



GENERATION OF LIABILITY REPORTS FOR A RETAILER FOR THIRD-PARTY COUPON TRANSACTIONS

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ABSTRACT

Today Retailers process third party coupons by having an integration of their POS terminals directly with the third-party vendor databases, to validate the details of coupons, keeping the customers waiting at POS machine. To eliminate the inefficient process of having customer wait long, till the coupon approval response received from third-party vendor database, redesign the entire validation process to be simple, faster and real-time by having a solution where in the Retailer maintains his own local database holding third-party coupon details with real-time integration of this database to the POS terminals. This solution simplifies the validation process, makes it real-time avoiding customer wait times thereby enhancing customer experience and customer satisfaction. This solution is designed to achieve this major objective; 1) Business process simplification - coupon validation simplified by integration to one consolidated retailer local database rather every time going to multiple third-party databases for every coupon validation/redemption transaction. In addition all shop outlets of the retailer can access consolidated retailer database to provide same experience to customer across all its branches. 2) Making validation process faster and real-time - use retailer consolidated database only to pull coupon details real-time during business hours; night time do a batch updates of coupon details from multiple third-party vendor databases to the retailer database; this ensures faster retrieval of coupon details from the database during business hours. Enhance customer experience and satisfaction - wait time of customer for coupon processing/approval at the POS terminal will be drastically reduced making it more real-time thus giving a pleasant experience to customer.

Keywords: POS, coupon, validation, redemption, third-party vendor.

1. INTRODUCTION

Objective is to build a system that will simplify integration of Retailer POS terminals for processing third-party vendor coupons; make the processing more real-time and to generate at the end of each day, a liability report that can be shipped to each of the third-party vendors. To design this system, various components that need to be built are:

- A new Retailer local database to hold the third-party coupon details
- A Webservice integrating Retailer POS terminal to the Retailer local database and third - party databases
- Integration of Retailer database with third-party vendor databases for daily night batch updates
- Format for the liability report that retailers can send daily to third-party vendors for settlements

As an output, System will generate a daily liability report that retailer will ship to each of the third-party vendors. This report will help the retailer for faster & easy settlements of dues from third-party vendors without any conflicts.

Daily night batch jobs, keep the retailer database in sync with all the third-party vendor databases

2. EXISTING SYSTEM

Today every Retailer processes third-party product vendor promotions to attract more repeat business from customers. Most Retailer systems connect directly to the third-party product vendor databases when coupons are scanned at their POS terminals to validate & re-deem the

coupons. Following disadvantages are noted with this method of processing.

Disadvantages of existing system

- Retailer system has to wait till third-party vendor database responds and approves the coupon
- Long waiting time for Customer to get the coupon processed impacting customer satisfaction
- Retailer has to depend on the third-party vendor reports for settlement of dues
- Retailer completely dependent on the third-party vendor systems to process the coupons, generate end of day reports, track the dues, settlements etc.

3. PROPOSED SYSTEM

Proposed system is designed keeping in mind the above disadvantages current Retailer systems have today. Proposed system eliminates the need for interacting with every third-party vendor database for processing each coupon transaction. System is designed to fetch the coupon validation and redemption details directly from a local consolidated Retailer maintained database. Integration process is simplified by having POS system connect to the local database maintained by Retailer to validate the coupons rather connecting to multiple vendor databases through complex integrations. Daily batch runs are executed to keep the local Retailer database in sync and up-to-date with the vendor databases. During business hours, coupon validations are done retrieving the data from the local Retailer database, thereby drastically reducing the wait time of customer at the POS terminal for coupon redemption. In addition the Retailer local database will be integrated to POS systems of multiple



branches/shop outlets of the retailer - this will enable the Retailer to generate liability reports in any preferable standard format for all branches - example one report for each shop outlet in same standard format; one consolidated report for all shop outlets; one report of each coupon vendor; consolidated report for all coupons processed in a day etc.

Section IV provides details of architecture of the proposed system.

Advantages of proposed system

Several benefits will be achieved with this new proposed system.

- Process simplification - Entire coupon redemption process is simplified for Retailer by just integration to local database than connection to N number of third-party vendor databases
- Faster, Real-time Processing - Since integration is to local database, processing of coupon will be much faster compared to waiting for third-party vendor database to respond. In addition, since all data updates done during night batch runs, day-time business hour transactions will be much faster on the local database
- A detailed liability report end of each day for the Retailer on the no. of coupons processed per vendor wise, per store wise etc - giving Retailer complete record of liabilities from third-party vendors, helping in tracking and making settlements with third-party vendors more smoother and easier

Flexibility for the Retailer to extend his local database to as many existing/new shop outlets without depending on third party vendors for integrations, thereby making integration of each new shop outlet simple and fast by just connecting to its own local database.

4. SYSTEM ARCHITECTURE

Below is the business process flow diagram of the proposed system. Retailer billing terminal (POS system) is integrated to a newly built local Retailer database through a Webservice. Retailer database maintains locally all coupon details from multiple third-party vendors and it is kept up-to-date through daily batch runs connecting to third-party vendor databases during out-of-business hours (mainly nights).

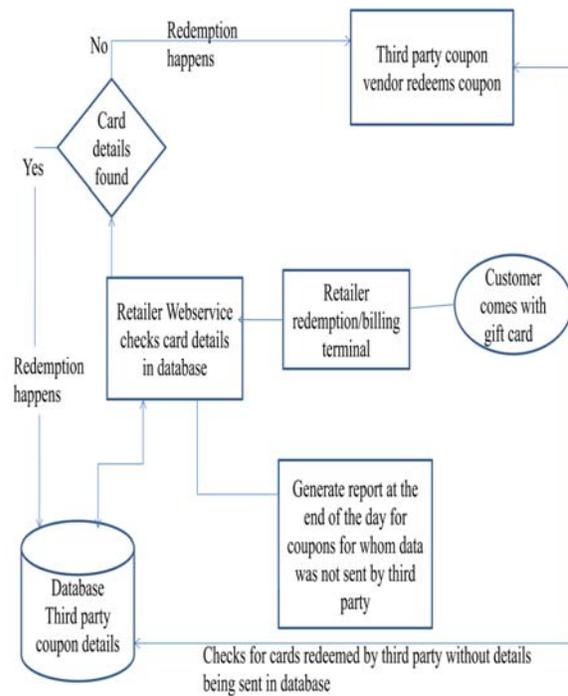


Figure-1. Coupon validation process diagram.

Following checks will be made by the Webservice to process the coupons:

a) Webservice first checks the coupon details in the local Retailer database; if details found, processes the coupon and redemption happens much faster almost real-time thereby reducing customer wait time at the billing terminal.

b) If a customer brings a coupon that is issued by third-party vendor very recently which is not yet updated in local database - in such scenarios, Webservice will first do step a) and after not finding coupon details with step a), will then route the validation process to check directly in the third-party vendor database and processes the redemption

Below process flow diagram depicts both the scenarios a) and b)

In addition, as depicted below in the process diagram, at any time, Retailer using the local database generates liability reports that provide statements of dues from each of the third-party coupon vendors - this makes settlements of dues with third-party vendors easier and efficient for the Retailer.

Software requirements

FRONT END	HTML,CSS
BACK END	MY SQL, JAVA
Other tools	Apache Tomcat 5.0, Tomcat 5.0, Eclipse IDE

**Hardware requirements**

Hardware components	Required tools
Processor	Intel i3 or above
Operating system	All operating systems having Tomcat
Hard Disk	1.0 GB
RAM	512 MB

5. CONCLUSIONS

This paper particularly looks at the issues of today's Retailer systems integrating with multiple complex third-party vendor coupons systems for validation and redemption of the coupons. The solution proposed is to make the integration process simple by building a local retailer database that maintains consolidated data of coupons from multiple third-party vendors. This paper explains how the integration of Retailer System through a Webservice to their local database makes the integration faster, real-time and simple, thereby enhancing the customer satisfaction and experience. The solution also enables Retailer greater flexibility in generating liability reports of each third-party coupon vendor through its local database at any time making the dues settlement much easier for the Retailer with the third-party vendors.

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