

Project Background:

The project aims to create a mobile application, which synergizes mobile convenience and brick-and-mortar shopping experiences together through incentivizing in the form of several loyalty rewards program schemes in the automotive industry.

The Value Proposition:

The mobile application will host multiple participating commercial merchants in an e-catalogue, segmented by brands, where automotive merchants are able to list their retailing products/services at retail and/or discounted prices. Customers are incentivized to earn rewards through 2 different loyalty schemes of their preferred choice, Cashback or Loyalty Points, when they visit brick-and-mortar shops.

Customers would just need to simply scan the selected retail product/services through a QR code or barcode, transact through the mobile application via our mobile payment gateway, and earn X% of Cashback or X amount of Loyalty Points upon successful transaction.

The Loyalty Schemes:

Customers who choose the option of Cashback will have their Cashback instantly returned to the customer's bank account in the same day. Customers who choose the option of Loyalty Points will be accrue points stored in their account where they will be able to use their accumulated Loyalty Points to redeem products/services offered by merchants. Loyalty Points will have an expiry period of 6 months to be used.

Customers, under the option of Loyalty Points, will have a separate tab in the app where they can see a catalogue of products packaged in the form of points. Cost per point ratio is \$1 for 10 points. Redemption products listed will be the equivalent of set price in the amount of points (e.g. set price at \$100, points displayed will be 1000 points). Under the catalogue, there will be a slider that allows a points+cash ratio change, which will allow the customers to choose the percentage of points mixed with cash payment to redeem the product. This will help customers who do not have enough Loyalty Points to continue to enjoy redemption of the products.

Membership Wallet:

The mobile app will also host a feature to called Membership Wallet. Membership Wallet serves as an e-Wallet that allows customers to digitally store their individual membership with various merchants within a singular app. Customers will just need to select the membership that they would like to store, enter in their membership number, full name and email for verification. Members who wishes to sign up for new memberships will be able to simply select through the e-Wallet and sign up for a new membership via a simple enrolment form.

Once verified, the digital membership will be stored in their account via the app. Customers will be able to see their exclusive membership benefits whenever they view the digital membership card or visit the merchant's brand in the product catalogue. When customers view the product catalogue, any exclusive member discounts such as 20% off will automatically be reflected on the products under the merchant's brand.

Frontend and Backend Technology:

The centralized mobile application will provide real-time analytics and reporting tools for both merchants and the business team. The mobile application must be able to integrate with AWS (Amazon Web Services), Couchbase technology and developed in iOS platform using Swift programming. The admin management interface must be compatible with Google Chrome, Safari and Internet Explorer using Bootstrap framework.

Functionality (Application)

1) Log in/Log Out

- Sign up through Facebook Login or Email Address **or Mobile Number**
- Forget Password (Password Reset through Email)
- Online version required
- User will be log out of the application if either he/she changed the password or log out manually else user will remain log on even if the application is killed and relaunched.

2) Product Catalogue

- Customers can view a list of Merchants available, segmented by brand with Search option
- Selecting a brand, customers can view the list of products listed by the merchant, along with the amount of Cashback or Loyalty Points they can earn, depending on the scheme that they have preselected.
- QR code or Barcode Scanning Function to scan products for checkout
- E-Receipt creation, emailing to user. Invoice creation of transactions made end of each day for Merchants
- Display of in-store promotion such as discounts and membership exclusive discounts

3) Payment Gateway

- Payment checkout ability to use main payment options such as Mastercard, Visa, Alipay and Paypal.
- Store credit card details digitally and with multiple credit cards or Paypal account details
- Verification check of BIN Ranges of a valid credit card to minimize frauds
- Form to enter verification details such as First Name, Last Name, Email Address, Phone Number
- Payment to be made in app, not forcing an external webpage
- Store credit card details using screen capture technology like Apple Pay
- Force fields of compulsory information to be filled in before proceeding to checkout

4) Loyalty Schemes

a. Cashback

- Cashback amount must be able to bank transfer to the user's bank account with a minimum X amount of accumulated Cashback

b. Loyalty Points (Accrual)

- Ability to count, credit and store Loyalty Points in each customer's account
- Ability to track and display expiry date with Loyalty Points

c. Loyalty Points (Redemption)

- Ability to display amount of Loyalty Points required for redemption of each product
- Slider to mix Loyalty Points plus cash payment ratio and display points+cash on each product
- Ability to determine ratio of Cost Per Point on the backend. Ratio is \$1 for 10 points.
- Ability to debit out redeemed points from customer's account

5) Membership Wallet

- Ability to display multiple types of virtual merchant membership and card artwork
- Ability to store multiple memberships of the customer in a singular e-Wallet view
- Ability to display and sign up customers for new memberships through a simple signup form
- Ability to display membership benefits through a single pop up view upon selecting.
- *Able to keep track & monitor the membership status of the customer – Date of sign up, membership level (VIP, VVIP etc.), date of expiry (if any).

6) Location Based Services

- Able to rearrange ranking of the merchants in the catalogue and push available merchants around the user's location within 50 meters' range to top rankings

7) Push Notifications

- Able to push phone notifications or in-app notifications of recommended products or marketing messages

8) User Settings

- First Name
- Last Name
- Gender
- Date of Birth
- Email Address
- Address
- Language
- Country
- Currency
- Bank Account No.
- Payment Methods
- Password
- Password Reset
- Switch of Loyalty Schemes
- Contact Us
- Terms and Conditions
- Privacy Policy

9) Rating, Sharing, Marketing

- Add in a feedback/rating of product or merchant

- Quick share function for exclusive app only promotions. Sharing to mediums →FB, Instagram, Twitter, Whatsapp, Email

10) New Function

- Merchants can collaborate with one another from different categories. Merchants in the same categories will not see each other's promotion.
- Limit by number of deals or promotion period.

Functionality (Admin Management Interface - Merchant)

1) Log In/Log Out

- Login Portal for Merchant
- Forget Password (Password Reset through Email)

2) Transactions

- Full transaction level history of customers' purchases
- Ability to filter by date, type of product

3) Dashboard

- Sales Report (Target vs Actual)
- Profitability Report, Revenue and Net Margin
- Number of transactions, unique customers, average transaction size, average sales per unique customer, Cashback earned, Loyalty Points Earned, Loyalty Points Redeemed
- Ability to filter by region, type of product, type of Loyalty Scheme, promo vs regular priced items
- New Customers/Inactive Customers Report
- New Membership Signups

4) Merchant Retail Branches

- Address
- Phone Number
- Email Address

5) Products

- Item description
- SKU
- Unit
- Price
- Discount
- GST/ VAT
- Sizes
- Colour information

6) Membership Admin Panel

- New app members acquired
- New merchant membership signups acquired
- Members Information and Membership Status
- Membership Enable and Disable
- Export .csv file of members and membership details
- Merchant Membership set up
- Membership Tiers
- Membership Benefits
- Membership Promotion Messages
- Membership Card Artworks
- Membership Signup Forms

7) Invoices

- Invoices due for payment by Novosphere including Status and Invoice numbering
- Reconciliations of outstanding payments to merchants or from merchants

8) User Settings

- Company Image
- Company Membership Card Image
- Company Name
- GST Registration Number
- Company Address
- Company Bank Account Information

- Company Contact Number
- Company Email Address
- Password Reset
- Feedback for Bugs
- Novosphere Chat Bot for support

Functionality (Admin Management Interface – Novosphere)

- 1) **Log In/Log Out (Applicable to All)**
 - Login for App Admin
 - Forget Password (Password Reset through Email)
- 2) **Dashboard (Applicable to Management)**
 - Sales Report
 - Profitability Report, Revenue and Net Margin
 - Number of transactions, unique customers, average transaction size, average sales per unique customer, Cashback earned, Loyalty Points Earned, Loyalty Points Redeemed
 - Ability to filter by region, type of product, type of Loyalty Scheme, promo vs regular priced items, types of merchants
 - New Customers/Inactive Customers Report
 - New Membership Signups
 - Issues Status Report
 - Growth Chart
 - Monthly P & L
- 3) **Merchants (Applicable to Admin)**
 - List of Merchants
 - Merchants' information
 - Credit terms
 - Inactive/active status
 - Sales, Revenue Generated, Net Margin
- 4) **Loyalty Schemes Admin Panel (Applicable to Admin)**
 - Cashback Settings, inclusion/exclusion of merchants, % of Cashback
 - Loyalty Point Accrual Settings, Cost Per Point calculation for each Merchant
 - Loyalty Point Redemption Settings, Cash to Point Ratio for each Merchant, \$1 to 10 points
- 5) **Push Notifications Admin Panel (Applicable to Admin)**
 - Able to create push notification messages for each merchant
 - Ability to do scheduling of push notifications
- 6) **Feedback (Applicable to Support)**
 - Issues logged by Merchants and End-Users
 - Able to update Issues Progress and Status (New/ In Progress/ Requires More Information/ Completed)
- 7) **User Settings (Applicable to All)**
 - User First Name
 - User Last Name
 - User Position
 - User Contact Number
 - User Email
 - Password Reset
- 8) **Admin (Applicable to Admins)**
 - User Accounts Creation/ Deletion
 - User Rights (Management, Admin, Support)
- 9) **Merchant Collaborations**
 - Based on merchants products/services, merchants are allowed to collaborate together to create better promotions
 - Merchant A collaborate with Merchant B to create better promotions to upsell products/services

Non-functional Requirements

- User Friendly experience
- Biometric login using fingerprint
- Accommodate high volume of users
- Proper programming standards
- Documentations including API