PIQO’s Functions

pg.appson.ir

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# Overview

PIQO is an efficient billing platform which allows content providers to charge their customers for the virtual goods and services they provide. With PIQO’s user friendly registration process, content providers can easily sign up and define their goods and services and benefit from this platform. The merchant wants to sell their goods and services and the operator offers Direct Carrier Billing as an option so PIQO acts as a middle man to facilitate payment transactions between merchants and carrier providers.

* Advantages
  + Easy to use
    1. No need to install a new software
    2. No need for physical cards (debit / credit)
  + Secure
  + No need for bank account or credit card

# Main Flow

End-User

Content Provider

PIQO

Mobile Network Operators

Initiate Purchase

Begin Payment

Begin Transaction

Send Validation SMS

User Enters PIN

PIN Confirmation

PIN Confirmed - Charge

Send Successful Purchase SMS

Transaction Confirmation

Payment Successful

Purchase Successful

PIQO is a service that can be used by all online merchants who want to reach a broad costumer segment and high conversion rates. The users simply input their phone number that they want to be charged from, the carrier gets their consent and charges them on their bill and consequently the merchant provides them with the service. The detailed steps are as follows:

1. The user views the price of the good or website on the CP’s page and clicks purchase.
2. The MSISDN they are currently using passes through or they enter it manually.
3. The CP sends a request to PIQO and demands the payment.
4. PIQO notifies the operator of the request.
5. The mobile network operator sends a validation SMS containing a PIN code to user to get consent.
6. The user enters the PIN code on the CP’s API.
7. The CP sends the PIN code to PIQO.
8. PIQO sends the PIN code to operator for confirmation.
9. The operator charges the user, sends confirmation to PIQO, and sends a SMS to the user notifying them that their transaction was successful.
10. PIQO sends the confirmation to CP.
11. CP can now provide service or deliver goods to the customer

. (Note: Subscription time might differ from the actual subscription time.)

# Terminology

CP: Content Provider, a.k.a. merchant

DCB: Direct Carrier Billing, using mobile phone to buy goods and services and paying the purchase cost on cell phone bill.

Postpaid Contract: Purchase cost is added to monthly bill, the total cost can be paid by the end of the period.

Prepaid Contract: Account balance is reduced by the amount of purchase cost, the user must have balance to perform transaction.

MNO: Mobile Network Operator

MSISDN: Phone number which starts with 98.

Application / Product: A product that the content provider has developed and wants to generate revenue from it through DCB services, such as games, video sharing website, music sharing website, etc.

Product Item: A subset of a product which has its price and details specified by the CP.

# Step by Step Registration

In this part, we assume that the content provider has already contacted the aggregation department and the latter has already delivered the CP’s proposal to the MNO. After proper negotiations, they have received the Application’s approval from the operator to generate revenue.

## List of the Information obtained from the MNO

* When the aggregation department takes the CP’s proposal to the MNO and gets is accepted, it is PIQO’s turn to complete the process.
* PIQO receives an e-mail from the MNO containing the following information about each application:
  + Service ID: The event of a user sending a keyword to a short code, is called a service. The operator dedicates a service ID to each service which can be provided.
  + Service Key: A GUID format key
  + Service Name
  + Short-Code
  + Codes for Subscriptions:
    1. Register Purchase Code
    2. Un-subscription Code
    3. Renewal Code
* Codes for Charing

## Signing-up on pg.appson.ir

* Each developer can sign-up in PIQO’s website using either phone number or email address.
* After signing-up each CP will have to provide their personal information through the form located in the developer section.
* CP’s personal information must be reviewed and accepted by the PIQO administrator and granted a certain type of access.
* Each developer would only be able to use the DCB for their products if they are recognized by PIQO.

## Defining Applications/Products

* Prior to defining application on the website to use PIQO’s services, developers have to contact the business unit and notify them of the new application.
* The business unit will contact the MNO and complete the legal process.
* When the application is approved by the MNO, PIQO will record it in its own database.
* Each developer can define one or more applications.
* The prerequisite for being able to define an application is to have its APP-ID.
* For example, the product can be a game, a platform that sells music or a platform that allows users to share videos and charges them for premium content.

### Acquiring APP-ID

* APP-ID is a unique identification with which the applications that CP wants to use the services for, can be identified.
* PIQO recognizes each developer’s application by their APP-IDs.
* APP-ID would be acquired by e-mail from identity team.
* Identity team will agree to generate the APP-ID under the condition that the application is already approved by the operator and its name exists in the database.
* Each APP-ID should be authorized by the PIQO administrators and assigned a payment method, invalid APP-IDs will be disregarded.
* Developer X has developed two games and a platform that sells music so he will define a total of three APP-IDs.

### Acquiring RSA key

* RSA key is a private key based on RSA algorithm.
* The CP signs its content with the RSA algorithm and consequently receives two keys. A public and a private key.
* The CP should keep the private key for themselves after signing the content.
* The CP should send PIQO their own public key so that PIQO can check if the content actually belongs to that CP.
* The public keys can be generated by using PIQO’s own application via the link <http://piqo.ir/resources/RSAKeyTools/SignatureTool.zip> .

### Choosing a Product Code

* Each application will have a specific ID which is to be chosen by the CP.
* It is mandatory for Product ID syntax to start with “PRD”.

### Creating a Return URL

* When a user has revoked their subscription, the CP will be notified via this address.
* This address can be directly entered by the CP.

## Payment Methods

* After the CP has created a product, PIQO administrators should confirm a product and allow it to use a method or methods of payment for it.

## Creating a Product Item

* When a “product” is successfully created, the CP can create one or more “product items” as a subset of the formerly created product.
* In this stage, the CP should clearly state what type of product item, customers can purchase.
* E.g., if a CP has defined a video sharing platform, “one-month silver premium content with 2GB of cloud storage” subscription including the price statement can be an example of a product item.

### Price

* The user should be informed of how much the product item is.
* If the MNO is IMI, the price will be pre-defined.
* IMI inspects the price that the CP has offered in the proposal and after analysis, decided on how much the application can be charged.

### Short-code

* When the MNO approves the CP’s Product, it will dedicate a specific short-code for the CP’s users to send SMS to.

### SMS Keyword

* The MNO also dedicates what keyword to be sent to the short code in order for the customers to be charged on their bill.
* If the keyword of a product item is not identical with what the operator has dedicated to that product, the MNO will count the product item as invalid and the CP will not be able to charge their customer.
* Types of SMS Keywords:
  + One-off Purchase Code
  + Subscription Code
  + Unsubscription Code

### Subscription Type

* If the item is of subscription type, the user should know of how often the subscription is to be renewed.
* Number of Free Subscription Periods
  + If the purchase is of subscription type and the CP decides to give free membership to its users, it can state the number of free periods in this field.
* Number of periods allowed to charge
  + If the purchase is of subscription type, the CP can decide (or it is decided for the CP by the MNO) that how many types can the CP legally charge a user in a specific period.
  + E.g. If the CP is selling monthly subscriptions, the user will only be charged once a month for that specific product item.

### Start / End Dates

* + The CP should decide how long the product will be using the DCB facilities.
  + E.g. If the product is only defined for campaigning purposes, its life time will be between a specific period.

### Purchase Code

* + Per each product item, PIQO will define a purchase code which refers to a record.
  + The record contains the information of service key, charge code, subscription code, revoking code, renewal code, service identification and short code.
  + The CP can get this code from PIQO directly.

### Policy Name

* + This field is created for the purpose of user categorization.
  + The users are categorized into two groups of postpaid and prepaid, based on their mobile contracts.
  + The MNO has defined certain set of rules and regulations for each of these groups.
  + E.g. for the users who have postpaid contracts, the total amount of subscription is accounted to them on their bill by the end of the period. However for the users who have prepaid contracts, the subscription amount is divided into days and subtracted from their account on a daily basis.

## Transaction Details

### Access Code

* + When the user performs a transaction, and the transaction is successful PIQO creates an associated Code with that transaction.
  + This created transaction code is recognized by PIQO and is called Access Code.

### Transaction ID

* + When the user performs a transaction, the MNO creates an accossiated ID.
  + This ID is given to PIQO by the MNO directly.
  + Transaction ID can be later on checked with Access Code to identify errors.