related

1. His balance **CAN NEVER BE TRANSFERRED NOR PASSED ONTO ANOTHER ACCOUNT**.
2. He will always be notified through SMS on top of the app notification bin every transaction or payment he has been done.
3. We will be discussing if he will be allowed to withdraw his balance whenever he wishes to.

C. Security Related

1. All transactions from and to the server **ARE ENCRYPTED** using our in-house developed type of encryption. The encryption is a 64-bit based hexadecimal one, meaning every character is converted into 64-bit hexadecimal code. This is the first layer of security our eWallet does posses.
2. All transactions are rerouted first to our domain to avoid direct DDOS attacks, though android apps seldom if not impossible to hack. This will act as the second practical security layer.
3. All data will that's going from and to the query API will **GO THROUGH OUR FIREWALL FIRST.** Our firewall has the capability of doing really nasty security stuff.
4. The app also uses tokenized transactions, meaning all his activities are cached. This enables a fast but secure transaction.