ARTS XML Digital Receipt Technical Specification

Version 3.1.0

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1. Introduction

This document serves as the ARTS XML Digital Receipt Work Team Charter and executive overview document. It has been developed following the, ARTS XML Development Process.

2. Team Mission

To develop an updated version of the Digital Receipt XML schema which addresses the needs of current technologies in the Retail environment which call for a fully paperless transaction process at the Point-of-Sale. Such current technologies can be described as Mobile Payments, digital couponing as well as customer loyalty applications. The purpose of the new version of the Digital Receipt XML Schema is to provide support for different use-cases in the described environments while taking into account the current ARTS XML schemas.

3. Business Justification

3.1 What is a Digital Receipt?

A Digital Receipt is an image of the information on the paper receipt provided to the customer and not a complete log of a retail transaction. This same document may be used by the retailer or any other entity to confirm and validate the occurrence of such a transaction between the consumer and the retailer. Consumers may also use the information contained in a digital receipt to track purchases, manage finances and taxes as well. This same information may be used by marketers in order to target customers based on previous purchase behavior.

Different ways to define a digital receipt:

- Electronic version of traditional paper receipt deliverable via multiple protocols (e-mail, TCP/IP, WAP, Infrared port or Bluetooth for easy storage, retrieval and analysis
- A personalized and interactive computer document that contains complete transaction data more than paper receipts
- An extensible XML message allowing third-parties to easily integrate with applications
- The digital receipt is a secure transaction that is only issued with the authorization of the consumer

3.1.1 What is not a Digital Receipt?

The presentation component is managed by the application which either generates an e-mail or displays the Digital Receipt on the customer's device. The Digital Receipt only provides the data to support the presentation but does not describe how the information is presented.

3.2 What are the Benefits of a Digital Receipt?

A Digital Receipt has multiple benefits to different parties within the retail ecosystem. These parties include business operations within the retailer's business organization, the consumer, marketers, and third party application vendors (which benefit from receiving customer purchase data).

Benefits to Merchants:

- Cost: Can be applied to all industries as a lower cost alternative to using paper receipts
- Coupon tracking and settlement
- Reduced Fraud on returns and exchanges
- Green Initiative

Benefits to Consumers:

- Easy access to information through multiple interfaces

- Proof of purchase for taxes, returns, rebates
- Management of expenses and budgeting
- Receive targeted information about products purchased
    - Warranty
    - Recalls
    - Coupons/Rebates

Benefits to Marketers:

- Targeted Marketing
- Coupon Redemption tracking & Settlement
- Reduced Coupon Fraud

Benefits to 3rd Party budgeting/expenses management applications:

- Better management of transaction processes including returns, credit card disputes and rebate authorizations

3.3 Benefits of Digital Receipt as compared to POSLog

The ARTS Data Model and ARTS XML Schemas are all taken as elements of a data processing system *within* a retail enterprise. As such, the primary usage of the information is processing by other applications within the enterprise. In the case of the POSLog, this is documented and analyzed as a set of publish-subscribe use cases. A point-of-sale (POS) system, or equivalent, would publish transactions with the following applications considered as candidate subscribers:

- Sales audit
- Time and attendance
- Item movement (inventory)
- Labor scheduling
- In-store accounting
- Promotion tracking
- Customer frequency, loyalty, clienteling
- Authorization
- Security audit
- Data warehousing
- Return validation (post voids, repairs, etc.)
- Forecasting

Consideration was given to the possibility of providing separate XML interfaces for each subscriber. However it was decided to provide a common XML interface embracing the requirements of all of the applications because this was consistent with the historical common practice of integrating applications through POS transaction log files. It is noted that audit, security, labor productivity and activity analysis applications are very demanding of detail content.

The Digital Receipt schema was developed with a substantially different context and usage in mind. The result, therefore, is quite different, even though the basic subject is the same – the recording of items and payments in a retail sales transaction.

The Digital Receipt structure is a derived subset of POSLog by using actual paper receipts as a point of reference. Indeed, the XML Digital Receipt structure and content has been ***kept*** closely aligned with the structure of a conventional paper receipt.

The content of the POSLog is primarily targeted for application processing. Many of these elements are not found on examples of paper receipts and therefore largely deleted from the Digital Receipt Schema, thus further simplifying the structure.

Application processing wasn't completely forsaken, of course, or the Digital Receipt could have been represented in HTML rather than XML. In particular, the applications to be supported by a Digital Receipt include:

- Consumer promotion delivery
- Marketing and merchandising based on items sold
- Proof of purchase for returns, rebates, and manufacturer registration
- Payment dispute resolution
- Personal finance applications, such as Quicken and MS Money
- Small business finance applications, such as QuickBooks

These applications require only essential information on the net result of the transaction, i.e. what items were purchased and how the transaction was settled. Items entered in error, and then corrected with voiding lines, are quickly disappearing even from paper receipts, and are not to be included in XML Digital Receipts!

The merchant and store contextual data necessary to identify the source were added explicitly in the Digital Receipt schema, as were descriptive text elements needed to render a receipt image outside of the context of the data processing environment of the retail enterprise.

The Digital Receipt is also envisioned to be applicable in non-traditional retail channels, so structures were added for catalogue and internet transactions. Indeed, one benefit of the Digital Receipt is its potential for channel integration: a common Digital Receipt can be provided all channels, and a receipt from one channel can include links and promotions for all others.

Finally, the Digital Receipt is envisioned as a medium for communicating with consumers, so the schema includes links (URLs) for integration with services and

promotions when viewed by the consumer. These can include item-level links subsidized by consumer goods manufacturers – a lucrative opportunity.

Digital Receipt is a selective subset of POSLog chosen for the specific needs of a Receipt. As such the schema is smaller and more agile. Resulting in a smaller memory footprint and reduced processing needs. Further, its size simplifies rendering a requirement and an important asset for this standard.

4. Abstract

4.1 Overview

4.1.1 Who are the Digital Receipt Users

Typically, digital receipt users within the retail ecosystem include the following groups:

- **Issuer**: merchants, financial institutions, manufacturers and other industries that provide the digital receipt to customers
  - Other payment forms (mobile operators)
  - Offline and Online merchants
- **Recipient**: purchaser who authorizes issuing and receiving of the digital receipt
  - Retail customers (consumer, business/organizations)
  - Retail vendors
- **Third Parties**: agents or businesses using or processing Digital Receipt
  - Expense Management
  - Taxes
  - Expense Reimbursement
  - Credit Card Dispute Resolution
  - Mail-in Rebates & Warranties

4.2 Retail Model Interfaces/Architectural Model

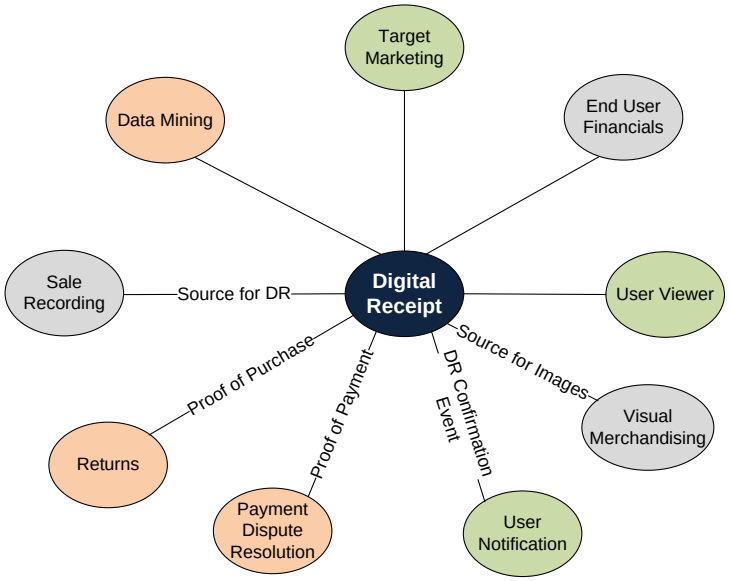


Figure 1: Digital Receipt Interfaces

- Targeted Marketing - between the customer and another third party system (cell phone company) - Marketing and merchandising based on items sold
- Data Mining
- End User Financials - Personal finance applications, such as Quicken and MS Money
- Sales Recording - Small business finance applications, such as QuickBooks
- User Viewer
- Returns - Proof of purchase for returns, rebates, and manufacturer registration
- Payment Dispute Resolution -
- Visual Merchandising - Consumer promotion delivery
- User Notification

4.3 Business Process Model

The following business process models are designed to provide context with respect to where Digital Receipt fits within the sales and returns processes in and outside of the retailer's network.

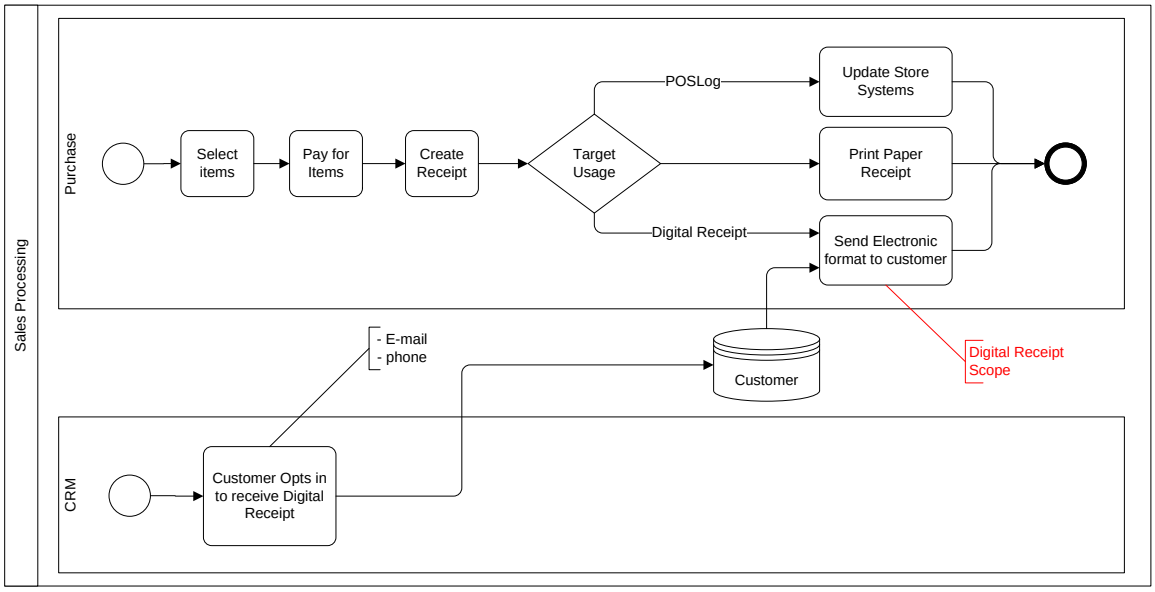


Figure 2: Digital Receipt Sales BPMN

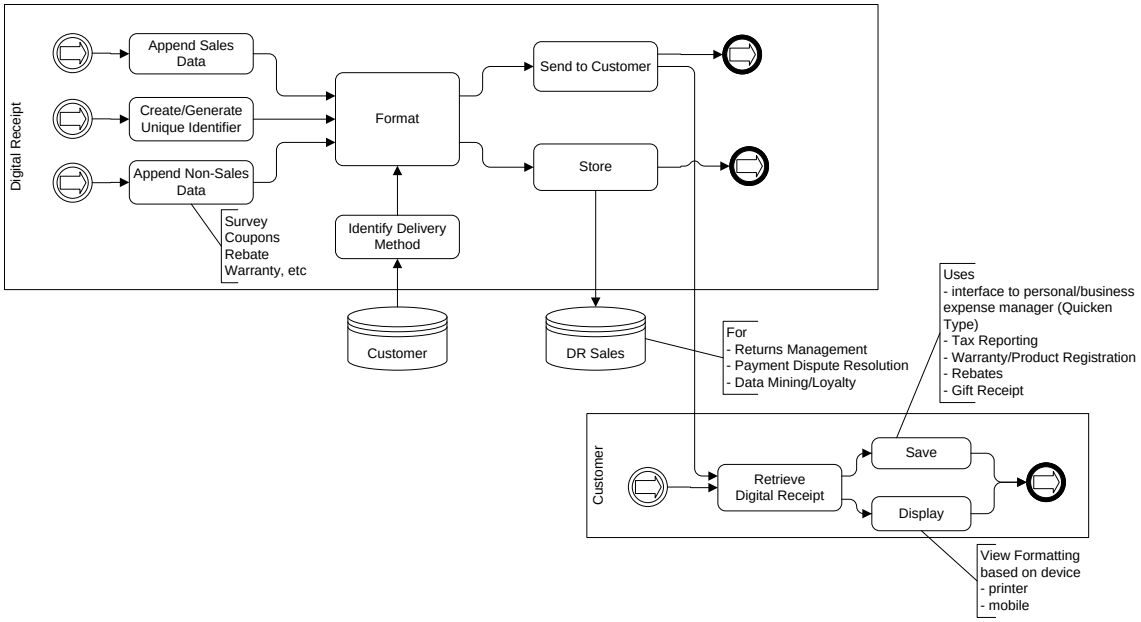


Figure 3: Digital Receipt BPMN

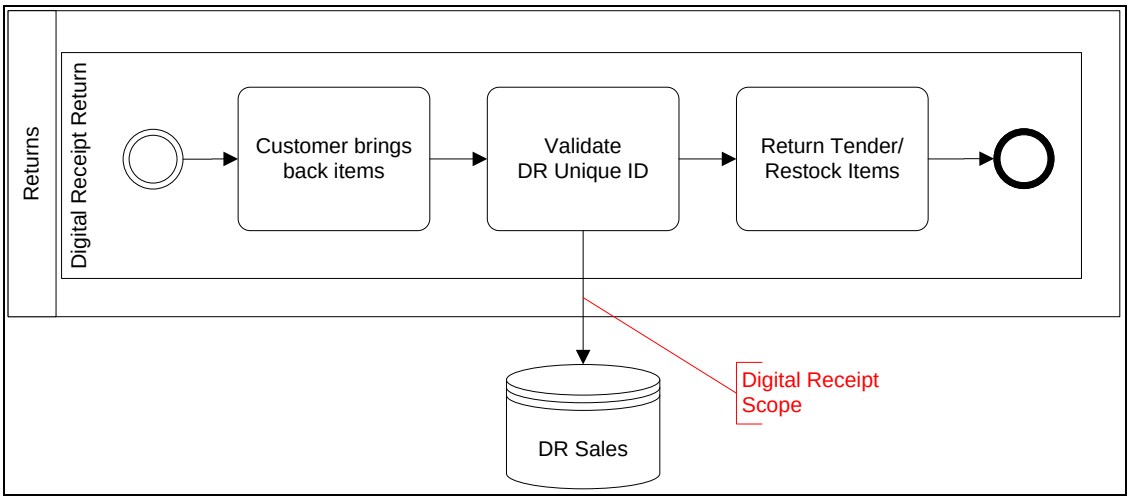


Figure 4: Digital Receipt Return BPMN

4.4 Business Scope for V1.0

The structure of the schema uses the hierarchical and sequential nature of XML – and indeed its document-oriented SGML legacy – to model a paper receipt document as directly and simply as possible while supporting the following essential business goals (use cases):

- Support simple XSLT rendering to HTML for consumer viewing and promotion delivery
- Support retail channel integration and promotion through a common receipt with embedded HTML images and links.
- Provide a foundation for proximity electronic payment receipts.
- Facilitate marketing and merchandising based on items sold.

- Provide proof of purchase for returns, rebates, and manufacturer registration.
- Support payment dispute resolution.
- Support automated input to personal finance applications, such as Intuit Quicken and Microsoft Money through an Open Financial Exchange (OFX) messaging infrastructure.
- Support automated input to small business finance applications, such as Intuit QuickBooks.

These applications require only essential information on the net result of the transaction – what items were purchased and how the transaction was settled. Items entered in error and then corrected with voiding lines are not included – the Digital Receipt is not intended to support the audit functions of a journal.
Secure infrastructures, supporting authentication and non-repudiation, are beyond the scope of this specification, but will be required to fully support proof-of-purchase andpayment dispute resolution applications. [Note that there is an open issue regarding the inclusion of a simple authentication mechanism in the base schema.]

4.5 In Scope for Version 2.0

- Establish a naming convention for the Digital Receipt Message (example file extension) to allow easy identification by client applications, such as an iPhone app.
- Schema Updates
  - Coupons and Loyalty (as used within the context of the redemption during the purchasing process)
  - Payments
  - PCI - DSS / Security
  - Customer Identification
  - Return/Exchange Policy definition
  - Data Validation
  - Third Party applications (Personal Expense Management Software)
  - Item Sub info (Bottle Return, Weight, etc…)
  - SOA Service – Review how Digital Receipt Schema applies to SOA work
  - Customer Interface – minimal set of information necessary to inform the customer as to the purchases they made.
  - Display specifications (XSLT)

- Support for Mobile Payments
  - Identify specifics – Get comments from the Handset manufacturers and Mobile Payment organizations

- Interoperability with other Schemas
  - Links to POSLog/Data Model
  - Backward compatibility where possible but the schema will be brought into alignment with

  - ARTS XML
  - SOA Best Practices
  - Data Dictionary
  - Common Data

- Other
  - Mapping from POSLog to Digital Receipt
  - Stored Value
  - Retail transactions (vs. customer order transaction)
  - Bug Fixes

4.6 In Scope for Version 3.0

Bring Digital Receipt in alignment with POSLog V6.0.0. This makes Digital Receipt the “Base Class” for POSLog V6.0.0.

4.7 Out of Scope for Version 3.0

- Invoicing
- Layaway/ Cross-channel transaction -> customer order transaction (relevant once tendered and delivered) (airline ticket purchase scenario)
- Digital Coupons (as used within the context of giving a coupon to the customer [printed on the bottom of the receipt]). The current specification is a placeholder for the full digital coupon. Digital Coupon definition is under GS/1.

5. Referenced Documents

- **ARTS Technical Committees Development Process V6.4**
- **ARTS XML Extending Schemas Technical Report V2.1**
- **ARTS XML Best Practices V2.2**
- **ARTX XML Domain Modeling Technical Report V1.0.0**
- **ARTS SOA Best Practices Technical Report Version 1.0**
- **ARTS POS RFP V2.0 20070403.xls**

6. ARTS Common Header

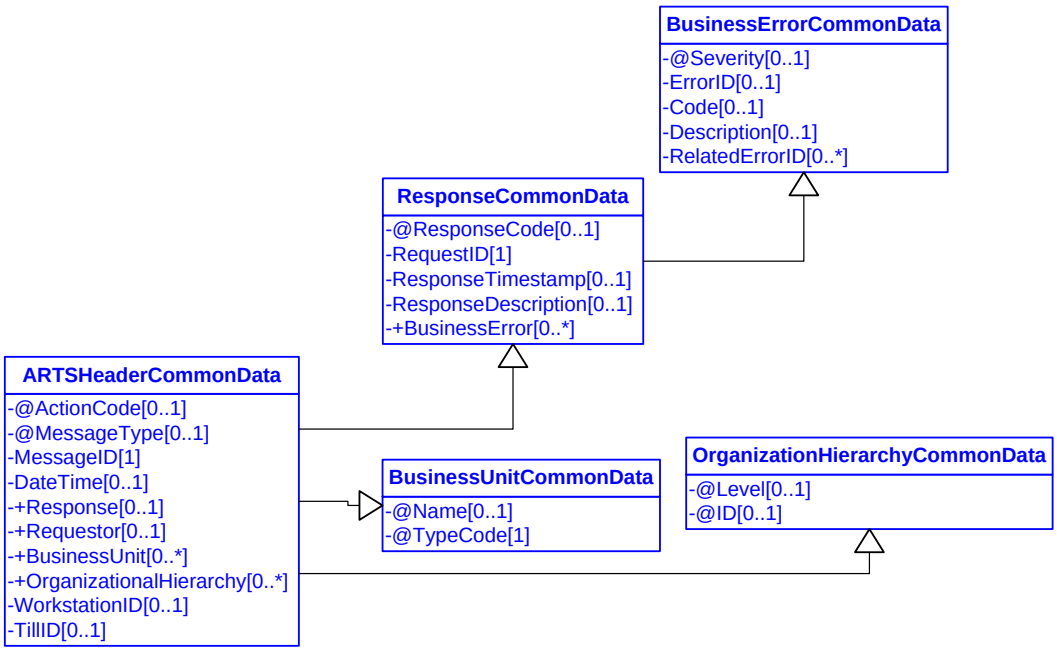


Figure 5: ARTS Common Header Domain View

The ARTS common header is used in all service name schemas. It provides the ability to set session level information and return business error information in one standard format to all SOA implementations.

Figure 6: ARTS Common Header Representation

Since this structure is common to all service name schemas, it will not be replicated below. In place of the details, the attached box will be used to represent this complex type structure.

7. Use Case: Consumer Viewing

Third Party Receipt Viewing

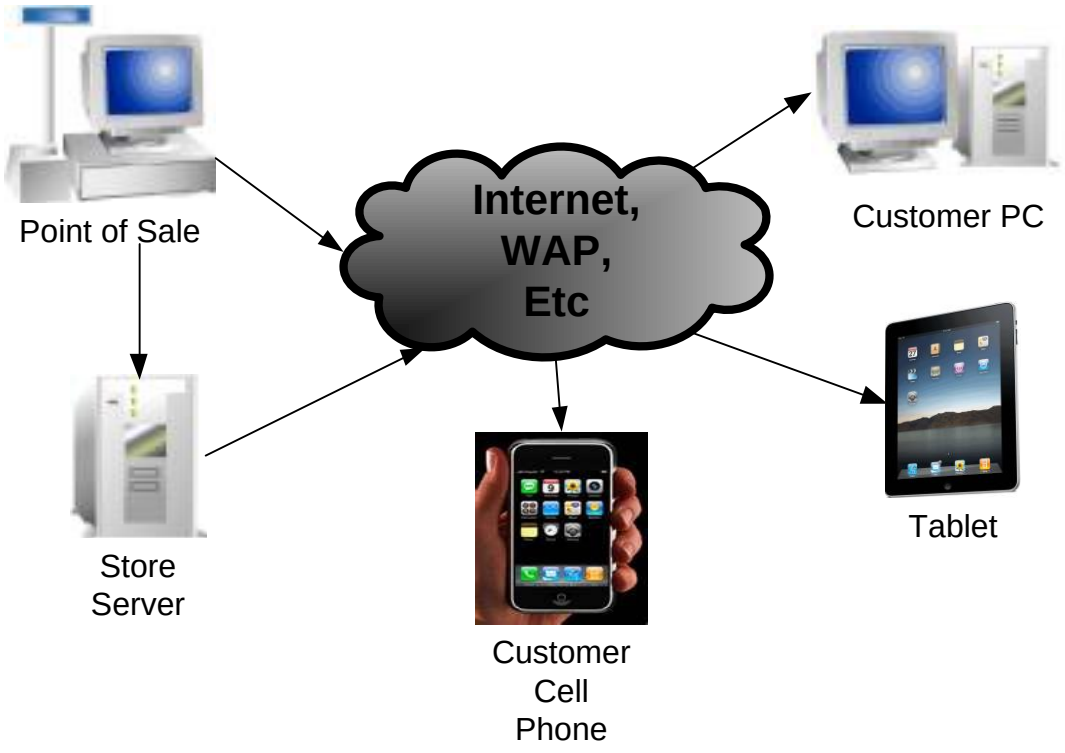


Figure 7: Customer Viewing

The Digital Receipt document provides the information necessary to support rendering into a device-dependent viewable format such as HTML or WML, and the resulting file will be delivered to the customer (recipient). The file includes static information from the digital receipt and possibly promotional text and/or hyperlinks designed to attract the customer into a return visit to the merchant (issuer).

The delivery mechanism can range from simple e-mail where the translation is performed at the issuer's site to digital receipt storage where the translation is performed on a server as needed.

7.1 Scenario: Customer Purchases an Item

Brief Description

The customer purchases an item and has the receipt sent to their e-mail address or phone.

Scenario Description

Suzy purchases a blue shirt for $5.00 at Her Store with cash and has the receipt sent to suzy@email.com. Suzy then prints the receipt.

Data

Receipt Image

Type code – HTML, PDF, JPG

Binary data and/or

Receipt Line 1..*

Customer Identifier (email)

7.1 ARTS XML Instance Document – Customer Purchases an Item:

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3"  MinorVersion="0"
   FixVersion="0">
   <Transaction  >
      <BusinessUnit>
         <UnitID Name="Her Store">100</UnitID>
      </BusinessUnit>
      <Logo LogoFormat="PDF">
         <FileName>www.myreceipts.com/20101225</FileName>
      </Logo>
      <SequenceNumber>50</SequenceNumber>
      <POSLogDateTime>2006-05-04T18:13:51.0Z</POSLogDateTime>
      <ReceiptDateTime>2006-05-04T18:13:51.0Z</ReceiptDateTime>
      <ReceiptNumber>50</ReceiptNumber>
      <ReceiptImage>
         <ReceiptLine>Blue Shirt $5.00</ReceiptLine>
         <ReceiptLine>Total $5.00</ReceiptLine>
         <ReceiptLine>Tender $5.00</ReceiptLine>
      </ReceiptImage>
      <RetailTransaction>
         <LineItem>
            <Sale ItemType="Stock">
               <ItemID Name="Blue Shirt" Type="SKU">1010</ItemID>
               <ExtendedAmount>5.00</ExtendedAmount>
            </Sale>
            <SequenceNumber>1</SequenceNumber>
         </LineItem>
         <LineItem>
            <Tender>
               <Amount>5.00</Amount>
            </Tender>
            <SequenceNumber>2</SequenceNumber>
         </LineItem>
         <Total TotalType="TransactionGrossAmount">5.00</Total>
         <Customer>
            <CustomerID>0101</CustomerID>
            <EMail>
```

```
            <EMailAddress>suzy@email.com</EMailAddress>
          </EMail>
        </Customer>
      </RetailTransaction>
   </Transaction>
</DigitalReceipt>
```

7.1 ARTS XML Example XML Instance Document – Customer Purchases an Item showing an embedded logo:

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
   FixVersion="0">
   <Transaction  >
      <BusinessUnit>
         <UnitID Name="Her Store">100</UnitID>
      </BusinessUnit>
      <Logo LogoFormat="PDF">
         <FileName>www.myreceipts.com/20101225</FileName>
      </Logo>
      <SequenceNumber>50</SequenceNumber>
      <POSLogDateTime>2006-05-04T18:13:51.0Z</POSLogDateTime>
      <ReceiptDateTime>2006-05-04T18:13:51.0Z</ReceiptDateTime>
      <ReceiptNumber>50</ReceiptNumber>
      <ReceiptImage>
         <ReceiptLine>Blue Shirt $5.00</ReceiptLine>
         <ReceiptLine>Total $5.00</ReceiptLine>
         <ReceiptLine>Tender $5.00</ReceiptLine>
      </ReceiptImage>
      <RetailTransaction>
         <LineItem>
            <Sale ItemType="Stock">
               <ItemID Name="Blue Shirt" Type="SKU">1010</ItemID>
               <ExtendedAmount>5.00</ExtendedAmount>
            </Sale>
            <SequenceNumber>1</SequenceNumber>
         </LineItem>
         <LineItem>
            <Tender>
               <Amount>5.00</Amount>
            </Tender>
            <SequenceNumber>2</SequenceNumber>
         </LineItem>
         <Total TotalType="TransactionGrossAmount">5.00</Total>
         <Customer>
            <CustomerID>0101</CustomerID>
            <EMail>
               <EMailAddress>suzy@email.com</EMailAddress>
            </EMail>
         </Customer>
      </RetailTransaction>
   </Transaction>
</DigitalReceipt>
```

8. Use Case: Proximity Electronic Receipts

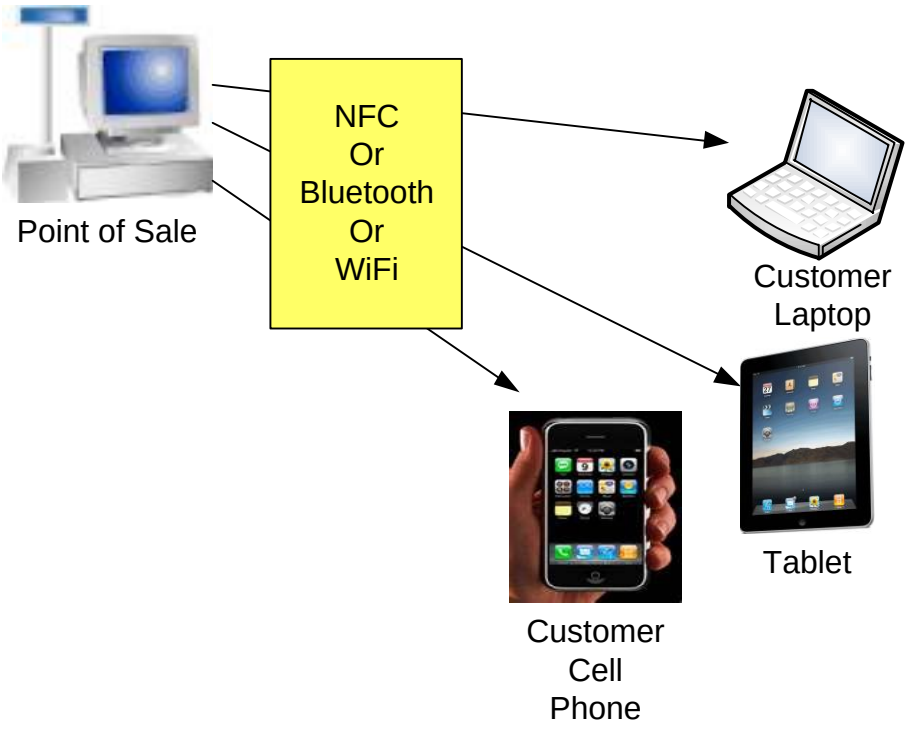


Figure 8: Proximity Electronic Payment Receipts

The Digital Receipt document will be sent electronically to the consumer's (recipient's) device for later review. Delivery mechanisms include, but are not limited to, IrDA transmission, Bluetooth or Wi-Fi. Recipient devices can include cell phones, PDAs, laptop computers, etc.

8.1 Scenario: Customer pays with mobile phone and receives receipt directly on phone through RFID

Brief Description

Customer pays using mobile phone and POS returns a receipt after the transaction is completed with customer signature. The customer views the receipt on their phone including the payment authorization information and digital signature.

Scenario Description

Suzy purchases a new purse for €35 and pays with her SMS account at Her Favorite Store. The receipt is sent to her phone at (555)123-4567.

Data

- Store where purchased
    - Name

    - Address
    - Phone number
    - Logo
- Customer's name, contact preference
- Customer Identifier
- Transaction Date
- Item's purchased
    - Item quantity
    - Item price
- Total Amount
- Tax
- **Tender – Mobile Wallet**
    - **Digital Signature**
    - **Authorization Code**
- Total

8.1 ARTS XML Instance Document – Customer pays with mobile phone and receives receipt directly on phone through RFID:

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
   FixVersion="0">
   <Transaction  >
      <BusinessUnit>
         <UnitID Name="My Favorite Store">100</UnitID>
         <Address>
            <TypeCode>RetailStore</TypeCode>
            <AddressLine TypeCode="Street">123 Main Street</AddressLine>
            <City>Mustang</City>
            <Territory>Oklahoma</Territory>
            <PostalCode>12345</PostalCode>
         </Address>
         <Telephone>
            <AreaCode>555</AreaCode>
            <LocalNumber>1234567</LocalNumber>
         </Telephone>
      </BusinessUnit>
      <Logo LogoFormat="GIF">
         <FileName>My Favorite Store.gif</FileName>
      </Logo>
      <SequenceNumber>50</SequenceNumber>
      <POSLogDateTime>2006-05-04T18:13:51.0Z</POSLogDateTime>
```

```
        <RetailTransaction>
          <LineItem>
              <Sale>
                <ItemID Name="Fancy Purse">1234124</ItemID>
                <ExtendedAmount Currency="EUR">35.00</ExtendedAmount>
              </Sale>
            <SequenceNumber>1</SequenceNumber>
          </LineItem>
          <LineItem>
              <Tender TenderType="Mobile">
                <Amount>35.00</Amount>
                <Authorization>
                  <AuthorizationCode>asdfasdf</AuthorizationCode>
                  <Signature>asdfasdf</Signature>
                </Authorization>
              </Tender>
            <SequenceNumber>2</SequenceNumber>
          </LineItem>
          <Total TotalType="TransactionGrossAmount">35.00</Total>
          <Customer ContactPreference="Phone">
            <CustomerID>CustomerID8</CustomerID>
            <Name><Name>Suzy Queue</Name></Name>
            <TelephoneNumber>
              <AreaCode>555</AreaCode>
              <LocalNumber>1234567</LocalNumber>
            </TelephoneNumber>
          </Customer>
        </RetailTransaction>
    </Transaction>
</DigitalReceipt>
```

9. Use Case: Marketing and Merchandising

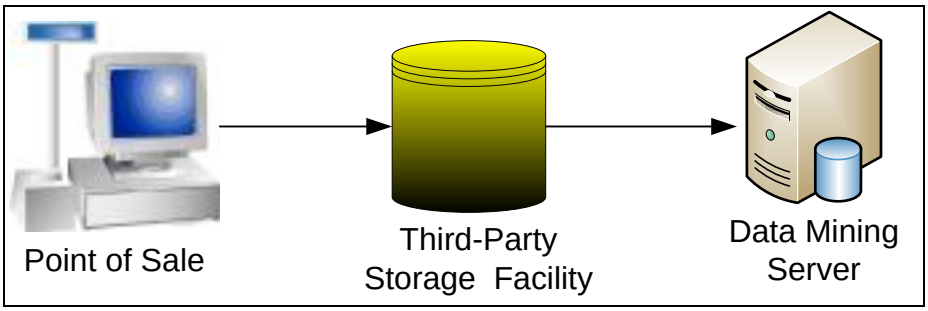


Figure 9: Marketing and Merchandising

The Digital Receipt document will be sent to a storage facility for later data mining in search of marketing and merchandising trends. The intent for this research is to be cross-merchant so specific merchant storage models are not an issue.

9.1 Scenario: Automatic Shopping List

Brief Description

Use Digital Receipt to create an automatic shopping list.

Scenario Description

Fred was preparing to go grocery shopping and retrieved his shopping list from his computer.

Data

Basic Receipt data

Transaction Date

Product Info

- UPC
- Quantity

9.1 ARTS XML Instance Document – Automatic Shopping List

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
   FixVersion="0">
   <Transaction >
      <SequenceNumber>50</SequenceNumber>
      <POSLogDateTime>2006-05-04T18:13:51.0Z</POSLogDateTime>
         <RetailTransaction>
            <LineItem>
                  <Sale >
                     <ItemID Name="Bread" Type="SKU">123</ItemID>
```

```
                <ExtendedAmount>1.50</ExtendedAmount>
                <Quantity>3</Quantity>
              </Sale>
            <SequenceNumber>1</SequenceNumber>
          </LineItem>
        </RetailTransaction>
    </Transaction>
</DigitalReceipt>
```

9.2 Scenario: Automatic Shopping List based on Perishable items

Brief Description

Use Digital Receipt to create an automatic shopping list based on perishable items.

Scenario Description

Data

Basic Receipt data

Transaction Date

Product Info

- UPC
- Quantity
- Expiration Date

9.2 ARTS XML Instance Document – Automatic Shopping List based on Perishable Items

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
   FixVersion="0">
   <Transaction  >
      <SequenceNumber>50</SequenceNumber>
      <POSLogDateTime>2006-05-04T18:13:51.0Z</POSLogDateTime>
      <RetailTransaction>
         <LineItem>
            <Sale>
               <ItemID Name="Bread" Type="SKU">123</ItemID>
               <ExtendedAmount>1.50</ExtendedAmount>
               <Quantity>3</Quantity>
            </Sale>
            <SequenceNumber>1</SequenceNumber>
            <EndDateTime>2006-05-04T18:13:51.0Z</EndDateTime>
         </LineItem>
      </RetailTransaction>
   </Transaction>
```

```
</DigitalReceipt>
```

9.3 Scenario: Receiving a coupon

Brief Description

Use Digital Receipt to offer relevant coupons to customer

Scenario Description

My Special Store sent Joe's phone a coupon for 10% off a new set of headphones that regularly sale for $100.00 included in the receipt along with a MP3 player purchase.

Data

Basic Receipt data

Transaction Date

Item info

- UPC
- Price

Coupon Information

- Logo
- Barcode/GTIN/Coupon Code
- Description
- Expiration Date

9.3 ARTS XML Instance Document – Receiving Digital Store Receipt with a Coupon included

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
   FixVersion="0">
   <Transaction  >
      <BusinessUnit>
         <UnitID Name="My Special Store">UnitID0</UnitID>
      </BusinessUnit>
      <Logo LogoFormat="EPS">
         <LogoBinary>ZGVmYXVsdA==</LogoBinary>
      </Logo>
      <SequenceNumber>50</SequenceNumber>
      <POSLogDateTime>2006-05-04T18:13:51.0Z</POSLogDateTime>
      <RetailTransaction>
         <!-- MP3 player purchased -->
         <LineItem>
            <Sale>
               <ItemID>123</ItemID>
               <Description>MP3 Player</Description>
```

```
            <ExtendedAmount>20.00</ExtendedAmount>
         </Sale>
         <SequenceNumber>1</SequenceNumber>
      </LineItem>
      <!-- Pay for the MP3 Player -->
      <LineItem>
         <Tender>
            <Amount>20.00</Amount>
         </Tender>
         <SequenceNumber>2</SequenceNumber>
      </LineItem>
      <!-- Get The Coupon -->
      <LineItem>
         <Discount MethodCode="Coupon">
            <SequenceNumber>1</SequenceNumber>
            <Percent Action="Subtract">10.00</Percent>
            <ExpirationDate>2006-05-04</ExpirationDate>
            <PromotionID TypeCode="GTIN">12345678901234</PromotionID>
            <!-- Ties the coupon to a specific item -->
            <ItemLink>2</ItemLink>
         </Discount>
         <SequenceNumber>1</SequenceNumber>
      </LineItem>
      <!-- The Headphones to which the coupon applies -->
      <LineItem>
         <Sale>
            <ItemID Type="GTIN">456343454356456</ItemID>
            <Description>Headphones</Description>
            <RegularSalesUnitPrice>100.00</RegularSalesUnitPrice>
         </Sale>
         <SequenceNumber>2</SequenceNumber>
      </LineItem>
      <Customer>
         <CustomerID>CustomerID8</CustomerID>
         <Name>
            <Name>Joe Cool</Name>
         </Name>
      </Customer>
   </RetailTransaction>
</Transaction>
</DigitalReceipt>
```

9.4 Scenario: Completing survey embedded in Digital Receipt

Brief Description

Use Digital Receipt to complete a survey that is embedded in the Digital receipt

Scenario Description

Suzy bought a shirt for $5.00 at Her Favorite Store and was asked to fill out a survey about her experience.

Data

Basic Receipt data

Transaction Date

Survey

Link to survey

Description

Language

Survey Code

9.4 ARTS XML Instance Document – Completing survey embedded in Digital Receipt

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
   FixVersion="0">
   <Transaction  >
      <BusinessUnit>
         <UnitID Name="Her Favorite Store">ID1</UnitID>
      </BusinessUnit>
      <SequenceNumber>50</SequenceNumber>
      <POSLogDateTime TypeCode="Message">2006-05-04T18:13:51.0Z</POSLogDateTime>
      <ReceiptDateTime>2006-05-04T18:13:51.0Z</ReceiptDateTime>
      <ReceiptNumber>999</ReceiptNumber>
      <RetailTransaction>
         <LineItem>
            <Sale>
               <ItemID Name="Shirt">100</ItemID>
               <ExtendedAmount Currency="USD">5.00</ExtendedAmount>
            </Sale>
            <SequenceNumber>1</SequenceNumber>
         </LineItem>
         <Customer>
            <CustomerID>CustomerID8</CustomerID>
         </Customer>
         <Survey SurveyLink="www.survey.com">
            <SurveyCode>123</SurveyCode>
         </Survey>
      </RetailTransaction>
   </Transaction>
</DigitalReceipt>
```

9.5 Scenario: Embedded Rebate information

Brief Description

Include rebate information in Digital Receipt

Scenario Description

Fred Jones bought a new laptop for $250 at the Best Electronics Store and got a $20.00 rebate from the manufacturer.

Data

Basic Receipt data

Transaction Date

Item info

Rebate

ItemLink

Rebate ID

Rebate info (set as an extension for now but more details will be added in the next release in conjunction with the Data Model update for Rebate support)

9.5 ARTS XML Instance Document - Embedded Rebate information:

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
   FixVersion="0">
   <Transaction  >
      <BusinessUnit>
         <UnitID Name="Best Electronics Store">1</UnitID>
      </BusinessUnit>
      <SequenceNumber>123</SequenceNumber>
      <POSLogDateTime TypeCode="Message">2006-05-04T18:13:51.0Z</POSLogDateTime>
      <ReceiptDateTime>2006-05-04T18:13:51.0Z</ReceiptDateTime>
      <RetailTransaction>
         <LineItem>
            <Sale>
               <ItemID Name="Laptop">5551234</ItemID>
               <ExtendedAmount Currency="USD">250.00</ExtendedAmount>
            </Sale>
            <SequenceNumber>1</SequenceNumber>
         </LineItem>
         <LineItem>
            <Rebate>
               <RebateID>456</RebateID>
               <ExtendedRebateAmount Currency="USD">20.00</ExtendedRebateAmount>
               <ItemLink>1</ItemLink>
            </Rebate>
            <SequenceNumber>2</SequenceNumber>
         </LineItem>
         <Total CurrencyCode="USD">250.00</Total>
         <Customer>
            <CustomerID>CustomerID8</CustomerID>
         </Customer>
      </RetailTransaction>
   </Transaction>
</DigitalReceipt>
```

10. Use Case: Proof of Purchase

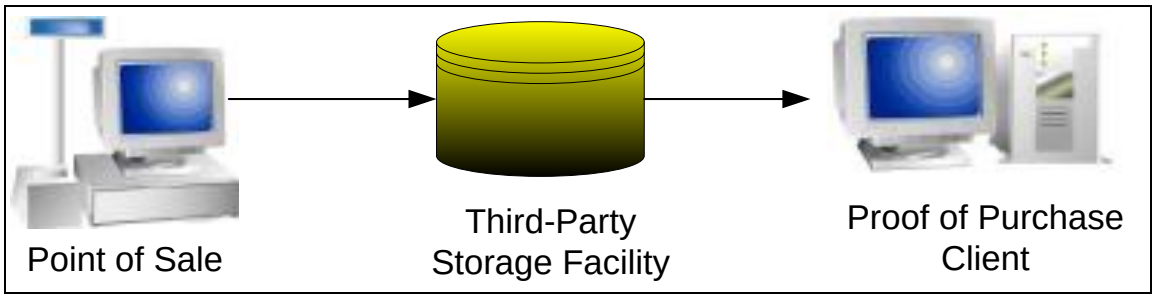


Figure 10: Proof of Purchase

The Digital Receipt document will be stored in a merchant system for later retrieval to serve as proof of purchase for the consumer. Applications of this technology include return authorization, rebate information, and manufacture registration.

Secure infrastructures, supporting authentication and non-repudiation, are beyond the scope of this work-team, but will be required to fully support proof-of-purchase applications.

10.1 Scenario: Customer needs to return an item

Brief Description

Customer returns an item with a digital receipt and merchant scans the receipt number (barcode) to pull up the original receipt.

The customer has the digital receipt stored in a smartphone app which allows displaying of the barcode.

The information ultimately is in the retailer's network for the sake of authenticity. The retailer can retrieve the data set by using the store number, transaction number, date and time from the digital receipt. But in this example they are using the bar code embedded within the digital receipt.

Scenario Description

Data

Receipt Number (barcode number)

10.1.1 ARTS XML Instance Document – Customer Needs to Return an Item (GTIN):

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
      xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
      FixVersion="0">
      <Transaction >
            <BusinessUnit>
```

```
            <UnitID>100</UnitID>
        </BusinessUnit>
        <WorkstationID>100</WorkstationID>
        <SequenceNumber>75645</SequenceNumber>
        <POSLogDateTime>2007-05-04T18:13:51.0Z</POSLogDateTime>
        <ReceiptDateTime>2006-05-04T18:13:51.0Z</ReceiptDateTime>
        <ReceiptNumber TypeCode="GTIN">124124124</ReceiptNumber>
    </Transaction>
</DigitalReceipt>
```

10.1.2 ARTS XML Instance Document – Customer Needs to Return an Item (SKU):

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
    xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
    FixVersion="0">
    <Transaction >
        <BusinessUnit>
            <UnitID>100</UnitID>
        </BusinessUnit>
        <WorkstationID>100</WorkstationID>
        <SequenceNumber>75645</SequenceNumber>
        <POSLogDateTime>2007-05-04T18:13:51.0Z</POSLogDateTime>
        <ReceiptDateTime>2006-05-04T18:13:51.0Z</ReceiptDateTime>
        <ReceiptNumber TypeCode="SKU">124124124</ReceiptNumber>
    </Transaction>
</DigitalReceipt>
```

10.2 Scenario: Customer requests a return and receives a return receipt

Brief Description

Once the return is processed, a new receipt is generated that contains the return information.

Scenario Description

Suzy Que bought a shirt ($20) and pair of shoes ($40) at Store A. She then returns the shoes and gets a return receipt.

Data

Item return information

Original receipt number → Transaction Link

Total

Tender (refund)

10.2 ARTS XML Instance Document – Customer Requests a Return and Receives a Return Receipt:

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
   FixVersion="0">
   <Transaction  TypeCode="ReturnTransaction">
      <BusinessUnit>
         <UnitID>034</UnitID>
      </BusinessUnit>
      <SequenceNumber>50</SequenceNumber>
      <POSLogDateTime>2006-05-04T18:13:51.0Z</POSLogDateTime>
      <ReceiptDateTime>2006-05-04T18:13:51.0Z</ReceiptDateTime>
      <ReceiptNumber>50</ReceiptNumber>
      <RetailTransaction>
         <LineItem>
            <Return>
               <ItemID>1234234</ItemID>
               <ExtendedAmount>40.00</ExtendedAmount>
            </Return>
            <SequenceNumber>1</SequenceNumber>
         </LineItem>
         <LineItem>
            <Tender TypeCode="Refund">
               <Amount>40.00</Amount>
            </Tender>
            <SequenceNumber>2</SequenceNumber>
         </LineItem>
         <Total>40.00</Total>
         <TransactionLink ReasonCode="Return">
            <TransactionID>888765</TransactionID>
            <BusinessUnit>100</BusinessUnit>
            <WorkstationID>1</WorkstationID>
            <BusinessDayDate>
               <Date>2006-04-04</Date>
            </BusinessDayDate>
            <SequenceNumber>3</SequenceNumber>
         </TransactionLink>
      </RetailTransaction>
   </Transaction>
</DigitalReceipt>
```

10.3 Scenario: Customer needs to exchange an item

Brief Description

Customer exchanges an item with a digital receipt and merchant scans the receipt number (barcode) to pull up the original receipt

Scenario Description

Joe wants to return a shirt and brings the digital receipt with the receipt number on his mobile phone. The store associate then scans the receipt number to retrieve the full receipt and to verify the original purchase.

Data

Receipt Number (barcode number)

10.3 ARTS XML Instance Document – Customer Needs to Exchange an Item:

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
      xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
      FixVersion="0">
      <Transaction >
            <BusinessUnit>
                  <UnitID>100</UnitID>
            </BusinessUnit>
            <SequenceNumber>75645</SequenceNumber>
            <POSLogDateTime>2007-05-04T18:13:51.0Z</POSLogDateTime>
            <ReceiptDateTime>2006-05-04T18:13:51.0Z</ReceiptDateTime>
            <ReceiptNumber TypeCode="UPC-A">124124124</ReceiptNumber>
      </Transaction>
</DigitalReceipt>
```

10.4 Scenario: Customer requests an exchange and receives a new receipt

Brief Description

Once the exchange is processed, a new receipt is generated that contains the refund or new sale information.

Scenario Description

Dick wanted to exchange a table ($40) for a cheaper one ($10). He then gets a new receipt showing the exchange and the refund ($30) he received.

Data

Item return information

Itemlink

Item sale information

Original Receipt Number → Transaction Link

Total

Tender (refund/sale)

10.4 ARTS XML Instance Document – Customer Requests an Exchange and Receives a New Receipt:

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
   FixVersion="0">
   <Transaction  >
      <BusinessUnit>
         <UnitID>034</UnitID>
      </BusinessUnit>
      <SequenceNumber>50</SequenceNumber>
      <POSLogDateTime>2006-05-04T18:13:51.0Z</POSLogDateTime>
      <ReceiptDateTime>2006-05-04T18:13:51.0Z</ReceiptDateTime>
      <ReceiptNumber>50</ReceiptNumber>
      <RetailTransaction>
         <LineItem>
            <Return>
               <ItemID>1234234</ItemID>
               <ExtendedAmount>40.00</ExtendedAmount>
               <TransactionLink ReasonCode="Return">
                  <TransactionID>888765</TransactionID>
                  <BusinessUnit>100</BusinessUnit>
                  <WorkstationID>1</WorkstationID>
                  <BusinessDayDate>
                     <Date>2006-04-04</Date>
                  </BusinessDayDate>
                  <!-- the line item in the original transaction -->
                  <SequenceNumber>2</SequenceNumber>
               </TransactionLink>
            </Return>
            <SequenceNumber>1</SequenceNumber>
         </LineItem>
         <LineItem>
            <Sale>
               <ItemID>1234</ItemID>
               <ExtendedAmount>10.00</ExtendedAmount>
            </Sale>
            <SequenceNumber>2</SequenceNumber>
         </LineItem>
         <LineItem>
            <Tender TypeCode="Refund">
               <Amount>30.00</Amount>
            </Tender>
            <SequenceNumber>3</SequenceNumber>
         </LineItem>
         <Total>30.00</Total>
      </RetailTransaction>
   </Transaction>
</DigitalReceipt>
```

11. Use Case: Credit Card Dispute Resolution

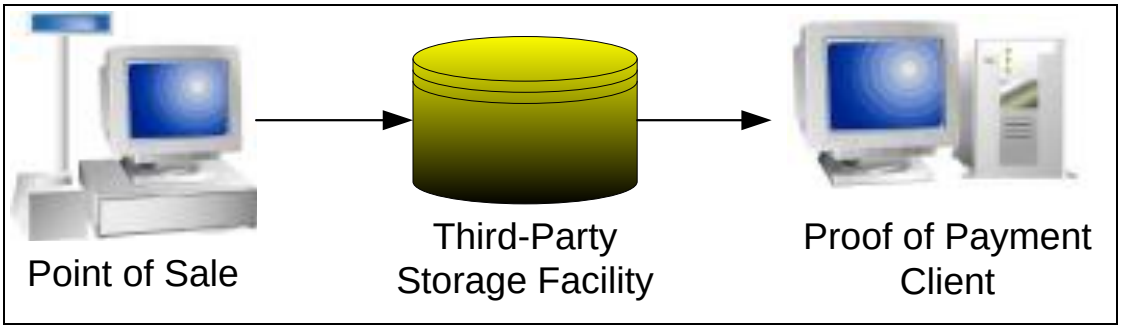


Figure 11: Credit Card Dispute Resolution

The Digital Receipt document will be stored in a merchant system for later retrieval to serve as proof of purchase to the third-party credit processor. Should a payment dispute arise, the merchant would recall the digital receipt to provide sufficient information to prove the payment was valid and authorized.

Secure infrastructures, supporting authentication and non-repudiation, are beyond the scope of this work-team, but will be required to fully support credit card dispute resolution applications.

11.1 Scenario: Customer disputes transaction amount through bank

Brief Description

Customer makes a purchase and disputes the transaction amount directly through the bank. The bank contacts the merchant in order to verify the transaction. Merchant provides a digital receipt to the bank.

Scenario Description

Joe buys a new blue shirt for $5.00 only to find out the store charged $50.00 to his credit card.

Data

Receipt Number

Transaction ID

Date/Time

Store

Total

Payment instrument

- Authorization code
- Payment amount

11.1 ARTS XML Instance Document – Customer Disputes Transaction Amount through Bank:

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
   FixVersion="0">
   <Transaction  >
      <BusinessUnit>
         <UnitID>100</UnitID>
      </BusinessUnit>
      <WorkstationID>21</WorkstationID>
      <SequenceNumber>234</SequenceNumber>
      <POSLogDateTime>2006-05-04T18:13:51.0Z</POSLogDateTime>
      <ReceiptDateTime>2006-05-04T18:13:51.0Z</ReceiptDateTime>
      <ReceiptNumber>150</ReceiptNumber>
      <RetailTransaction>
         <LineItem>
            <Sale>
               <ItemID Name="Blue Shirt">1234</ItemID>
               <ExtendedAmount>5.00</ExtendedAmount>
            </Sale>
            <SequenceNumber>1</SequenceNumber>
         </LineItem>
         <LineItem>
            <Tender>
               <Amount>5.00</Amount>
               <Authorization>
                  <RequestedAmount>50.00</RequestedAmount>
                  <AuthorizationCode>123345</AuthorizationCode>
               </Authorization>
               <CreditDebit CardType="Credit">
                  <PrimaryAccountNumber>1234</PrimaryAccountNumber>
               </CreditDebit>
            </Tender>
            <SequenceNumber>2</SequenceNumber>
         </LineItem>
         <Total TotalType="TransactionGrossAmount">5.00</Total>
      </RetailTransaction>
   </Transaction>
</DigitalReceipt>
```

12. Use Case: Automated Input to Financial Applications

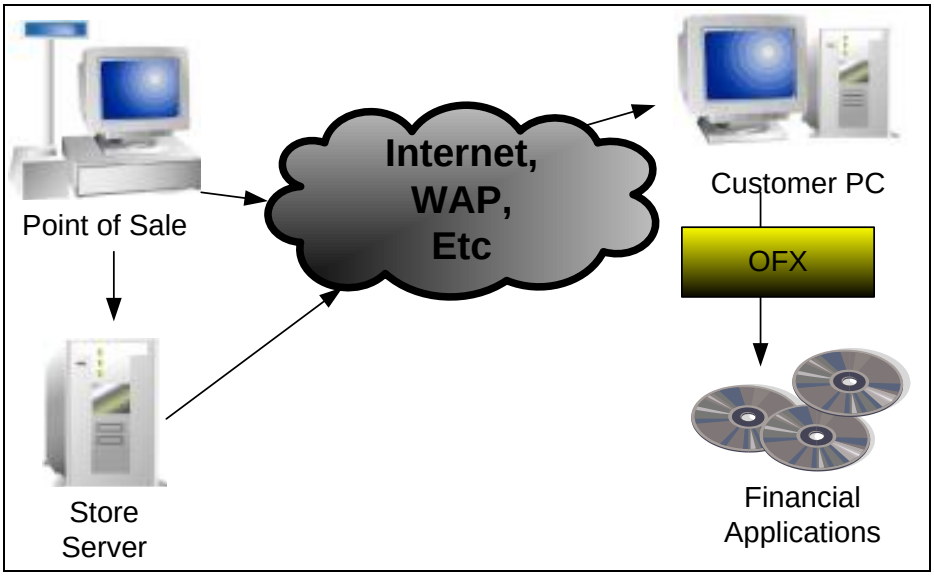


Figure 12: Automated Input to Financial Applications

The Digital Receipt document will be delivered to the consumer for later absorption into a financial application. Financial applications can include personal finance software like Quicken, MS Money or business accounting software like QuickBooks or Peachtree Accounting. This use case could support existing messaging infrastructures like Open Financial Exchange (OFX).

12.1 Scenario: Customer Records Purchases in their home through any consuming application (eg: accounting software, email client)

Brief Description

The customer purchases an item and has the receipt sent to their e-mail address or phone for putting in their home through an application such as accounting software or an email client.

Scenario Description

Suzy purchase a blue shirt for $5.00 at Her Store with cash and has the receipt sent to the mobile phone for reading by receipt reading application and transfers the receipt into their home computer through an application such as accounting software or an email client.

Data

Store where purchased

- Name
- Address
- Phone number

Logo

Customer's name, contact preference

Customer Identifier

Transaction Date

Item's purchased

Item quantity

Item price

Total Amount

Tax

Tender – cash

Total

12.1 ARTS XML Instance Document – Customer Records Purchase in their Home Software:

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
   FixVersion="0">
   <Transaction  >
      <BusinessUnit>
         <UnitID Name="Her Store">999</UnitID>
         <Address>
            <TypeCode>RetailStore</TypeCode>
            <AddressLine>123 Main Street</AddressLine>
            <City>My Town</City>
            <Territory>Territory</Territory>
            <PostalCode>5555555</PostalCode>
         </Address>
         <Telephone TypeCode="Work">
            <AreaCode>405</AreaCode>
            <LocalNumber>5551234</LocalNumber>
         </Telephone>
      </BusinessUnit>
      <Logo LogoFormat="JPG">
         <FileName>www.herstore.com/HerStore.jpg</FileName>
      </Logo>
      <SequenceNumber>100</SequenceNumber>
      <POSLogDateTime TypeCode="Message">2006-05-04T18:13:51.0Z</POSLogDateTime>
      <ReceiptDateTime>2006-05-04T18:13:51.0Z</ReceiptDateTime>
      <RetailTransaction>
         <LineItem>
            <Sale>
               <ItemID Name="Blue Shirt">123456</ItemID>
               <ExtendedAmount>5.00</ExtendedAmount>
            </Sale>
            <SequenceNumber>1</SequenceNumber>
         </LineItem>
```

```
        <LineItem>
          <Tax>
            <Amount>.25</Amount>
          </Tax>
          <SequenceNumber>2</SequenceNumber>
        </LineItem>
        <LineItem>
          <Tender>
            <Amount>5.25</Amount>
          </Tender>
          <SequenceNumber>3</SequenceNumber>
        </LineItem>
        <Total TotalType="TransactionGrandAmount">5.25</Total>
        <Customer ContactPreference="Phone">
          <CustomerID>1241234</CustomerID>
          <TelephoneNumber>
            <AreaCode>918</AreaCode>
            <LocalNumber>5551234</LocalNumber>
          </TelephoneNumber>
        </Customer>
      </RetailTransaction>
    </Transaction>
</DigitalReceipt>
```

13. Use Case: Digital Coupon/Rebate Redemption Tracking

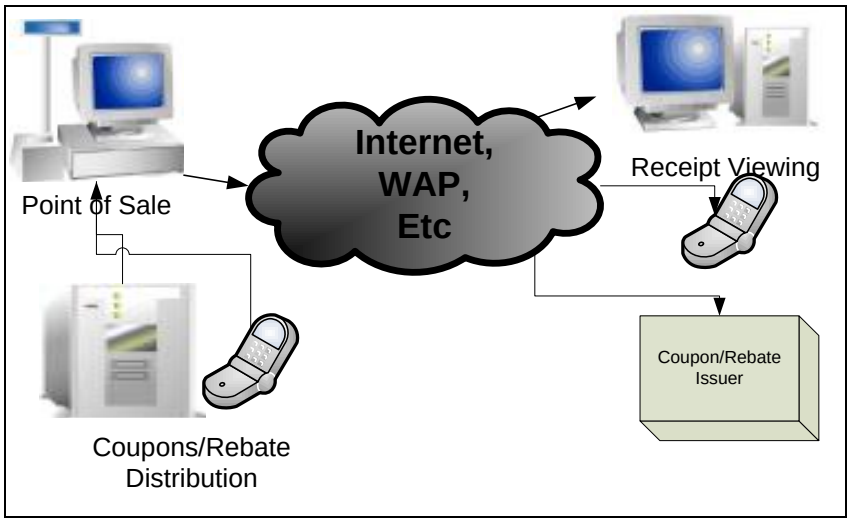


Figure 13: Digital Coupon/Rebate Redemption Tracking

The Digital Receipt document will include information about coupons applied to the transaction and digital rebate form containing information the consumer would need to receive the rebate. Coupon and rebate redemption information may be directly linked to the items purchased by the consumer.

13.1 Scenario: Viewing redeemed manufacturer coupon info

Brief Description

Use Digital Receipt to view manufacturer coupons that were applied to the transaction

Scenario Description

Tami purchased a Blue Shirt for $5.00 with a tax of $.25. She then paid for it in part with a Manufacture Coupon for $.50. She then paid with $4.75 cash.

Data

Basic Receipt data

Transaction Date

Item info

Tender

- Redeemed coupon info
  - Logo
  - Barcode/GTIN/Coupon Code
  - Description
  - ItemLink

13.1 ARTS XML Instance Document – Viewing redeemed manufacturer coupon info:

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
   FixVersion="0">
   <Transaction  >
      <BusinessUnit>
         <UnitID Name="Her Store">999</UnitID>
      </BusinessUnit>
      <Logo LogoFormat="JPG">
         <FileName>www.herstore.com/HerStore.jpg</FileName>
      </Logo>
      <SequenceNumber>100</SequenceNumber>
      <POSLogDateTime TypeCode="Message">2006-05-04T18:13:51.0Z</POSLogDateTime>
      <ReceiptDateTime>2006-05-04T18:13:51.0Z</ReceiptDateTime>
      <RetailTransaction>
         <LineItem>
            <Sale>
               <ItemID Name="Blue Shirt">123456</ItemID>
               <ExtendedAmount>5.00</ExtendedAmount>
            </Sale>
            <SequenceNumber>1</SequenceNumber>
         </LineItem>
         <LineItem>
            <Tax>
               <Amount>.25</Amount>
               <Percent>5.00</Percent>
            </Tax>
            <SequenceNumber>2</SequenceNumber>
         </LineItem>
         <LineItem>
            <Tender>
               <Amount>.50</Amount>
               <Coupon>
                  <PrimaryLabel>123423</PrimaryLabel>
               </Coupon>
            </Tender>
            <SequenceNumber>3</SequenceNumber>
            <ItemLink>1</ItemLink>
         </LineItem>
         <LineItem>
            <Tender>
               <Amount>4.75</Amount>
            </Tender>
            <SequenceNumber>4</SequenceNumber>
         </LineItem>
         <Total TotalType="TransactionGrandAmount">4.75</Total>
         <Customer ContactPreference="Phone">
            <CustomerID>1241234</CustomerID>
            <TelephoneNumber>
               <AreaCode>918</AreaCode>
               <LocalNumber>5551234</LocalNumber>
            </TelephoneNumber>
```

```
        </Customer>
      </RetailTransaction>
   </Transaction>
</DigitalReceipt>
```

13.2 Scenario: Viewing redeemed retailer coupon info

Brief Description

Use Digital Receipt to view retailer coupons that were applied to the transaction

Because this is a retailer coupon, it is pre-tax and therefore a Retail Price Modification.

Scenario Description

Hendrik found a retailer coupon in the newspaper for $.50 on anything in The Clothing Store valid on Thursday. Hendrik purchases a new shirt for $5.00 and gets $.50 off.

Data

Basic Receipt data

Transaction Date

Item info

Retail Price Modifier

Redeemed coupon info

Logo

Barcode/GTIN/Coupon Code

Description

Tender

13.2 ARTS XML Instance Document – Viewing redeemed retailer coupon info:

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
   FixVersion="0">
   <Transaction >
      <BusinessUnit>
         <UnitID Name="Her Store">999</UnitID>
      </BusinessUnit>
      <Logo LogoFormat="JPG">
         <FileName>www.herstore.com/HerStore.jpg</FileName>
      </Logo>
      <SequenceNumber>100</SequenceNumber>
      <POSLogDateTime TypeCode="Message">2006-05-04T18:13:51.0Z</POSLogDateTime>
```

```
      <ReceiptDateTime>2006-05-04T18:13:51.0Z</ReceiptDateTime>
      <RetailTransaction>
        <LineItem>
          <Sale>
            <ItemID Name="Blue Shirt">123456</ItemID>
            <ExtendedAmount>4.50</ExtendedAmount>
            <RetailPriceModifier MethodCode="Coupon">
              <SequenceNumber>1</SequenceNumber>
              <Amount Action="Subtract">.50</Amount>
              <ReasonCode>$.50 off Thursday</ReasonCode>
            </RetailPriceModifier>
          </Sale>
          <SequenceNumber>1</SequenceNumber>
        </LineItem>
        <LineItem>
          <Tax>
            <Amount>.23</Amount>
            <Percent>5.00</Percent>
          </Tax>
          <SequenceNumber>2</SequenceNumber>
        </LineItem>
        <LineItem>
          <Tender>
            <Amount>4.73</Amount>
          </Tender>
          <SequenceNumber>4</SequenceNumber>
        </LineItem>
        <Total TotalType="TransactionGrandAmount">4.73</Total>
        <Customer ContactPreference="Phone">
          <CustomerID>1241234</CustomerID>
          <TelephoneNumber>
            <AreaCode>918</AreaCode>
            <LocalNumber>5551234</LocalNumber>
          </TelephoneNumber>
        </Customer>
      </RetailTransaction>
    </Transaction>
</DigitalReceipt>
```

14. Use Case: Warranty

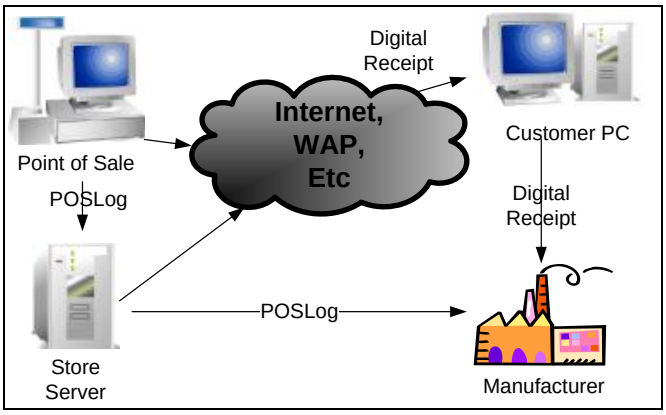


Figure 14: Warranty

When a customer purchases an item, the Digital Receipt is forwarded to their PC. The customer can then use this as a mechanism to register their purchase with the manufacturer. Whenever warranty work is necessary, the customer can then use the Digital Receipt in their communication with the manufacturer.

In some cases the Retailer posts warranty information on behalf of the customer. The retailer has access to POSLog and can use this to communicate with the manufacturer the purchase of the warranty.

If warranty work is provided/supported by the retailer the digital receipt can used by the customer to communicate with the retailer for warranty repairs. The retailer then retrieves POSLog details from their database.

14.1 Scenario: Customer purchases extended warranty

Brief Description

Customer purchases an extended warranty

Scenario Description

Sammy Tallgrass purchased a new TV for $400 and an extended warranty for $89. She then gets a link to the warranty on her receipt.

Data

Basic Receipt data

Transaction Date

Item info

Serial Number

Item Info

Type code ‘Warranty’

Item Link

Link/URL to description of Warranty

Contact Information

Phone

Address

Email

Website

14.1 ARTS XML Instance Document – Customer purchases extended warranty:

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
   FixVersion="0">
   <Transaction  >
      <BusinessUnit>
         <UnitID Name="Her Store">999</UnitID>
      </BusinessUnit>
      <SequenceNumber>100</SequenceNumber>
      <POSLogDateTime TypeCode="Message">2006-05-04T18:13:51.0Z</POSLogDateTime>
      <ReceiptDateTime>2006-05-04T18:13:51.0Z</ReceiptDateTime>
      <RetailTransaction>
         <LineItem>
            <Sale>
               <ItemID Name="TV">123456</ItemID>
               <ExtendedAmount>400.00</ExtendedAmount>
               <SerialNumber>456745674567-A</SerialNumber>
            </Sale>
            <SequenceNumber>1</SequenceNumber>
         </LineItem>
         <LineItem>
            <Sale ItemType="Warranty">
               <ItemID>456436</ItemID>
               <ExtendedAmount>89.00</ExtendedAmount>
            </Sale>
            <SequenceNumber>2</SequenceNumber>
            <!-- The link to the line item to which this warranty applies -->
            <ItemLink>1</ItemLink>
            <!-- The Product Content Management ID for this asset (warranty) -->
            <PCMUUID AssetFileFormat="URL"
AssetFileName="www.mywarranty.com">12323424</PCMUUID>
         </LineItem>
         <LineItem>
            <Tax>
               <Amount>40.00</Amount>
            </Tax>
            <SequenceNumber>3</SequenceNumber>
         </LineItem>
```

```
        <LineItem>
          <Tender>
            <Amount>529.00</Amount>
          </Tender>
          <SequenceNumber>4</SequenceNumber>
        </LineItem>
        <Total TotalType="TransactionGrandAmount">529.00</Total>
        <Customer ContactPreference="Phone">
          <CustomerID>1241234</CustomerID>
          <TelephoneNumber>
            <AreaCode>918</AreaCode>
            <LocalNumber>5551234</LocalNumber>
          </TelephoneNumber>
          <Website>www.mysite.com</Website>
        </Customer>
      </RetailTransaction>
    </Transaction>
</DigitalReceipt>
```

14.2 Scenario: Customer reviews standard warranty information for item purchased

Brief Description

The standard warranty information is included in the Digital Receipt as a way to save paper. (Warranty information is currently embedded in the package)

Scenario Description

Sun Tzu purchased a new TV and wanted to see the warranty online. So Sun goes to the website listed in the receipt and retrieves the warranty using the ID of the warranty identified in the PCMUUID (Product Content Management Universally Unique ID).

Data

Basic Receipt data

Transaction Date

Item info

- Serial Number
- Warranty Info
  - Link/URL to description of Warranty
  - Language
  - Contact Information
    - Phone
    - Address
    - Email

Website

14.2 ARTS XML Instance Document – Customer reviews standard warranty information for item purchased:

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
   FixVersion="0">
   <Transaction >
      <BusinessUnit>
         <UnitID Name="Her Store">999</UnitID>
      </BusinessUnit>
      <SequenceNumber>100</SequenceNumber>
      <POSLogDateTime TypeCode="Message">2006-05-04T18:13:51.0Z</POSLogDateTime>
      <ReceiptDateTime>2006-05-04T18:13:51.0Z</ReceiptDateTime>
      <RetailTransaction>
         <LineItem>
            <Sale>
               <ItemID Name="TV">123456</ItemID>
               <ExtendedAmount>400.00</ExtendedAmount>
               <SerialNumber>456745674567-A</SerialNumber>
            </Sale>
            <SequenceNumber>1</SequenceNumber>
         </LineItem>
         <LineItem>
            <!-- Warranty line item -->
            <Sale ItemType="Warranty">
               <ItemID>456436</ItemID>
            </Sale>
            <SequenceNumber>2</SequenceNumber>
            <!-- The link to the line item to which this warranty applies -->
            <ItemLink>1</ItemLink>
            <!-- The Product Content Management ID for this asset (warranty)       -->
            <!-- go to the retailer's site and use the PCMUUID to get the warranty -->
            <PCMUUID AssetFileFormat="URL"
AssetFileName="WWW.MyRetailer.com">12323424</PCMUUID>
            <ContactInformation>
               <Name>
                  <Name>The TV Store</Name>
               </Name>
            </ContactInformation>
         </LineItem>
         <LineItem>
            <Tax>
               <Amount>40.00</Amount>
            </Tax>
            <SequenceNumber>3</SequenceNumber>
         </LineItem>
         <LineItem>
            <Tender>
               <Amount>440.00</Amount>
            </Tender>
            <SequenceNumber>4</SequenceNumber>
         </LineItem>
```

```
        <Total TotalType="TransactionGrandAmount">440.00</Total>
        <Customer ContactPreference="Phone">
          <CustomerID>1241234</CustomerID>
          <TelephoneNumber>
            <AreaCode>918</AreaCode>
            <LocalNumber>5551234</LocalNumber>
          </TelephoneNumber>
          <Website>www.mysite.com</Website>
        </Customer>
      </RetailTransaction>
    </Transaction>
</DigitalReceipt>
```

15. Use Case: Return & Exchange Policy

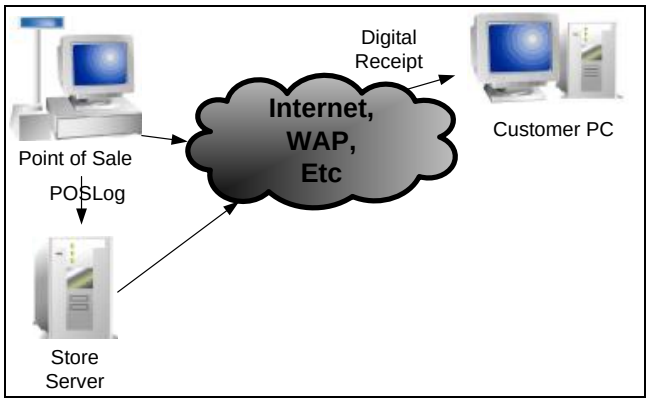


Figure 15: Returns and Exchanges

The Digital Receipt is sent to the customer after purchasing their items. When the customer needs to return or exchange an item, they can use the Digital Receipt to authenticate their purchase.

15.1 Scenario: Customer reviews return policy on specific item purchased

Brief Description

Customer purchases an item at the store and wants to review the return policy prior to going to the store for a return

Scenario Description

Rush bought a new shirt for ($5.00). The receipt informs the customer the retailer only accepts returns with the receipt.

Data

Basic Receipt Data

Item Info

- Returnable item flag
- Return Policy
  - Expiration date
  - Return policy description

15.1 ARTS XML Instance Document – Customer reviews return policy on specific item purchased:

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3" MinorVersion="0"
   FixVersion="0">
```

```
  <Transaction  >
    <BusinessUnit>
      <UnitID Name="Her Store">999</UnitID>
    </BusinessUnit>
    <SequenceNumber>100</SequenceNumber>
    <POSLogDateTime TypeCode="Message">2006-05-04T18:13:51.0Z</POSLogDateTime>
    <ReceiptDateTime>2006-05-04T18:13:51.0Z</ReceiptDateTime>
    <RetailTransaction>
      <LineItem>
        <Sale>
          <ItemID Name="Blue Shirt">123456</ItemID>
          <ExtendedAmount>5.00</ExtendedAmount>
          <ReturnPolicy>
            <Description Language="eng">Return with receipt only</Description>
            <ExpirationDate>2006-05-04</ExpirationDate>
          </ReturnPolicy>
        </Sale>
        <SequenceNumber>1</SequenceNumber>
      </LineItem>
      <LineItem>
        <Tax>
          <Amount>.25</Amount>
        </Tax>
        <SequenceNumber>2</SequenceNumber>
      </LineItem>
      <LineItem>
        <Tender>
          <Amount>5.25</Amount>
        </Tender>
        <SequenceNumber>3</SequenceNumber>
      </LineItem>
      <Total TotalType="TransactionGrandAmount">5.25</Total>
      <Customer ContactPreference="Phone">
        <CustomerID>1241234</CustomerID>
        <TelephoneNumber>
          <AreaCode>918</AreaCode>
          <LocalNumber>5551234</LocalNumber>
        </TelephoneNumber>
      </Customer>
    </RetailTransaction>
  </Transaction>
</DigitalReceipt>
```

16. Use Case: Target Marketing

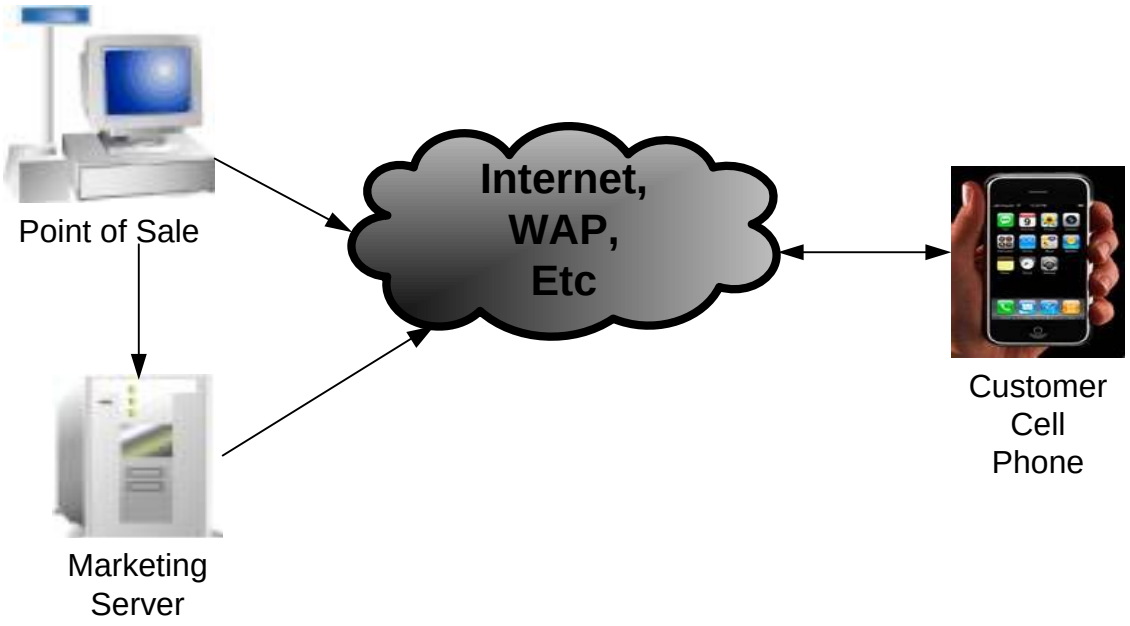


Figure 16: Target Marketing

I get a text message or e-mail asking me to go to a social network site like facebook and put in the phrase “I love alternative apparel”. If I do so I get a coupon code (Digital Receipt) from the company.
This creates a chain from the customer to the product. This can be leveraged to support an inexpensive online marketing campaign.

16.1 Scenario: Customer Gets Targeted Coupon

Brief Description

Advertise a new promotion by sending the customers a digital receipt with a coupon code for the new promotion.

Scenario Description

A customer gets a discount on the new release of a movie if they pre-purchase the product using this coupon.

Data

16.1 ARTS XML Instance Document – Customer Gets Targeted Coupon:

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion=“3” MinorVersion="0"
   FixVersion="0">
   <Transaction  >
      <BusinessUnit>
         <UnitID>My Movie Store</UnitID>
```

```
      </BusinessUnit>
      <SequenceNumber>100</SequenceNumber>
      <POSLogDateTime TypeCode="Message">2006-05-04T18:13:51.0Z</POSLogDateTime>
      <RetailTransaction>
         <LineItem>
            <Discount MethodCode="Coupon">
               <SequenceNumber>1</SequenceNumber>
               <Amount Action="Subtract">10.00</Amount>
               <PromotionID TypeCode="UPC">124213</PromotionID>
               <Description>Get a discount on the new release of a movie if you pre-purchase
                  this player</Description>
               <!-- The item to which this discount applies -->
               <ItemID Name="Movie Player">234234</ItemID>
            </Discount>
            <SequenceNumber>1</SequenceNumber>
         </LineItem>
      </RetailTransaction>
   </Transaction>
</DigitalReceipt>
```

16.2 **Scenario: Customer Purchases Theatre Ticket Using his Phone**

Brief Description

Purchase ticket by phone and get SMS message with the ticket information. Then you get use a special line to get in early.

Scenario Description

Joe purchases a ticket on his cell phone for the “New Movie” to be picked up at the theatre.

Data

16.2 ARTS XML Instance Document – Get Ticket on Phone:

```
<?xml version="1.0" encoding="UTF-8"?>
<DigitalReceipt xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/ DigitalReceiptV3.0.0.xsd"
   xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion=“3” MinorVersion="0"
   FixVersion="0">
   <Transaction  >
      <SequenceNumber>50</SequenceNumber>
      <POSLogDateTime>2006-05-04T18:13:51.0Z</POSLogDateTime>
      <RetailTransaction>
         <LineItem>
            <Sale>
               <!-- ID for the class of tickets for this event -->
               <ItemID>12342134</ItemID>
               <ExtendedAmount>20.00</ExtendedAmount>
               <Quantity>2</Quantity>
               <Ticket EventName="New Movie" EventDateTime="2006-05-04T18:13:51.0Z">
                  <!-- Unique number for this specific ticket -->
                  <SerialNumber>23452345</SerialNumber>
               </Ticket>
```

```
            </Sale>
            <SequenceNumber>1</SequenceNumber>
         </LineItem>
         <!-- Pay with your mobile phone -->
         <LineItem>
            <Tender TenderType="Mobile">
               <Amount>20.00</Amount>
               <Mobile>
                  <SensitiveData MSISDN="1234"/>
               </Mobile>
            </Tender>
            <SequenceNumber>2</SequenceNumber>
         </LineItem>
      </RetailTransaction>
   </Transaction>
</DigitalReceipt>
```

17. Use Case: Issuing the digital Receipt with Coupon (V3.1.0)

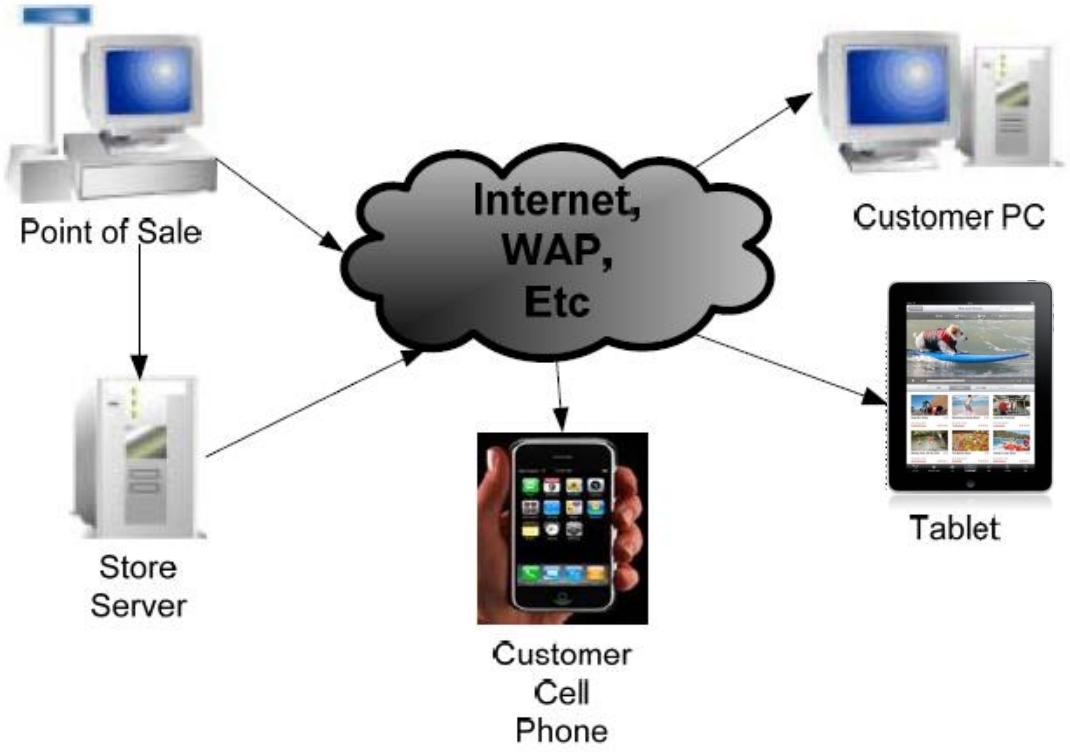


Figure 17: Issuing the digital receipt with Coupon

Issue the coupon in addition to the regular digital receipt at the same time.
Coupons are issued based on the following information.

- Customer order information
- Customer purchasing history
- Customer accumulated loyalty program points
- Customer loyalty program award status
- Store brand name
- Store branch location
- Advertising status of the sore location and/or others

To issue the coupon with the digital receipt, it is supposed to be added on the receipt based on the conditions as listed above.

17.1 **The customer receives the digital receipt with the various coupons (V3.1.0)**

Brief Description

The customer purchased several items.
Due to the customer item purchasing history and / or advertising, customer's loyalty program level will be changed. According to the customer's loyalty

program level status, customer receives the coupons that appended to the receipt.
In addition, each coupon is issued in accordance with the store advertising efforts, store chain's advertising, sales area's advertising and marketing effort originated by product competition.

Scenario Description

Hideo purchased several items at the convenience store "Nakamura"
They were non-alcoholic beer, paper diaper for the infant named "Merry-san", chewing gums and 200 ml bottled green tea named "Matsumoto Green Tea". He paid the bill at the store casher. Since he was a high level frequent customer for the "Nakamura", therefore, had the highest loyalty program level status.

[Loyalty Program]
Hideo's Loyalty program level was the highest such as platinum level within the loyalty program of convenience store "Nakamura". In its loyalty program, there are 5 levels and they are normal, bronze, silver, gold and platinum. Each level of loyalty program customer will receive the price discount coupon when they purchase the items at "Nakamura". Their coupon discount rates are normal:1%, bronze:3%, gold:5%, and platinum:10% in accordance with the customer purchasing current total amount. If customers visited the "Nakamura" next time, they can use the discount coupon for their purchasing.

[Advertising for the competitive products]
When, Hideo purchased the 200 ml bottled green tea at "Nakamura", bottled green tea of "Green tea drops of Shiojiri" was under advertising. Then, if he purchased the bottled green tea other than the "Green tea drops of Shiojiri", he will get the 10% discount coupon of "Green Tea Drops of Shiojiri" for the next purchasing.

[Discount coupon of the specified item for the next time purchasing as the sales promotion]
Sales promotion for the diaper was under taken and if someone purchasing the " Merry-san " brand, they can get the 50 yen discount coupon for the next time purchasing at any store.

Hideo finished the bill payment and receipt was listed below.

Convenience Store

Nakamura

Customer Receipt

2018/05/14 18:13:51 123456789999

Shiojiri Station Store WWWWXXXX

Postal Code:399-0xxx

Address: Shiojiri-City Hirooka 1234-5yy

Sales Person: Ota zzaaky : 8944

Non Alcoholic Beer	x6	720Yen
XXX Chewing Gum	x2	240Yen
Bottled Gre enTea 200ml "Matsumoto Green Tea"	x1	180Yen
Paper Diaper "Merry-san"	x4	4000Yen
Sub Total		5140Yen
Consumption Tax		411Yen

Total Amount	5551Yen
Cash	10051Yen
Change	4500Yen

Customer ID: XXXXYYYYXXXX Platinum

Customer Loyalty Program Coupon

Platinum Level: Save 514Yen.

For the next purchasing use at

Convenience Store "Nakamura"

"Green Tea drops of Shiojiri" 200ml

10% Discount

At "Nakamura"

Paper Diaper "Merry-san" Coupon

Save 5OYen at any store for purchasing

Valid until now to 2018/08/15

Data

Customer ID（E-mail Address, phone No., ID No.）

Store

- Name
- Address
- Phone No.
- Company Logo

Receipt issued date

Receipt No.

Casher

- ID
- Name

Customer Loyalty Program ID

- Loyalty Program Level

Item ID

- Item Information (Text information)
- Item graphics info. as the coupon

Sub Total

Consumption Tax

14.1 ARTS XML Instance Document – The customer received the digital receipt with the various coupons[XML-1]:

```
<?xml version="1.0" encoding="utf-8"?>
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
 <Transaction>
  <BusinessUnit>
   <UnitID Name="Shiojiri Station Store">WWWWXXXX</UnitID>
   <Address>
    <AddressLine>1234-zzz</AddressLine>
    <AddressLine>Shiojiri-City  Hirooka</AddressLine>
    <PostalCode>399-x567</PostalCode>
   </Address>
  </BusinessUnit>
  <Logo LogoFormat="BMP">
   <FileName>combininakamura.bmp</FileName>
  </Logo>
  <OperatorID OperatorName="Ota  zakky">8944</OperatorID>
  <ReceiptDateTime>2016-05-14T18:13:51</ReceiptDateTime>
  <RetailTransaction>
   <LineItem>
    <Sale>
```

```
        <ItemID Name="Non Alcoholic Beer">1022585345677</ItemID>
        <ExtendedAmount>720</ExtendedAmount>
        <Quantity>6</Quantity>
      </Sale>
      <SequenceNumber>2</SequenceNumber>
    </LineItem>
    <LineItem>
      <Sale>
        <ItemID Name="XXX Chewing Gum">1223045899786</ItemID>
        <ExtendedAmount>240</ExtendedAmount>
        <Quantity>2</Quantity>
      </Sale>
      <SequenceNumber>3</SequenceNumber>
    </LineItem>
    <LineItem>
      <Sale>
        <ItemID Name="Matsumoto Green Tea">1056767893345</ItemID>
        <ExtendedAmount>180</ExtendedAmount>
        <Quantity>1</Quantity>
      </Sale>
      <SequenceNumber>4</SequenceNumber>
    </LineItem>
    <LineItem>
      <Sale>
        <ItemID Name="Paper Diaper Merry-san">1035354589032</ItemID>
        <ExtendedAmount>4000</ExtendedAmount>
        <Quantity>4</Quantity>
      </Sale>
      <SequenceNumber>5</SequenceNumber>
    </LineItem>
    <!-- Coupon Issuing related to the Loyality Program -->
    <LineItem>
      <Coupon CouponType="StoreCoupon" Use="Issue">
        <Description>
          Customer Loyalty Program Coupon
          Platinum Level: Save 514Yen.
          For the next purchasing use at
          Convenience Store “Nakamura”
        </Description>
        <BusinessUnit TypeCode="RetailStore" Name="Nakamura Shijiri Station
Store">WWWXXXX</BusinessUnit>
        <CertificationID>XXXXXYYYXXX</CertificationID>
        <Amount>514</Amount>
      </Coupon>
      <SequenceNumber>6</SequenceNumber>
    </LineItem>
    <!-- In store Couopon for the Green Tea Drop of Shojiri-->
    <LineItem>
      <Coupon CouponType="StoreCoupon" Use="Issue">
        <Description>
          “10% Discount for the Green Tea Drop of Shiojiri” 200ml
          only valid for Convenience Store "Nakamura"
        </Description>
        <ScanCode>789956</ScanCode>
        <BusinessUnit TypeCode="RetailStore" Name="Convenience Store
Nakamura">WWWWXXXX</BusinessUnit>  <CertificationID>888</CertificationID>
        <Percent>10</Percent>
      </Coupon>
      <SequenceNumber>7</SequenceNumber>
```

```
    </LineItem>
    <!--Paper diaper Merry-san manufacturer's coupon -->
    <LineItem>
      <Coupon CouponType="ManufacturersCoupon">
        <Description>
          Paper Diaper "Merry-san"
          Save 50Yen at any store for purachasing
          Valid until 2018/08/15
        </Description>
        <ExpirationDate>2018-08-15</ExpirationDate>
        <ItemID Name="Paper Diaper Merry-san">1035354589032</ItemID>
        <CertificationID>7899456</CertificationID>
        <Amount>50</Amount>
       </Coupon>
      <SequenceNumber>8</SequenceNumber>
    </LineItem>
    <LineItem>
      <Tender TenderType="Cash">
        <Amount>10051</Amount>
        <TenderChange>
          <Amount>4500</Amount>
        </TenderChange>
      </Tender>
      <SequenceNumber>9</SequenceNumber>
    </LineItem>
    <Total TotalType="TransactionGrossAmount">5140</Total>
    <Total TotalType="TransactionNetAmount">5140</Total>
    <Total TotalType="TransactionGrandAmount">5551</Total>
    <Total TotalType="TransactionTaxAmount">411</Total>
    <!--Loyality Program Account Information-->
    <LoyaltyAccount>
      <LoyaltyProgram>
        <LoyaltyAccountID Level="Platinum">XXXXXXYYYYZZZZ</LoyaltyAccountID>
      </LoyaltyProgram>
    </LoyaltyAccount>
  </RetailTransaction>
 </Transaction>
</DigitalReceipt>
```

Issuing and utilizing the coupon XML description instances are described below.

[Issuing the coupon.]

- In store coupon

(1) Price discount

Hideo received the 50 yen money saving coupon for the item purchasing.

(2) X percent discount

Hideo received the 5% discount coupon for the item purchasing.

- Manufacturer’s coupon

(1) Price discount

Hideo received the 50 yen money saving coupon for the specified item purchasing.

[Utilizing the coupon]

- In store Coupon

[For the single item purchasing]

(1) Price discount

Hideo utilized the 50 yen money saving coupon for the chocolate bar purchasing.

(2) X percent discount

Hideo utilized the 10% discount coupon for the can beer purchasing.

[For the total amount]

(1) Price discount for the total amount

Hideo utilized the 500 yen money saving coupon for his total amount of purchased items.

(2) X percent discount for the total amount.

Hideo utilized the 10% discount coupon for his total amount of purchased items.

- Manufacturer's coupon

[For the single item]

(1) Price discount

Hideo utilized 50 yen money saving coupon for the specified item purchasing.

[Utilizing the coupon]

- In store Coupon

[For the single item purchasing]

(1) Price discount

Hideo utilized the 50 yen money saving coupon for the chocolate bar purchasing.

(2) X percent discount

Hideo utilized the 10% discount coupon for the can beer purchasing.

[For the total amount]

(1) Price discount for the total amount

Hideo utilized the 500 yen money saving coupon for his total amount of purchased items.

(2) X percent discount for the total amount.

Hideo utilized the 10% discount coupon for his total amount of purchased items.

- Manufacturer's coupon

[For the single item]

(1) Price discount

Hideo utilized 50 yen money saving coupon for the specified item purchasing.

[Description of use case scenario]

[Issuing the coupon]

In store coupon

(1) Hideo received the 50 yen money saving coupon for the item purchasing. 【XML-2】

```
<?xml version="1.0" encoding="utf-8"?>
<!—Store Issued 50Yen Saving Coupon  -->
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
 <Transaction>
  <ReceiptDateTime>2016-08-30T09:01:00</ReceiptDateTime>
  <ReceiptNumber>56783455</ReceiptNumber>
  <RetailTransaction>
   <LineItem>
    <Coupon CouponType="StoreCoupon" Use="Issue">
     <Description>
      Save 50Yen Cupon
      Only Valid for Hideo's store
     </Description>
     <ExpirationDate>2016-11-10</ExpirationDate>
     <PromotionCode>YYYYXXXXYY</PromotionCode>
     <Discount>50</Discount>
     <CertificationID>9815632400057</CertificationID>
    </Coupon>
    <SequenceNumber>1</SequenceNumber>
   </LineItem>
  </RetailTransaction>
 </Transaction>
</DigitalReceipt>
```

(2) Hideo received the 5% discount coupon for the item purchasing. [XML-3]

```
<!--Store issued 5% Discount Coupon -->
<?xml version="1.0" encoding="utf-8"?>
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
 <Transaction>
  <ReceiptDateTime>2016-08-30T09:01:00</ReceiptDateTime>
  <ReceiptNumber>56783455</ReceiptNumber>
  <RetailTransaction>
   <LineItem>
    <Coupon CouponType="StoreCoupon" Use="Issue">
     <Description>
      Save 5% Only for the Non alcoholic bevarage only
      at Hideo's Store
     </Description>
     <ExpirationDate>2016-11-30</ExpirationDate>
     <PromotionCode>9815632410056</PromotionCode>
     <Percent>5</Percent>
    </Coupon>
    <SequenceNumber>1</SequenceNumber>
   </LineItem>
  </RetailTransaction>
 </Transaction>
</DigitalReceipt>
```

Manufacturer’s coupon

(1) Hideo received the 50 yen money saving coupon for the specified item purchasing. 【XML-4】

```
<!-- Issuing the 50 Yen Saving manufacturer's coupon -->
```

```
<?xml version="1.0" encoding="utf-8"?>
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
 <Transaction>
  <ReceiptDateTime>2016-08-13T09:01:00</ReceiptDateTime>
  <ReceiptNumber>56783455</ReceiptNumber>
  <RetailTransaction>
   <LineItem>
    <Coupon CouponType="ManufacturersCoupon" Use="Issue">
     <ScanCode>34879765</ScanCode>
     <Discount>50</Discount>
    </Coupon>
    <SequenceNumber>1</SequenceNumber>
   </LineItem>
  </RetailTransaction>
 </Transaction>
</DigitalReceipt>
```

[Utilizing the coupon]

In store coupon

[Utilizing for the single item]

(1)Hideo utilized the 50 yen money saving coupon for the chocolate bar purchasing.
【XML-5】

```
<?xml version="1.0" encoding="utf-8"?>
<!--50 yen Saving Chocolate Bar purchasing Coupon use(Manufacturer's coupon) -->
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
 <Transaction>
  <CurrencyCode>JPY</CurrencyCode>
  <ReceiptDateTime>2016-08-13T09:01:00</ReceiptDateTime>
  <ReceiptNumber>56783455</ReceiptNumber>
  <RetailTransaction>
   <LineItem>
    <Sale>
     <ItemID Name="Chocolate Bar">1045687899354</ItemID>
     <MerchandiseHierarchy ID="567" Level="Department"></MerchandiseHierarchy>
     <ExtendedAmount>350</ExtendedAmount>

     <!--Extended Amount indicate the value after discount-->
     <Quantity>1</Quantity>
     <RetailPriceModifier MethodCode="Coupon">
      <SequenceNumber>1</SequenceNumber>
      <Amount Action="Subtract">50</Amount>
      <PromotionID>123123</PromotionID>
      <ReasonCode>456345</ReasonCode>
     </RetailPriceModifier>
    </Sale>
    <SequenceNumber>1</SequenceNumber>
   </LineItem>
   <LineItem>
    <Tender TenderType="Cash">
    <Amount>378</Amount>
    </Tender>
    <SequenceNumber>2</SequenceNumber>
   </LineItem>
   <Total TotalType="TransactionGrossAmount">400</Total>
   <Total TotalType="TransactionNetAmount">350</Total>
   <Total TotalType="TransactionGrandAmount">378</Total>
```

```
    <Total TotalType="TransactionTaxAmount">28</Total>
   </RetailTransaction>
  </Transaction>
</DigitalReceipt>
```

(2)Hideo utilized the 10% discount coupon for the can beer purchasing. 【XML-6】

```
<?xml version="1.0" encoding="utf-8"?>
<!--500ml Can beer 10% discount coupon use at the store -->
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
 <Transaction>
  <ReceiptDateTime>2016-08-13T09:01:00</ReceiptDateTime>
  <ReceiptNumber>56783455</ReceiptNumber>
  <RetailTransaction>
   <LineItem>
    <Sale>
     <ItemID Name="XX Can Beer 500ml">1078567899784</ItemID>
     <ExtendedAmount>315</ExtendedAmount>
     <!--Extended Amount decribes the after discount price -->
     <Quantity>1</Quantity>
     <RetailPriceModifier MethodCode="Coupon">
      <SequenceNumber>1</SequenceNumber>
      <Percent Action="Subtract">10</Percent>
      <ReasonCode>123123</ReasonCode>
      <ReasonCode>456454</ReasonCode>
     </RetailPriceModifier>
    </Sale>
    <SequenceNumber>1</SequenceNumber>
   </LineItem>
   <LineItem>
    <Tender TenderType="Cash">
     <Amount>340</Amount>
    </Tender>
    <SequenceNumber>2</SequenceNumber>
   </LineItem>
   <Total TotalType="TransactionGrossAmount">350</Total>
   <Total TotalType="TransactionNetAmount">315</Total>
   <Total TotalType="TransactionGrandAmount">340</Total>
   <Total TotalType="TransactionTaxAmount">25</Total>
  </RetailTransaction>
 </Transaction>
</DigitalReceipt>
```

[Utilize the coupon for the total amount]

(1) Hideo utilized the 500 yen money saving coupon for his total amount of purchased items.【XML-7】

```
<?xml version="1.0" encoding="utf-8"?>
<!--500 yen money saving coupon use for the total amount of purchased items【XML-7】-->
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
 <Transaction>
  <RetailTransaction>
   <LineItem>
    <Sale>
     <ItemID Name="Green Tea Drop of Shiojiri">2345345</ItemID>
     <UnitListPrice Quantity="1">200</UnitListPrice>
     <ExtendedAmount>400</ExtendedAmount>
```

```
        <Quantity>2</Quantity>
      </Sale>
      <SequenceNumber>1</SequenceNumber>
    </LineItem>
    <LineItem>
      <Sale>
        <ItemID Name="Paper Diaper Merry-san">454698</ItemID>
        <UnitListPrice Quantity="1">1000</UnitListPrice>
        <ExtendedAmount>4000</ExtendedAmount>
        <Quantity>4</Quantity>
      </Sale>
      <SequenceNumber>2</SequenceNumber>
    </LineItem>
      <LineItem>
      <Coupon CouponType="StoreCoupon" Use="Redeem">
        <Description>
          500 yen Money Saving Coupon
          Valid for the any item purchasing
          At the Convenience Store Station Store
        </Description>
       <PromotionCode>45689</PromotionCode>
        <Discount>500</Discount>
        <CertificationID>34998</CertificationID>
        </Coupon>
      <SequenceNumber>1</SequenceNumber>
    </LineItem>
     <Total TotalType="TransactionGrossAmount">4400</Total>
   <Total TotalType="TransactionNetAmount">3900</Total>
    <Total TotalType="TransactionGrandAmount">4212</Total>
    <Total TotalType="TransactionTaxAmount">312</Total>
  </RetailTransaction>
 </Transaction>
</DigitalReceipt>
```

(1) Hideo utilized the 10% discount coupo for his total amount of purchased items.
【XML-8】

```
<?xml version="1.0" encoding="utf-8"?>
<!--10% Money saving coupon use for the item purchasing at the store    -->
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
 <Transaction>
  <RetailTransaction>
    <LineItem>
      <Sale>
        <ItemID Name="Green Tea Drop of Shiojiri">1056888569902</ItemID>
        <UnitListPrice Quantity="1">200</UnitListPrice>
        <ExtendedAmount>400</ExtendedAmount>
        <Quantity>2</Quantity>
      </Sale>
      <SequenceNumber>1</SequenceNumber>
    </LineItem>
    <LineItem>
      <Sale>
        <ItemID Name="Paper Diaper Merry-san">1035354589032</ItemID>
        <UnitListPrice Quantity="1">1000</UnitListPrice>
        <ExtendedAmount>4000</ExtendedAmount>
        <Quantity>4</Quantity>
      </Sale>
      <SequenceNumber>2</SequenceNumber>
```

```
    </LineItem>
     <!--10% money saving coupon use -->
    <LineItem>
     <Coupon CouponType="StoreCoupon" Use="Redeem">
      <Description>
      At convenience Store Station Store
      10% Money saving coupon
      for any item purachasing at the store
      </Description>
      <PromotionCode>45689</PromotionCode>
      <CertificationID>34998</CertificationID>
      <Percent>10</Percent>
     </Coupon>
     <SequenceNumber>3</SequenceNumber>
    </LineItem>
    <LineItem>
     <Tender TenderType="Cash">
      <Amount>5000</Amount>
      <TenderChange>
       <Amount>724</Amount>
      </TenderChange>
     </Tender>
     <SequenceNumber>4</SequenceNumber>
    </LineItem>
    <Total TotalType="TransactionGrossAmount">4400</Total>
    <Total TotalType="TransactionNetAmount">3960</Total>
    <Total TotalType="TransactionGrandAmount">4276</Total>
    <Total TotalType="TransactionTaxAmount">316</Total>
   </RetailTransaction>
  </Transaction>
</DigitalReceipt>
```

Manufacturer's coupon

[Single Item]

(1) Hideo utilized the 50 yen money saving manufacturer's coupon.【XML-9】

```
<?xml version="1.0" encoding="utf-8"?>
<!--50 yen money saving manufaturer' coupon use at the store -->
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
 <Transaction>
  <ReceiptDateTime>2016-08-13T09:01:00</ReceiptDateTime>
  <ReceiptNumber>56783455</ReceiptNumber>
  <RetailTransaction>
   <LineItem>
    <Sale>
     <ItemID Name="Green Tea Drop of Shiojri 200ml">1056888569902</ItemID>
     <ExtendedAmount>200</ExtendedAmount>
     <Quantity>1</Quantity>
    </Sale>
    <SequenceNumber>1</SequenceNumber>
   </LineItem>
    <LineItem>
     <Coupon CouponType="ManufacturersCoupon" Use="Redeem">
      <Quantity>1</Quantity>
      <ScanCode>3487976545789</ScanCode>
      <ItemID>1056888569902</ItemID>
```

```
        <Discount>50</Discount>
        <CertificationID>789988</CertificationID>
       </Coupon>
       <SequenceNumber>2</SequenceNumber>
      </LineItem>
      <LineItem>
       <Tender TenderType="Cash">
        <Amount>166</Amount>
       </Tender>
       <SequenceNumber>3</SequenceNumber>
      </LineItem>
      <LineItem>
       <Tender TenderType="Coupon">
        <Amount>50</Amount>
       </Tender>
       <SequenceNumber>4</SequenceNumber>
      </LineItem>
      <Total TotalType="TransactionGrossAmount">200</Total>
      <Total TotalType="TransactionNetAmount">200</Total>
      <Total TotalType="TransactionCouponTotal">50</Total>
      <Total TotalType="TransactionGrandAmount">216</Total>
      <Total TotalType="TransactionTaxAmount">16</Total>
     </RetailTransaction>
    </Transaction>
</DigitalReceipt>
```

18. Use Case: Plural Loyalty Program points were added digital receipt (V3.1.0)

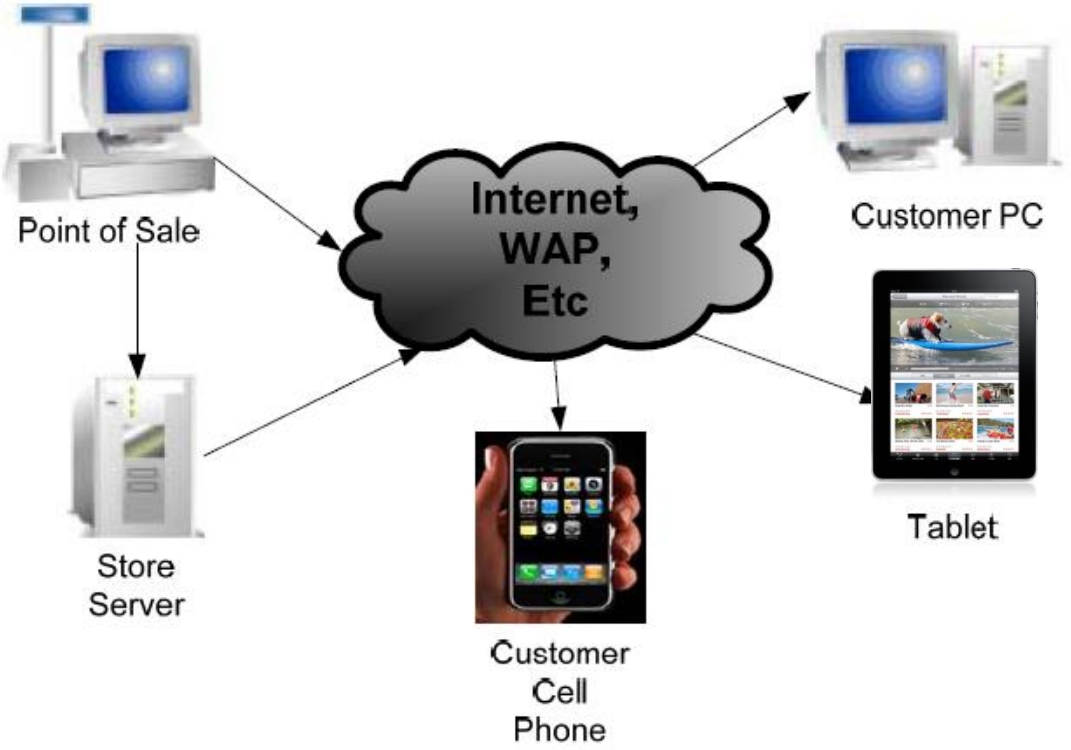


Figure 18: Plural loyalty program points were added digital receipt

If customer joined the plural customer loyalty program, when they show the each loyalty program cards at the cash points, they can get each of program points.

Recently in Japan, in addition to the store own loyalty program, there are some cooperating loyalty programs.

Therefore, if plural loyalty program cards are present, each program points should be added based on each program rules.

Each loyalty program point is calculated based on the following information.

- Customer ordered items
- Customer purchasing history
- Kind of customer loyalty program
- Accumulated customer loyalty program point
- Loyalty program level
- Store chain / store name

・Advertising status of the store and/or store locations

18.1 **Scenario: Acquiring the plural loyalty program point and added on the digital receipt**

Brief Description

Customer shopped the items in the store and she already joined the plural loyalty programs.

At the casher the customer showed the plural point program cards. Based on the each loyalty program's regulation, she got the point and with those point information digital receipt was issued.

Scenario Description

Hideo purchased the non-alcoholic beer, chewing gum, bottled "Matsumoto green tea", and paper diaper "Merry-san" at the convenience store "Nakamura" Shiojiri station store.

He did the payment at the casher. At the casher he presented the convenience store "Nakamura"'s customer loyalty program card。At the same time, he presented the WW point program card that "Nakamura" and other retailers joined as retail trade group point program.

Based on the presentation of 2 pieces of cards, Hideo got the both program points.

Then, he got the digital receipt describing the two kinds of point program details.

Convenience Store

Nakamura

Customer Receipt

Aug. /13/2018 , 09:01 No. 123456789999
Shiojiri Station Store : WWWWXXXX
Address : Hirooka 123-yyz, Shiojiri - City
Postal Code:399-0xxx
Operator : Tadashi Hirayama : yyww1236

Non Alcoholic Beer	x6	720 Yen
Chewing Gum	x2	240 Yen
Matsumoto Green Tea 200ml	x1	180 Yen
Paper Diaper Merry-san	x4	4000 Yen
Subtotal		5140 Yen
Consumption Tax		411 Yen
Total		5551 Yen
Cash		6000 Yen
Change		449 Yen

Nakamura Tomonokai Points

Tomonokai Program ID : 8899zz
Tomonokai Card No.789956XXX / Platinum

Previous Points	:	2368
Points Earned	:	771
Updated Points balance	:	3139

WW Points

WW Points Program ID	:	4566yy
WW Points Card No.	:	4589YZZZZ
Previous Points	:	4577
Points Earned	:	514
Updated Points Balance	:	5091

Data

Loyalty Program ID1 / Customer ID1

- Current Points
- Earned Points
- Point balance

Loyalty Program ID2 / Customer ID2

- Current Points
- Earned Points
- Point balance

Store Information

- Store Name
- Address
- Phone Number
- Store Logo
- Store Chain

Receipt Information

- Date
- Number

Operator Information

- Operator ID
- Name

Price Information

- SubTotal Amount
- Consumption Tax
- Total Amount

13.2 ARTS XML Instance Document – Issuing the digital receipt with multiple loyalty point programs 【XML-10】:

```
<!—2 kinds of Loyalty program points are added -->
<?xml version="1.0" encoding="utf-8"?>
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
  <Transaction>
    <BusinessUnit>
      <UnitID Name="Shiojiri Station Store">WWWWXXXX</UnitID>
      <Address>
        <AddressLine>399-0xxx</AddressLine>
        <City>Shiojiri-shi市</City>
        <Territory>Hirooka 123-yyz</Territory>
        <PostalCode>399-0xxx</PostalCode>
      </Address>
    </BusinessUnit>
    <OperatorID OperatorType="Cashier" OperatorName="Tadashi
Hirayama">yyww1236</OperatorID>
    <CurrencyCode>JPY</CurrencyCode>
    <ReceiptDateTime>2018-08-13T09:01:00</ReceiptDateTime>
    <ReceiptNumber>123456789999</ReceiptNumber>
    <RetailTransaction>
```

```
<LineItem>
  <Sale ItemType="Stock">
    <ItemID Name="Non Alcoholic Beer">102558</ItemID>
    <ExtendedAmount>720</ExtendedAmount>
    <Quantity>6</Quantity>
  </Sale>
  <SequenceNumber>1</SequenceNumber>
</LineItem>
<LineItem>
  <Sale>
    <ItemID Name="XX Chewing Gum">102304</ItemID>
    <ExtendedAmount>240</ExtendedAmount>
    <Quantity>2</Quantity>
  </Sale>
  <SequenceNumber>2</SequenceNumber>
</LineItem>
<LineItem>
  <Sale>
    <ItemID Name="Matsumoto Green Tea">1056767</ItemID>
    <MerchandiseHierarchy>Bottled Green Tea 200 ml</MerchandiseHierarchy>
    <ExtendedAmount>180</ExtendedAmount>
  </Sale>
  <SequenceNumber>3</SequenceNumber>
</LineItem>
<LineItem>
  <Sale>
    <ItemID Name="Paper Diaper Merry-san">103535</ItemID>
    <ExtendedAmount>4000</ExtendedAmount>
    <Quantity>4</Quantity>
  </Sale>
  <SequenceNumber>4</SequenceNumber>
</LineItem>
<LineItem>
  <!--Description of Nakamura Tomonokai Reward-->
  <LoyaltyReward>
    <LoyaltyProgramID Name="Nakamura Tomonokai">8899zz</LoyaltyProgramID>
    <LoyaltyAccountID>789956XXX</LoyaltyAccountID>
    <PointsAwarded Type="PreviousPoints">2368</PointsAwarded>
    <PointsAwarded Type="PointsEarned">771</PointsAwarded>
    <PointsAwarded Type="Balance">3139</PointsAwarded>
  </LoyaltyReward>
  <SequenceNumber>1</SequenceNumber>
</LineItem>
<!--Description of WW Points Program -->
<LineItem>
  <LoyaltyReward>
    <LoyaltyProgramID Name="WW Points">4566yy</LoyaltyProgramID>
    <LoyaltyAccountID>4589YZZZZ</LoyaltyAccountID>
    <PointsAwarded Type="PreviousPoints">4577</PointsAwarded>
    <PointsAwarded Type="PointsEarned">514</PointsAwarded>
    <PointsAwarded Type="Balance">5091</PointsAwarded>
  </LoyaltyReward>
  <SequenceNumber>2</SequenceNumber>
</LineItem>
<LineItem>
  <Tender TenderType="Cash">
    <Amount>6000</Amount>
    <TenderChange TenderType="Cash">
      <Amount>449</Amount>
```

```
        </TenderChange>
       </Tender>
       <SequenceNumber>5</SequenceNumber>
      </LineItem>
      <Total TotalType="TransactionGrossAmount">5140</Total>
      <Total TotalType="TransactionNetAmount">5140</Total>
      <Total TotalType="TransactionGrandAmount">5551</Total>
      <Total TotalType="TransactionTaxAmount">411</Total>
    </RetailTransaction>
  </Transaction>
</DigitalReceipt>
```

19. Use Case: Issuing the Digital Receipt with points expiration date and expiring points（V3.1.0）

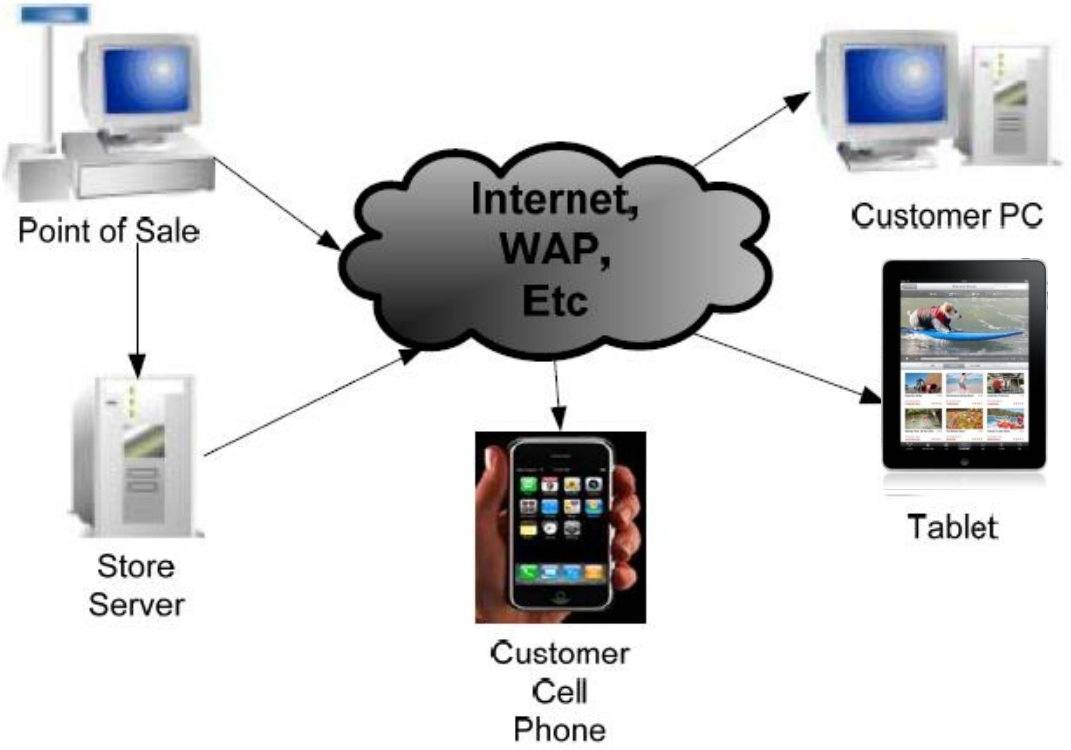


Figure 19:Digital Coupon/Rebate Redemption Tracking

Loyalty Program point have the expiration date. This is not the expiration date of LoyaltyProgram.

The expiration date of point is 12 months after updating in many cases.

Therefore, there might be the point to be expired every month.

Point to be expired (ToBeExpiredPoints) and its expiration date (PointsExpirationDate) are printed on the receipt, and informed to a customer.

19.1 Scenario: Add the point expiring date and number of points to be expired on the receipt.

Brief Description

Customer purchased several items.

The customers who are participating in the customer loyalty program will receive the information on the receipt. They are loyalty program point related information including the number of the point to be expired and points expiration date. Those information will be added on the digital receipt.

Scenario Description

Hideo is participating in customer loyalty program that is provided by the supermarket "Muranaka". Hideo already accumulated the loyalty program points by the shopping. On March 20 2015, he spent 6000 yen at the supermarket "Muranaka".

Hideo purchased several items on February 25 2016. When Hideo checked out at the POS, he presented the loyalty program card to the operator at the casher.

Customer loyalty point program of the supermarket, "Muranaka" was as follows.

・10% of the item price amount is accumulated as a point

・Point expire at the end of the same month one year after the point earning or redemption.

The earned points on February 25 2016, is added to the receipt which Hideo receives.

And, also that the 600 points earned on March 20 2015, will be expired on March 20 2016. Those information will be added to the same receipt.

Hideo looked at the receipt and thought to make a shopping again in this store before March 20 2016 that 600 points to be expired.

To print on the receipt regarding the point expiration information has a purpose to promote and enforce the customer re-visit the store to use the points before the expiration date.

Hideo finished the bill payment and receipt was listed below.

Supermarket

Muranaka

Customer Receipt

Feb./25/2016 : 18:13 No. 123456789999

Shiojiri Station Store: WWWWXXXX

Address: Hirooka 123-yyz, Shiojiri-City

Postal Code:399-yyz Phone:0263-yy-zzzz

Sales: Ota zaaky : 78956

Non Alcoholic Beer	x6	720 Yen
Chewing Gum	x2	240 Yen
Matsumoto Green Tea 200ml	x1	180 Yen
Paper Diaper Merry-san	x4	4000 Yen
Subtotal		5140 Yen
Tax		411 Yen

Total	5551 Yen
Credit Card	5551 Yen
Credit Card Number :	*********yyyyzz

*** Points Program Information ***

Previous Points	600
Points Redeemed	0
Points applied value	5140 Yen
Points Earned	514
Updated Points balance	1114
Points Expiration Date	Mar./20/2016
Expected expired points	600

Muranaka Loyalty Program ID:yyyy895677

Data

CustomerID

Store Information

- Store Name
- Address
- Phone number
- Corporate Logo
- Receipt Issuing date

Receipt Number.

Operator

- Operator ID
- Name

Customer Loyalty Program Point Information

- Previous points
- Redeemed points
- Earned points
- Current points
- Point expiration date
- Expiring points

Sub total amount

Tax

13.1 ARTS XML Instance Document – Add the point expiring date and number of points to be expired on the receipt【XML-11】:

```
<!-— Receipt that indicate the expiring points-->
<?xml version="1.0" encoding="utf-8"?>
<!-- Digital Receipt that indicate the points expiration date-->
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
 <Transaction>
  <BusinessUnit>
   <UnitID Name="Shiojiri Station Store">WWWWXXXX</UnitID>
    <Address>
    <AddressLine>Hirooka-123</AddressLine>
    <City>Shiojiri-shi</City>
    <PostalCode>399-yyz</PostalCode>
   </Address>
```

```
  <Telephone>
    <AreaCode>0263</AreaCode>
    <LocalNumber>yyzzzz</LocalNumber>
  </Telephone>
</BusinessUnit>
  <Logo LogoFormat="PDF">
  <FileName>www.myreceipts.com/123456789999</FileName>
</Logo>
<SequenceNumber>50</SequenceNumber>
<OperatorID OperatorName="Ota zaaky">78956</OperatorID>
<ReceiptDateTime>2016-02-25T18:13:51.0Z</ReceiptDateTime>
 <RetailTransaction>
  <LineItem>
    <Sale>
      <ItemID Name="Non Alcoholic Beer">1022585345677</ItemID>
      <ExtendedAmount>720</ExtendedAmount>
      <Quantity>6</Quantity>
    </Sale>
    <SequenceNumber>1</SequenceNumber>
  </LineItem>
  <LineItem>
    <Sale>
      <ItemID Name="Chewing Gum">1223045899786</ItemID>
      <ExtendedAmount>240</ExtendedAmount>
      <Quantity>2</Quantity>
    </Sale>
    <SequenceNumber>2</SequenceNumber>
  </LineItem>
  <LineItem>
    <Sale>
      <ItemID Name="Matsumoto Green Tea 200ml">1056767893345</ItemID>
      <ExtendedAmount>180</ExtendedAmount>
      <Quantity>1</Quantity>
    </Sale>
    <SequenceNumber>3</SequenceNumber>
  </LineItem>
  <LineItem>
    <Sale>
      <ItemID Name="Paper Diaper Merry-san">1035354589032</ItemID>
      <ExtendedAmount>4000</ExtendedAmount>
      <Quantity>4</Quantity>
    </Sale>
    <SequenceNumber>4</SequenceNumber>
  </LineItem>
    <LineItem>
    <Tender TenderType="CreditDebit">
      <Amount>5551</Amount>
      <CreditDebit TypeCode="Visa">
        <PrimaryAccountNumber>*********yyyyzz</PrimaryAccountNumber>
      </CreditDebit>
    </Tender>
    <SequenceNumber>5</SequenceNumber>
  </LineItem>
   <Total TotalType="TransactionGrossAmount">5140</Total>
  <Total TotalType="TransactionNetAmount">5140</Total>
  <Total TotalType="TransactionGrandAmount">5551</Total>
  <Total TotalType="TransactionTaxAmount">411</Total>
   <LoyaltyAccount>
     <CustomerID>yyy896557</CustomerID>
```

```
        <LoyaltyAccount>
         <!--Loyalty Program points expiring date-->
         <ExpirationDate>2020-08-30</ExpirationDate>
         <Points Type="PreviousPoints">600</Points>
         <Points Type="Redeemed">0</Points>
         <Points Type="PointsEarned">514</Points>
         <Points Type="Balance">1114</Points>
         <PointsExpiration >
           <ToBeExpiredPoints>600</ToBeExpiredPoints>
           <PointsExpirationDate>2016-03-20</PointsExpirationDate>
         </PointsExpiration>
        </LoyaltyAccount>
      </LoyaltyAccount>
    </RetailTransaction>
  </Transaction>
</DigitalReceipt>
```

20. Use case : Item purchasing by using the Loyalty program points (V3.1.0)

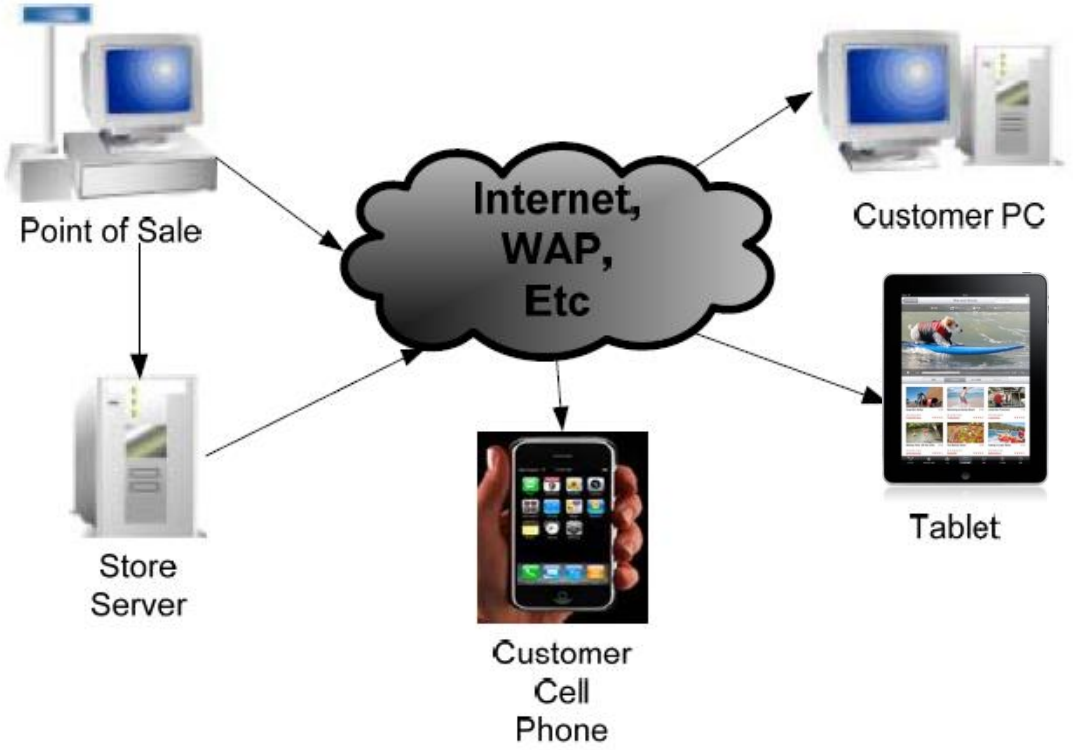


Figure 20: Item purchasing by using the Loyalty program points

The customer can purchase the items by using the loyalty program points. The digital receipt will be issued with the indication of points earning and / or redeeming when it is used for the price discount or payment of the item purchasing.

20.1 Scenario: The customer purchase the items by using the loyalty program points

1) Customer receive the digital receipt that a part of payment was loyalty program point's redemption

2) Customer receives the digital receipt that a whole payment was loyalty program point's redemption.

Brief Description

Through the Loyalty program, customer purchased the items with its use.

- Purchased the items by using the points are following items.
  - The customer purchased the item and a part of the payment was done by using the loyalty program point redemption.

- The customer purchased the item and the whole payment was done by using the loyalty program point redemption.

Scenario Description

【Purchased the items and a part of payment was loyalty program points redemption】

Tomoko purchased the 6 pieces of non-alcoholic beer at convenience store “Nakamura”.

She did the payment with the cash and loyalty program point redemption. She redeemed the 100 points from the loyalty program and it worth with the 100 yen. These information are included, digital receipt was issued.

Convenience Store

Nakamura

Customer Receipt

April/21/2016：18:13　No. 123456789977

Shiojiri Station Store: WWWWXXXX
Address: Hirooka 123-yyz、Shiojiri City
Postal Code: 399-0xxx
Sales: Takashi Yamada　ID:7899www

Non Alcoholic Beer	x6	720 Yen
Discount by Points		-100 Yen
Subtotal		620 Yen
Tax		49 Yen
Total		669 Yen
Cash		669 Yen
Change		0 Yen

*** Loyalty Program Points Info. ***

Previous Points	600
Points Redeemed	100
Points applied value	620 Yen
Points Earned	62
Updated Points Balance	562
Points Expiration Date	April /21/2018
To be expired points	562

Nakamura Tomonokai Program ID ：8899zz
Nakamura Tomonokai Customer ID:799886YYY, Platinum

【Purchased the items and whole of payment was loyalty program points redemption】

Tomoko purchased 6 pieces of non-alcoholic beer at convenience store “Nakamura”. Total amount of purchased item price was 777 yen. (List price is 777 yen and included consumption tax is 57 yen.)

Since she had the enough point to pay for this, she redeemed 777 points from her loyalty program points and used for this whole payment. This points redemption and payment included digital receipt was issued.

Convenience Store

Nakamura

Customer Receipt

March/15/2016：10:25　No. 12345677789

Shiojiri Station Store: WWWWXXXX
Address: Hirooka 123-yyz、Shiojiri City
Postal Code: 399-0xxx
Sales : Aki Yamamoto　ID:7898www

Non Alcoholic Beer	x6	720 Yen
Tax		57 Yen
Amount		777 Yen

Paid by Points	777

*** Points info. ***

Previous Points	900
Points Redeemed	777
Points applied value	0 Yen
Points Earned	0
Updated Points balance	123
Points expiring date	March/15 /2018
To be expired points	123

Nakamura tomonokai ID: 8899zz
Customer ID:799886www　Platinum Level

Data

Customer Information
- Customer ID

Loyalty program Information
- Program ID
- Program Name
- Customer ID
- Loyalty program Level

Store Information
- Store Name
- Address
- Phone number
- Corporate Logo

Receipt Information
- Issued date
- Receipt number.

Operator
- Operator ID
- Operator Type
- Name

Point information
- Previous points
- Points redeemed
- Points earned
- Current points
- Point expiration date
- Expiring points

Subtotal amount
- Tax
- Discount amount

13.1 ARTS XML Instance Document – Items were purchased and a part of payment was loyalty program points redemption.【XML-12】:

```
<?xml version="1.0" encoding="utf-8"?>
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
 <Transaction>
  <BusinessUnit>
   <UnitID Name="Shiojiri Station Store">WWWWXXXX</UnitID>
   <Address>
    <AddressLine>Hirooka 123-yyz</AddressLine>
    <City>SHiojiri-City</City>
    <PostalCode>399-0xxx</PostalCode>
   </Address>
  </BusinessUnit>
  <Logo LogoFormat="PDF">
   <FileName>www.myreceipts.com/123456789999</FileName>
  </Logo>
  <OperatorID OperatorName="Tkashi Yamada">7899WWW</OperatorID>
```

```
  <ReceiptDateTime>2016-04-21T18:13:51</ReceiptDateTime>
   <RetailTransaction>
    <LineItem>
     <Sale>
      <ItemID Name="Non Alcoholic Beer">1010</ItemID>
      <ExtendedAmount>720</ExtendedAmount>
      <Quantity>6</Quantity>
     </Sale>
     <SequenceNumber>2</SequenceNumber>
    </LineItem>
     <LineItem>
     <LoyaltyRedemption>
      <PointsRedeemed Type="Redeemed">1000</PointsRedeemed>
      <LoyaltyProgram TypeCode="Points">
       <LoyaltyProgramID Name="Nakamura Tomonokai">8899zz</LoyaltyProgramID>
       <LoyaltyAccountID >79986YYY</LoyaltyAccountID>
      </LoyaltyProgram>
      <Amount>100</Amount>
     </LoyaltyRedemption>
     <SequenceNumber>3</SequenceNumber>
    </LineItem>
     <LineItem>
     <Tender TenderType="Cash">
      <Amount>669</Amount>
     </Tender>
     <SequenceNumber>4</SequenceNumber>
    </LineItem>
   <Total TotalType="TransactionGrossAmount">720</Total>
    <Total TotalType="TransactionNetAmount">620</Total>
    <Total TotalType="TransactionGrandAmount">669</Total>
    <Total TotalType="TransactionTaxAmount">49</Total>
     <LoyaltyAccount>
     <CustomerID>799886YYY</CustomerID>
     <LoyaltyAccount>
      <!--ExpirationData shows the Loyality Program expiration date if there is no program activity-->
      <ExpirationDate>2020-06-15</ExpirationDate>
      <Points Type="PreviousPoints">600</Points>
      <Points Type="Redeemed">100</Points>
      <Points Type="PointsEarned">62</Points>
      <Points Type="Balance">562</Points>
      <!--Previously expired point(Not indiated on the receipt）-->
      <Points Type="PointsExpiring">450</Points>
      <!--Expected expiring point after 2 years from now.-->
      <PointsExpiration >
       <ToBeExpiredPoints>562</ToBeExpiredPoints>
       <PointsExpirationDate>2018-04-21</PointsExpirationDate>
      </PointsExpiration>
     </LoyaltyAccount>
    </LoyaltyAccount>
   </RetailTransaction>
  </Transaction>
</DigitalReceipt>
```

Items were purchased and whole payment was loyalty program points redemption【XML-13】

```
<?xml version="1.0" encoding="utf-8"?>
<!--Items were purchased and whole payment was loyalty progaram points redemption -->
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
```

```
<Transaction>
  <BusinessUnit>
    <UnitID Name="Shiojri Station Store">WWWWXXXX</UnitID>
    <Address>
      <AddressLine>123-yyz</AddressLine>
      <City>Shiojiri</City>
      <Territory>Hirooka</Territory>
      <PostalCode>399-0xxx</PostalCode>
    </Address>
  </BusinessUnit>
  <Logo LogoFormat="PDF">
    <FileName>www.myreceipts.com/123456789999</FileName>
  </Logo>
  <SequenceNumber>50</SequenceNumber>
  <OperatorID OperatorName="Aki Yamada">7898www</OperatorID>
  <ReceiptDateTime>2016-03-15T10:25:51</ReceiptDateTime>
  <RetailTransaction>
    <LineItem>
      <Sale>
        <ItemID Name="Non Alcoholic Beer">1022585345677</ItemID>
        <ExtendedAmount>720</ExtendedAmount>
        <Quantity>6</Quantity>
      </Sale>
      <SequenceNumber>1</SequenceNumber>
    </LineItem>
    <!--Payment was done by points redemption only-->
    <LineItem>
      <Tender TenderType="Loyalty">
        <LoyaltyRedemption TypeCode="Redemption">
          <PointsRedeemed>7770</PointsRedeemed>
        </LoyaltyRedemption>
      </Tender>
      <SequenceNumber>2</SequenceNumber>
    </LineItem>
    <Total TotalType="TransactionGrossAmount">720</Total>
    <Total TotalType="TransactionNetAmount">720</Total>
    <Total TotalType="TransactionGrandAmount">777</Total>
    <Total TotalType="TransactionTaxAmount" >57</Total>
    <LoyaltyAccount>
      <CustomerID>799886www</CustomerID>
      <LoyaltyAccount>
        <!--ExpirationData means Loyalty program expiration data if there is no activity-->
        <ExpirationDate>2020-08-10</ExpirationDate>
        <Points Type="PreviousPoints">900</Points>
        <Points Type="Redeemed">777</Points>
        <Points Type="PointsEarned">0</Points>
        <Points Type="Balance">123</Points>
        <!--Expiring points after 2years from now-->
        <PointsExpiration >
          <ToBeExpiredPoints>123</ToBeExpiredPoints>
          <PointsExpirationDate>2018-03-15</PointsExpirationDate>
        </PointsExpiration>
      </LoyaltyAccount>
    </LoyaltyAccount>
  </RetailTransaction>
</Transaction>
</DigitalReceipt>
```

21. Use Case: Advertising was added digital receipt (V3.1.0)

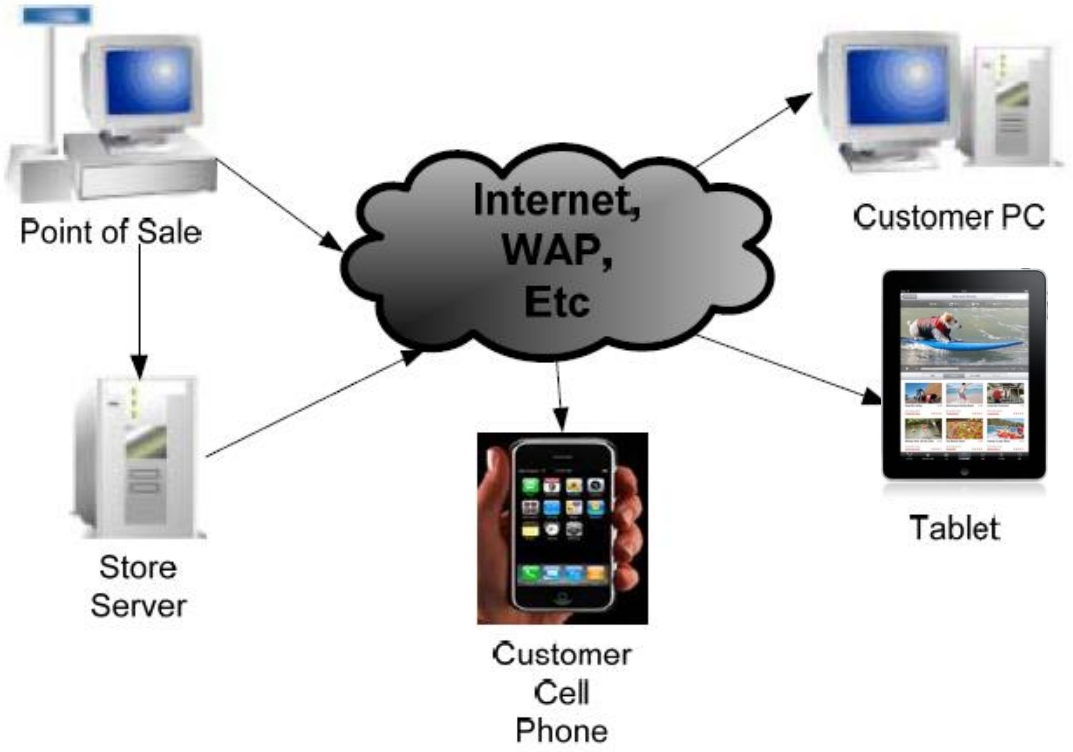


Figure 21: Advertising was added digital receipt

Add the advertising messages, images on the receipt. Advertising messages, images are related to the various kinds of information.

21.1 The customer receives the electronic receipt to which various advertising information was added (V3.1.0)

Brief Description

The customer purchased several items. Advertising information is added to the customer receipt. The advertising information are decided based on the location of the store, the store brand, purchased product, times of purchase, etc..

Scenario Description

Hideo purchased several items at the convenience store “Nakamura”.

They were non-alcoholic beer, paper diaper for the infant named “Merry-san” , chewing gums and 200 ml bottled green tea named “Matsumoto Green Tea”. He paid the bill at the store casher.

There was an advertising program to promote an advertisement of new product "Matsumoto Green Tea Latte" to be released next month from the same manufacturer. Therefore, "Matsumoto green tea" purchased customer will

receive the “Matsumoto Green Tea Latte” advertisement that is displayed on the receipt.

Since "Matsumoto green tea" is included in a purchased item of Hideo, an advertisement of "Matsumoto green tea Latte" as a new product, is added to the Hideo’s receipt.

Hideo finished the bill payment and receipt was listed below.

Convenience Store
Nakamura
Customer Receipt
2016/05/04 18:13 No.123456789999
Shiojiri Station Store WWWWXXXX
Address: Shiojiri-Shi Hirooka 1234-zzz
Sales Person: Ota zzaaky : 56784

Non Alcoholic Beer	x6	720Yen
XXX Chewing Gum	x2	240Yen
Bottled Green Tea 200ml “Matsumoto Green Tea”	x1	180Yen
Paper Diaper “Merry-san”	x4	4000Yen
Sub Total		5140Yen
Consumption Tax		411Yen

Total Amount	5551Yen
Cash	5551 Yen
Change	0 Yen

Customer ID: XXXXXXYYYYZZZZ Platinum

“Matsumoto Green Tea Latte”
Next month release!
Relax in the deep fragrance and gentle sweetness
http://matsumotogreentealatte.com/

Data

Store
- Name
- Address
- Phone No.
- Logo

Receipt issued date
Receipt Sequence No.
Receipt No.
Casher
- ID

Name
Promotion ID
Promotional Text
URI
Sub Total
Consumption Tax
Receipt sequence No. or Receipt No. : Bar Code

13.1 ARTS XML Instance Document – The customer receives the electronic receipt that various advertising information was added【XML-14】:

```
<?xml version="1.0" encoding="utf-8"?>
<!--Various adverting information added digital receipt-->
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
 <Transaction>
  <BusinessUnit>
   <UnitID Name="Shiojiri Station Store">WWWWXXXX</UnitID>
   <Address>
    <AddressLine>1234-zzz</AddressLine>
    <AddressLine>Shiojiri-shi Hirooka</AddressLine>
    <PostalCode>399-x567</PostalCode>
   </Address>
  </BusinessUnit>
  <Logo LogoFormat="BMP">
   <FileName>combininakamura.bmp</FileName>
  </Logo>
   <OperatorID OperatorName="Ota zaaky">56784</OperatorID>
  <ReceiptDateTime>2016-05-04T18:13:51</ReceiptDateTime>
  <RetailTransaction>
    <LineItem>
     <Sale>
      <ItemID Name="Non Alcoholic Beer">1022585345677</ItemID>
      <ExtendedAmount>720</ExtendedAmount>
      <Quantity>6</Quantity>
     </Sale>
     <SequenceNumber>1</SequenceNumber>
    </LineItem>
    <LineItem>
     <Sale>
      <ItemID Name="XXX Chewing Gum">1223045899786</ItemID>
      <ExtendedAmount>240</ExtendedAmount>
      <Quantity>2</Quantity>
     </Sale>
     <SequenceNumber>2</SequenceNumber>
    </LineItem>
    <LineItem>
     <Sale>
      <ItemID Name="Matsumoto Green Tea">1056767893345</ItemID>
      <ExtendedAmount>180</ExtendedAmount>
      <Quantity>1</Quantity>
     </Sale>
     <SequenceNumber>3</SequenceNumber>
    </LineItem>
    <LineItem>
     <Sale>
      <ItemID Name="Paper Diaper Merry-san">1035354589032</ItemID>
      <ExtendedAmount>4000</ExtendedAmount>
```

```
        <Quantity>4</Quantity>
      </Sale>
      <SequenceNumber>4</SequenceNumber>
    </LineItem>
    <!-- Advertising is described below -->
    <LineItem>
      <Advertising>
        <AdvertisingID>123123</AdvertisingID>
        <ImageData TypeCode="BMP">dkaoeie4</ImageData>
        <Text>
          Matsumoto Green Tea Latte
           Next Month Release!
          Relax in the deep fragrance and gentle sweetness
        </Text>
        <URI>http://matsumotogreentealatte.com/</URI>
      </Advertising>
      <SequenceNumber>5</SequenceNumber>
    </LineItem>
     <LineItem>
      <Tender TenderType="Cash">
        <Amount>5551</Amount>
      </Tender>
      <SequenceNumber>6</SequenceNumber>
    </LineItem>
    <Total TotalType="TransactionGrossAmount">5140</Total>
    <Total TotalType="TransactionNetAmount">5140</Total>
    <Total TotalType="TransactionGrandAmount">5551</Total>
    <Total TotalType="TransactionTaxAmount">411</Total>
  </RetailTransaction>
 </Transaction>
</DigitalReceipt>
```

22. Use Case: Operator information, order number by the order entry device were added on the digital receipt (V3.1.0)

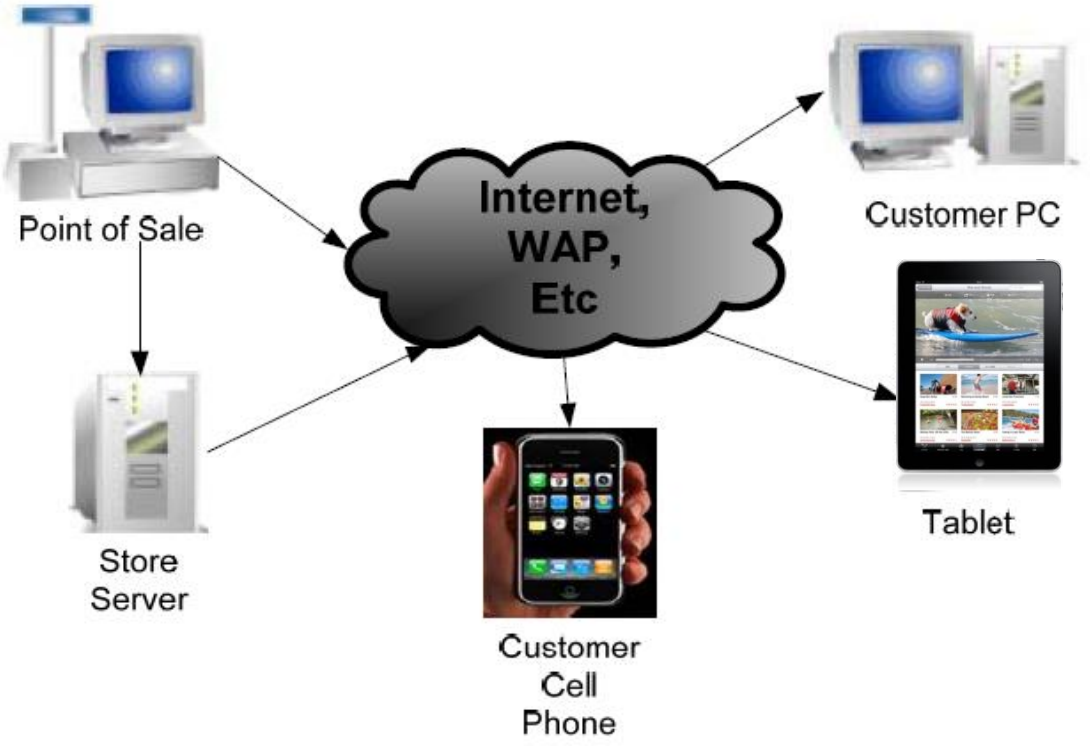


Figure 22:Operator information, order number by the order entry device were added on the digital receipt

Digital receipt was issued with the operator information of server, casher, order taker,… and order number that was issued by the order entry device. The customer receives the digital receipt information after pay the bill at the restaurant.

Operator information was generated according to the following information.

【Operator Type Information】

・Casher
・Server
・Order taker
・Clerk
・Expediter
・Bar Tender

The order number by the order entry device is also attached.

By using the information, it is useful to make a better service to identify the customer claims and / or good services.

22.1 Scenario: Operator information, order number by the order entry device were added on the digital receipt (V3.1.0)

Brief Description

The Customer received the receipt with the operator information and order number by the order entry device after the payment of the dinner at the restaurant. By printing the operator information, it is useful to make a better service to identify the customer claim and / or good services. Same information will be included in the digital receipt.

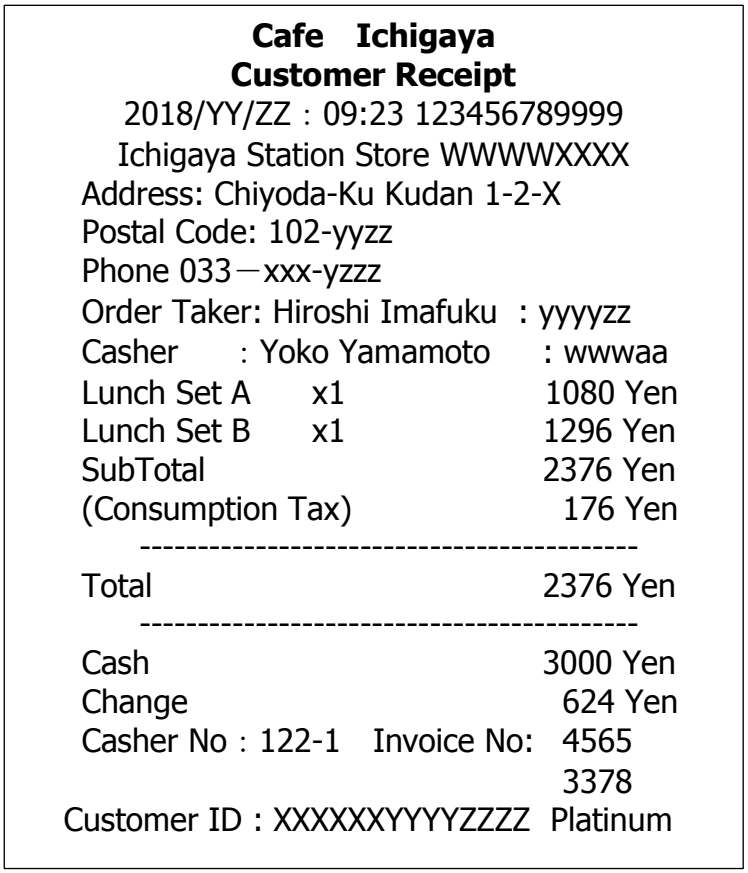
Scenario Description

Hideo visited the “Café Ichigaya” for the lunch with his wife since he is the member of customer loyalty program of that restaurant. Hideo ordered Lunch Set A (1000 yen) and his wife ordered Lunch Set B (1200 yen) at the table through the Mr. Imafuku since he is order taker of that table.

After the lunch, Hideo paid the bill at the casher and casher operator was Ms. Yamamoto. On the receipt there was an order number that was issued by order entry device. After the lunch, Hideo confirmed the casher operator and order taker through the delivered digital receipt by using the smart phone.

And thought that if he visited that restaurant again, would like to be served by Mr. Imafuku and Ms. Yamamoto since their services were excellent.

Received receipt is listed below.



Cafe Ichigaya
Customer Receipt
2018/YY/ZZ：09:23 123456789999
Ichigaya Station Store WWWWXXXX
Address: Chiyoda-Ku Kudan 1-2-X
Postal Code: 102-yyzz
Phone 033－xxx-yzzz
Order Taker: Hiroshi Imafuku : yyyyzz
Casher ：Yoko Yamamoto : wwwaa
Lunch Set A x1 1080 Yen
Lunch Set B x1 1296 Yen
SubTotal 2376 Yen
(Consumption Tax) 176 Yen

Total 2376 Yen

Cash 3000 Yen
Change 624 Yen
Casher No：122-1 Invoice No: 4565
3378
Customer ID : XXXXXXYYYYZZZZ Platinum

Data

Restaurant information
- Restaurant name
- Address
- Phone number
- Corporate Logo

Customer ID
Loyalty Program ID
Business Date
Meal Menu Name
- Quantity
- Price

Total Amount
Tax

Change
People Count
Table Number（Seat Number）
Receipt Number
Party Count
Register Number
Operator ID

13.1 ARTS XML Instance Document – Issuing of Digital Receipt with the information of Operator, Order number by the order entry device.【XML-15】:

```
<?xml version="1.0" encoding="utf-8"?>
<!--Operator info. OES invoice number info. added digital receipt   -->
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
 <Transaction>
  <BusinessUnit>
    <UnitID>Cafe Ichigaya</UnitID>
   <Address>
    <AddressLine>1-2-X</AddressLine>
    <City>Chiyoda-ku Kudan</City>
    <PostalCode>102-yyzz</PostalCode>
   </Address>
    <Telephone>
    <AreaCode>033</AreaCode>
    <LocalNumber>xxxyzzz</LocalNumber>
   </Telephone>
  </BusinessUnit>
  <WorkstationID>122-1</WorkstationID>
  <!-- Operator Info. -->
  <OperatorID OperatorType="Cashier" OperatorName="Yoko Yamamoto">wwwaa</OperatorID>
  <OperatorID OperatorType="OrderTaker" OperatorName="Hiroshi Imafuku">yyyyzz</OperatorID>
  <ReceiptDateTime>2018-09-22T09:23:00</ReceiptDateTime>
  <ReceiptNumber>123456789999</ReceiptNumber>
   <!-- Order Number by OES -->
   <InvoiceNumber>4565</InvoiceNumber>
  <!-- Multiple Order Number by OES
   <InvoiceNumber>3378</InvoiceNumber> -->
    <RetailTransaction>
    <LineItem>
     <Sale>
      <ItemID Name="Lunch Set A">123</ItemID>
      <ExtendedAmount>1080</ExtendedAmount>
     </Sale>
     <SequenceNumber>1</SequenceNumber>
   </LineItem>
   <LineItem>
    <Sale>
      <ItemID Name="Lunch Set B">124</ItemID>
      <ExtendedAmount>1296</ExtendedAmount>
    </Sale>
    <SequenceNumber>2</SequenceNumber>
   </LineItem>
   <LineItem>
    <Tender>
      <Amount>3000</Amount>
```

```
        <TenderChange>
          <Amount>624</Amount>
        </TenderChange>
      </Tender>
      <SequenceNumber>3</SequenceNumber>
    </LineItem>
    <Total TotalType="TransactionGrossAmount">2376</Total>
    <Total TotalType="TransactionNetAmount">2376</Total>
    <Total TotalType="TransactionGrandAmount">2376</Total>
    <Total TotalType="TransactionTaxIncluded">176</Total>
    <Customer>
      <CustomerID>xxxxxyyyyyzzzz</CustomerID>
    </Customer>
    <LoyaltyAccount>
      <LoyaltyProgram>
        <LoyaltyProgramID>44456yyy</LoyaltyProgramID>
      </LoyaltyProgram>
    </LoyaltyAccount>
  </RetailTransaction>
 </Transaction>
</DigitalReceipt>
```

23. Use Case: Party size, party count, Service charges and table numbers are added digital receipt (V3.1.0)

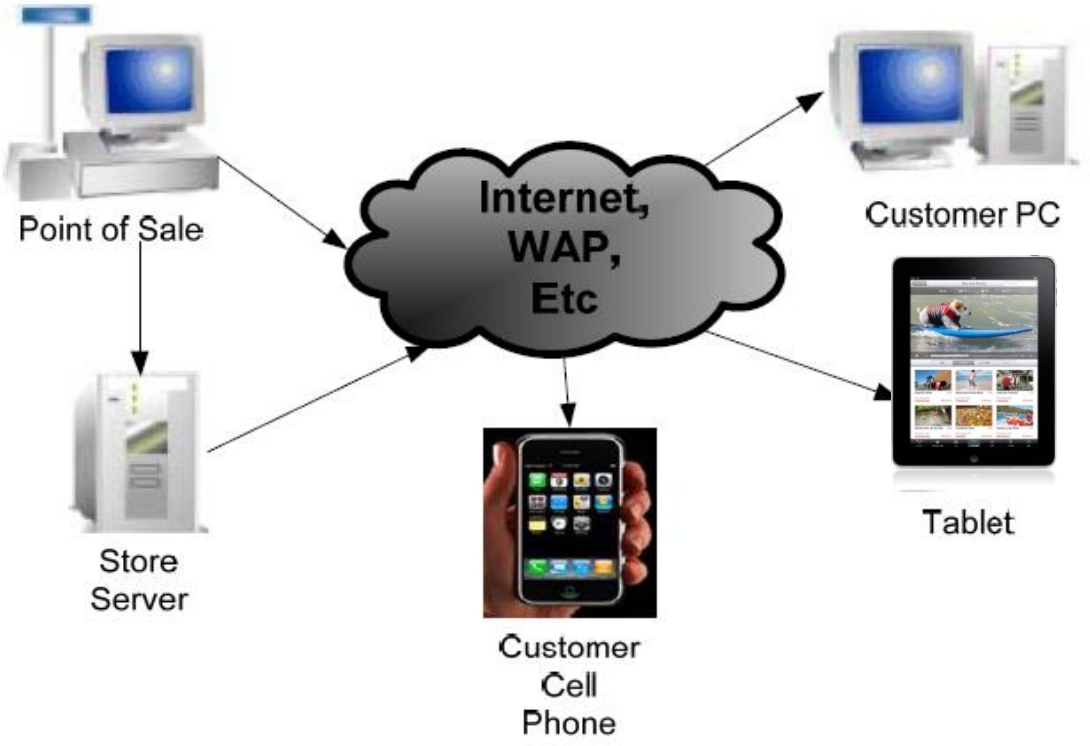


Figure 23:Party size, party count, service charges and table numbers are added digital receipt

Issue the receipt with the information of party size (number of the people having a meal together), party count (number of the party of the day) service charges and table number (location ID of seat and / or table).
Party size, party count and table numbers are based on the above information.

23.1 Scenario: Customer receives the digital receipt when he had a meal at the restaurant with the information of party size, party count, service charges and table information.

Brief Description

The customer had a meal at the restaurant and paid the bill. The customer receives the receipt with the information of party size, party count, service charges and table information. And same information is added on the digital receipt.

Scenario Description

Hideo visited the Kappo restaurant “Kudan” to have a dinner with his wife since he is a member of its customer loyalty program.

At the “Kudan” restaurant, they can have cocktails in the bar area prior to get enter the reserved room.

At the Bar, Hideo had a glass of beer (650 yen) and his wife had a glass of red wine (800 yen) and Bar Tender Kazunori served them. They had a conversation for a moment in the bar.

After the moment, they were guided to the room “Bancho”. At the room Masako was assigned order taker and she served the green tea and hot towel for them. Then they ordered the dinner courses, Hideo ordered Matsukaze course (10800 yen) and his wife ordered Chidori course (8640 yen).

After the meal Hideo paid the bill by cash at the casher where casher operator Akira working.

On the receipt, there are meal item and price information. In addition to that, there are some information that is to say, service charge, table charge, room number, party size, party count and operator ID information such as casher, order taker and bar tender. In addition to that, the order number that was issued by the order entry device. On the digital receipt all of the same information is added.

Received receipt sample is listed below.

Kappo Restaurant Kudan
Customer Receipt
2016/04/07 : 09:45 No.123456789999
Ichigaya Station Store : WWWWXXXX
Address : Chiyoda-Ku Kudan 1-Y-X
Postal Code : 102-zzyy Phone 033-xxx-zzzz
Order Taker: Masako / yyyyzz
Bar Tender : Kazunori / zzaabb
Room : Bancho People Count : 2 Party Count: 10

Drink		
Glass Beer	x1	650 Yen
Glass Wine(Red)	x1	800 Yen
Meal		
Matsukaze Dinner	x1	10800 Yen
Chidori Dinner	x1	8640 Yen
Subtotal		20890 Yen
(Consumption Tax)		1547 Yen
Service Charge(10%)		2089 Yen
Table Charge(10%)		2089 Yen
Subtotal		4178 Yen
(Consumption Tax)		309 Yen
Total		25068 Yen
(Consumption Tax)		1857 Yen
Cash		30000 Yen
Change		4932 Yen

Customer ID : XXXXXXYYYYZZZZ Platinum
Casher : Akira / zzzzz

Data

Restaurant information
- Restaurant name
- Address
- Phone number
- Corporate logo

Customer ID
Loyalty Program ID
Business date
Meal Menu Name
    Quantity
    Price
Total Amount
Tax
Change
Party size
Table ID（Seat ID, Room ID）
Party count
Casher ID
Operator ID
Order Number

13.1 ARTS XML Instance Document – Issue the digital receipt with the information of party size, party count, service charges and table number.【XML-16】:

```
<?xml version="1.0" encoding="utf-8"?>
<!--RoomCharge、ServiceCharge、OperatorInfo.,OES InvoiceNumbers are added Digital Receipt  -->
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
 <Transaction>
  <BusinessUnit>
   <UnitID Name="Ichigaya Station Store">WWWXXXX</UnitID>
   <Address>
    <AddressLine>Chiyoda-Ku Kudan  1-Y-X</AddressLine>
   </Address>
  </BusinessUnit>
  <Logo LogoFormat="BMP">
   <FileName>Kapp Restaurant Kudan.bmp</FileName>
  </Logo>
  <POSLogDateTime>2016-04-07T09:45:00</POSLogDateTime>
  <OperatorID OperatorType="Cashier" OperatorName="Akira">zzzzz</OperatorID>
  <OperatorID OperatorType="OrderTaker" OperatorName="Masako">yyyyzz</OperatorID>
  <OperatorID OperatorType="BarTender" OperatorName="Kazunori">zzaabb</OperatorID>
  <ReceiptDateTime>2016-04-07T09:45:00</ReceiptDateTime>
  <ReceiptNumber>123456789999</ReceiptNumber>
  <!--Invoice Number(OES）  -->
  <InvoiceNumber>334456</InvoiceNumber>
  <!--
  <InvoiceNumber>556690</InvoiceNumber>-->
  <RetailTransaction>
   <LineItem>
    <Sale>
     <ItemID Name="Glass Beer">DBBB33</ItemID>
     <ExtendedAmount>650</ExtendedAmount>
     <Quantity>1</Quantity>
    </Sale>
    <SequenceNumber>1</SequenceNumber>
   </LineItem>
   <LineItem>
```

```
    <Sale>
      <ItemID Name="Glass Wine(Red)">DWRR11</ItemID>
      <ExtendedAmount>800</ExtendedAmount>
      <Quantity>1</Quantity>
    </Sale>
    <SequenceNumber>2</SequenceNumber>
  </LineItem>
  <LineItem>
    <Sale>
      <ItemID Name="Matsukaze Dinner">RCCC22</ItemID>
      <ExtendedAmount>10800</ExtendedAmount>
      <Quantity>1</Quantity>
    </Sale>
    <SequenceNumber>3</SequenceNumber>
  </LineItem>
  <LineItem>
    <Sale>
      <ItemID Name="Chidori Dinner">RCCC41</ItemID>
      <ExtendedAmount>8640</ExtendedAmount>
      <Quantity>1</Quantity>
    </Sale>
    <SequenceNumber>4</SequenceNumber>
  </LineItem>
  <!-- Regarding the ServiceCharge, RoomCharge,TableCharge, ItemType="Service" and
       ItemSubType="ServiceCharge" are used.-->
  <LineItem>
     <Sale ItemType="Service" ItemSubType="ServiceCharge">
      <ItemID Name="ServiceCharge(10%)">SC311</ItemID>
      <ExtendedAmount>2089</ExtendedAmount>
    </Sale>
    <SequenceNumber>5</SequenceNumber>
  </LineItem>
  <LineItem>
    <Sale ItemType="Service" ItemSubType="RoomCharge">
      <ItemID Name="RoomCharge/TableCharge(10%)">TBC123</ItemID>
      <ExtendedAmount>2089</ExtendedAmount>
    </Sale>
    <SequenceNumber>6</SequenceNumber>
  </LineItem>
  <LineItem>
    <Tender>
      <Amount>30000</Amount>
      <TenderChange TenderType="Cash">
        <Amount>4932</Amount>
      </TenderChange>
    </Tender>
    <SequenceNumber>7</SequenceNumber>
  </LineItem>
  <!--TransactionDineInAmount,TransactionDineInTaxAmount,TransactionToGoAmount,
      TransactionToGoTaxAmount,TransactionServiceFeeAmount,TransactionServiceFeeTaxAmount
      are added in the TotalType
   <Total TotalType="TransactionDineAmount"> 20890</Total>
   <Total TotalType="TransactionServiceFeeAmount">4178</Total>。 -->
   <Total TotalType="TransactionGrossAmount">20890</Total>
   <Total TotalType="TransactionNetAmount">25068</Total>
   <Total TotalType="TransactionGrandAmount">25068</Total>
   <Total TotalType="TransactionTaxIncluded">1857</Total>
    <LoyaltyAccount>
     <LoyaltyProgram>
```

```
        <LoyaltyProgramID Name="Kdan Tomonokai"/>
        <LoyaltyAccountID Level="Platinum">XXXXXXYYYYZZZZ</LoyaltyAccountID>
      </LoyaltyProgram>
    </LoyaltyAccount>
    <!-- TableID, SeatID will be derived from FoodService.(Since they are coming from
        FoodSeriveBusiness）     -->
    <Foodservice>
      <TableID>Bancho</TableID>
      <SeatID>5</SeatID>
      <PartySize>2</PartySize>
    </Foodservice>
  </RetailTransaction>
 </Transaction>
</DigitalReceipt>
```

24. Use Case: Digital receipt with the use of prepaid type gift cards.(V3.1.0)

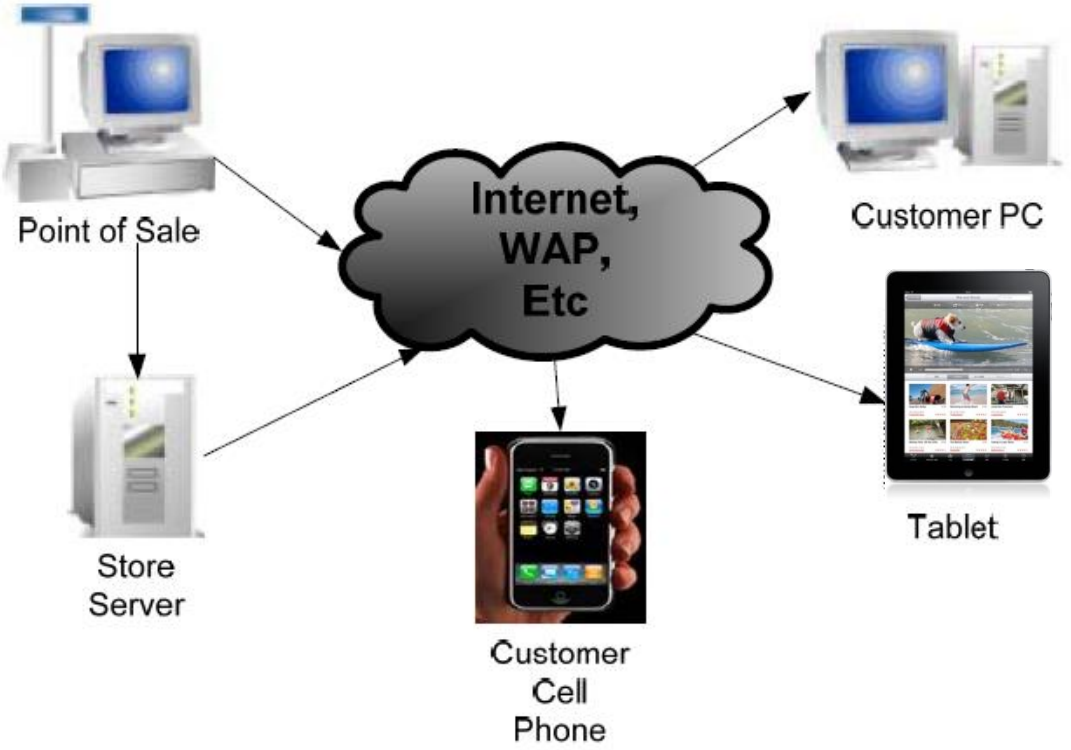


Figure 24: Digital receipt with the use of prepaid type gift card

The customer charged the prepaid type gift card and purchased the items by using the gift card.

24.1 Scenario: The customer charged the money to the prepaid type gift card and bought the item by using it.

Brief Description

a)Issue the receipt when prepaid type gift card was money charged and its charged amount expiration date is updated.

The customer owns prepaid type gift card. Current balance on the gift card was not enough to buy the targeted item. Therefore, the customer charged the money into the gift card. When the money charge was done, the charged amount expiration data was updated by the accumulated amount. Money charged result is showed on the receipt as well as digital receipt.

b)Discount by using the gift card

The customer got the 3 % discount, since he used the gift card.

Scenario Description

a) Issue the digital receipt, with the description of money amount expiration date update by the money charge for the gift card.

Since Hideo visits the Oishi-Burger Hirayama store frequently, he had a prepaid type its gift card.

Because the gift card remaining money amount was less balance and it was only 725 yen.

He charged 2000 yen into the gift card on April 16 2016. Then the updated its money amount expiration date became April 16 2018. After the charge, Hideo received the digital receipt with update of this money amount expiration date.

Yummy Burger
Customer Receipt
May/11/2016 13:35 No. 123456789999
Hirayama Store YYYWWXX
Address : Matsumoto–city Hirayama 3-4-Z
Postal Code:399-pppp Phone : 0263-zzY-XXXX
Sales Person : Yumiko Tanaka /uuzz

Yummy Burger Card Charge
Charge by Cash 2000 Yen

Total 2000 Yen
Change 0 Yen

Previous Yummy Card Balance 725 Yen
Updated Yummy Card Balance 2725 Yen
Card No. : ******4567
Expiration Date May/11/2018
Customer ID : XXXXXXYYYYZZZZ

b) Payment by the prepaid type gift card that it is already money charged

Hideo visited the Yummy Burger Hirayama store and ordered the coffee. He used the prepaid card type gift card that he charged the money yesterday. Since he used the Yummy Burger Gift card, he got the 30 yen discount for the coffee. (Price of coffee became 270 yen since he got 30 yen discount by using the Yummy Burger gift card. If customer uses the Yummy Burger gift card normally customer gets the discount but it is not for everything. It might be very by corporate rule.)

By this payment, Hideo's gift card balance changed from 2725 yen to 2455 yen.

And money charge expiration date updated to May 15 2018, it is 2 years later from now.

Yummy Burger
Customer Receipt
May/15/2016 18:05 No.123456789999
Hirayama Store: YYYWWXX
Address : Hirayama 3-4-Z, Matsumoto City
Postal Code : 399-pppp
Sales Person: Akira Yamashita / ywzw

Blended Coffee S	X1	300 Yen
Yummy Card Discount	X1	-30 Yen
Total		270 Yen
(Tax)		20 Yen

Paid by Yummy Card	270 Yen
(Tax)	20 Yen
Change	0 Yen

Previous Yummy Card Balance	2725 Yen
Updated Yummy Card Balance	2455 Yen

Card No. : ******45677
Expiration Date May/15/2018
Customer ID : XXXXXXYYYYZZZZ

Data

Basic Receipt data

Gift card
- Card number
- Expiration date
- Charged amount
- Charged amount expiration date

Customer
- Customer ID

13.1 ARTS XML Instance Document – Issuing the digital receipt with the description of money amount charge for the gift card and updating its money amount expiration date. 【XML-17】:

```
<?xml version="1.0" encoding="utf-8"?>
<!-- Money was charged and charged amount's expiration date was updated.Such are described
```

```
    Digital Receitp-->
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
 <Transaction>
  <BusinessUnit>
   <UnitID TypeCode="RetailStore" Name="Yummy Burger">YYYWWXX</UnitID>
   <Address AddressType="RetailStore">
    <AddressLine>Hirayama   3-4-Z</AddressLine>
    <City>Matsumoto</City>
    <PostalCode>399-pppp</PostalCode>
   </Address>
   <Telephone>
    <LocalNumber>0263-zzY-XXXX</LocalNumber>
   </Telephone>
  </BusinessUnit>
  <OperatorID OperatorType="Cashier" OperatorName="Yumiko Tanaka">uuzz</OperatorID>
  <RetailTransaction>
   <LineItem>
    <StoredValueFundSale Action="Recharge">
     <ItemID Name="Yummy Burger Card">******4567</ItemID>
     <ExtendedAmount>2000</ExtendedAmount>
    </StoredValueFundSale>
    <SequenceNumber>1</SequenceNumber>
   </LineItem>
   <LineItem>
    <Tender TenderType="Cash">
     <Amount>2000</Amount>
     <GiftCard>
      <CardNumber>******4567</CardNumber>
      <ExpirationDate>2018-05-11</ExpirationDate>
      <InitialBalance>725</InitialBalance>
      <CurrentBalance>2725</CurrentBalance>
     </GiftCard>
    </Tender>
    <SequenceNumber>2</SequenceNumber>
   </LineItem>
   <Total TotalType="TransactionGrossAmount">2000</Total>
   <Total TotalType="TransactionNetAmount">2000</Total>
   <Total TotalType="TransactionGrandAmount">2000</Total>
   <Total TotalType="TransactionTaxAmount">0</Total>
  </RetailTransaction>
 </Transaction>
</DigitalReceipt>
```

Payment by the already money charged pre-paid type gift card.【XML-18】

```
<?xml version="1.0" encoding="utf-8"?>
<!-- Pre-charged type gift card is used Digital Receipt-->
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
 <Transaction>
  <BusinessUnit>
   <UnitID TypeCode="RetailStore" Name="Yummy Burger">YYYWWXX</UnitID>
   <Address AddressType="RetailStore">
    <AddressLine>Hirayama   3-4-Z</AddressLine>
    <City>Matsumoto</City>
    <PostalCode>399-pppp</PostalCode>
   </Address>
   <Telephone>
    <LocalNumber>0263-zzY-XXXX</LocalNumber>
   </Telephone>
```

```
    </BusinessUnit>
    <OperatorID OperatorType="Cashier" OperatorName="Akira Yamashita">ywzw</OperatorID>

    <RetailTransaction>
      <LineItem>
        <Sale>
          <ItemID Name ="Blended Coffee S">678966</ItemID>
          <ExtendedAmount>270</ExtendedAmount>
          <Quantity>1</Quantity>
          <RetailPriceModifier MethodCode="TargetedOffer">
            <SequenceNumber>1</SequenceNumber>
            <Amount Action="Subtract">30</Amount>
          </RetailPriceModifier>
        </Sale>
        <SequenceNumber>2</SequenceNumber>
      </LineItem>
       <LineItem>
       <Tender TenderType="GiftCard">
          <Amount>270</Amount>
          <GiftCard>
            <CardNumber>****4567</CardNumber>
            <ExpirationDate>2018-05-15</ExpirationDate>
            <InitialBalance>2725</InitialBalance>
            <CurrentBalance>2455</CurrentBalance>
          </GiftCard>
        </Tender>
        <SequenceNumber>3</SequenceNumber>
      </LineItem>
      <Total TotalType="TransactionGrossAmount">300</Total>
      <Total TotalType="TransactionNetAmount">270</Total>
      <Total TotalType="TransactionGrandAmount">270</Total>
      <Total TotalType="TransactionTaxIncluded">20</Total>
    </RetailTransaction>
  </Transaction>
</DigitalReceipt>
```

25. Use Case: To go and Dine In , 2 kinds of food ordered Digital Receipt (V3.1.0)

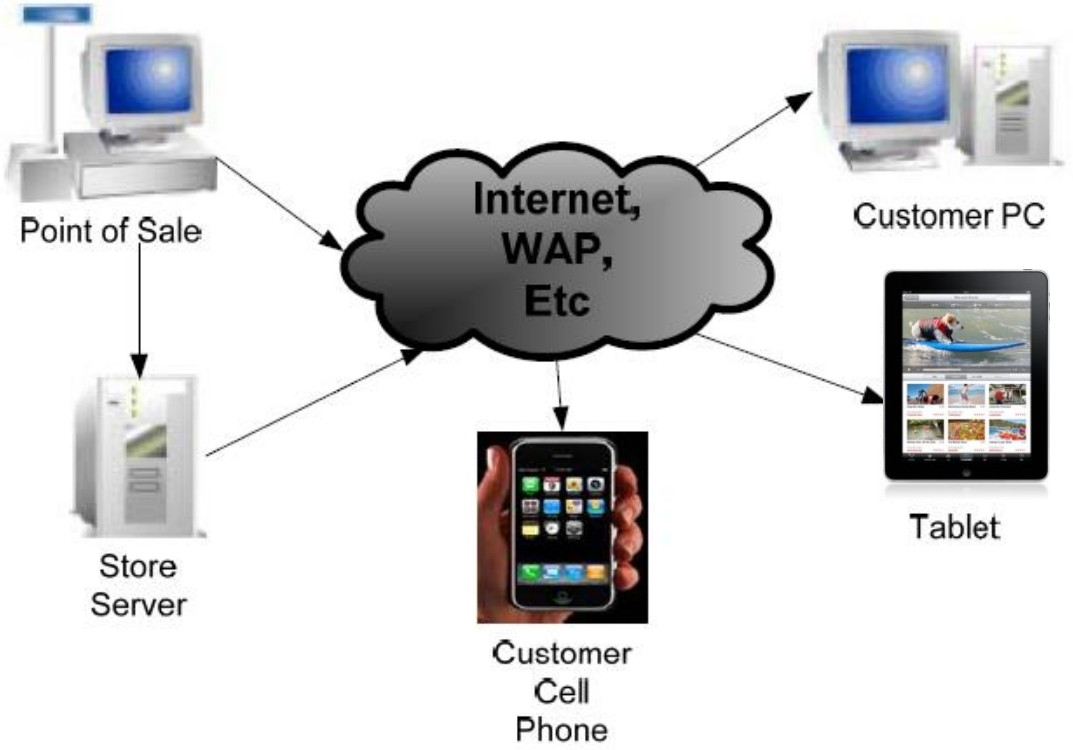


Figure 25:To Go and Dine In, 2 kinds of food ordered digital receipt

Print the “Dine In” item and “To Go” item separately on the receipt.
Subtotal amount of “Dine In” and “To Go” are calculated separately, since those tax rate might be different.

25.1 Scenario: Customer received the digital receipt To Go and Dine In were added up individually.

Brief Description

The customer purchased the 2 kinds of foods for “Dine In” and “To Go”. On the receipt order number is printed that is issued from the order entry device. The customer had the “Dine In” foods in the restaurant and go back with the “To Go” foods.

Scenario Description

Issuing the digital receipt that has 2 kinds of foods such as “Dine In” and “To Go”.

Hideo visited his favorite Coffee shop “Okada” Okahiro station store with his kids Takashi. In the Coffee shop, Hideo ordered blended coffee and ice coffee for the “Dine In”.

In addition to that, Hideo ordered the ice coffee and sandwich for his wife Noriko who are waiting them at his house as “To Go”

He paid the cash at the casher 1440 yen for the foods he ordered.

Coffee Shop
Okada
Okahiro station store : zzz7899
Customer Receipt

Postal Code : 399-zzzZ
Address: Hara 90, Shiota-City
Phone : 0263-zzz-yyzz

Casher : Mamoru Okada / 665zz
OES Order No. 485567
Receipt No.124566

Dine In		
Blended Coffee S	x1	220 Yen
Iced Coffee S	x1	280 Yen
To Go		
Mixed sandwich M	x2	660 Yen
Iced Coffee S	x1	280 Yen
Dine In Total		500 Yen
(Consumption Tax(8%))		(37)Yen
To Go Total		940 Yen
(Consumption Tax(8%))		(70) Yen
Total		1440 Yen
(Consumption Tax(8%))		(107)Yen
Paid by Credit Card		1440 Yen
Credit Card No. :		**********xxyy

After 10 pm Dine In food need to pay the service charge. Then bill will be changed

Coffee Shop
Okada
Okahiro station store : zzz7899
Customer Receipt
Postal Code : 399-zzzZ
Address: Hara 90, Shiota-City
Phone : 0263-zzz-yyzz

Casher : Mamoru Okada / 665zz
OES Order No. 485567
Receipt No.124566

Dine In		
*Blended Coffee S	x1	220 Yen
*Iced Coffee S	x1	280 Yen
To Go		
Mixed sandwich M	x2	660 Yen
Iced Coffee S	x1	280 Yen
Dine In Total		500 Yen
(Consumption Tax(8%))		(37)Yen
***ServiceFee Total**		50Yen
(Consumption Tax(8%))		(4)Yen
To Go Total		940 Yen
(Consumption Tax(8%))		(70)Yen
Total		1490 Yen
(Consumption Tax(8%))		(111)Yen
Paid by Credit Card		1490 Yen
Credit Card No. :		**********xxyy

Data

Coffee Shop Store
Store Name
    Address
    Phone Number
    Corporate Logo
Receipt issued date
Receipt Number.
Operator
Operator ID
    Name

Subtotal amount
Tax
Receipt Number

13.1 ARTS XML Instance Document – Issuing the digital receipt for the 2 kinds of food such as “Dine In” and “To Go” .【XML-19】:

```
<?xml version="1.0" encoding="utf-8"?>
<!--DineIn, ToGo is existing Digital Receipt-->
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
 <Transaction>
  <BusinessUnit>
   <UnitID TypeCode="RetailStore" Name="Coffee Shop Okada">456678</UnitID>
   <Address AddressType="RetailStore">
    <AddressLine>Hara 90</AddressLine>
    <City>Shiota</City>
    <PostalCode>399-zzzZ</PostalCode>
   </Address>
   <Telephone>
    <LocalNumber>0263-zzz-yyzz</LocalNumber>
   </Telephone>
  </BusinessUnit>
  <ReceiptNumber>124566</ReceiptNumber>
  <InvoiceNumber>485567</InvoiceNumber>
  <RetailTransaction>
   <!--LineItems of Dine IN -->
   <LineItem>
    <Sale>
     <ItemID Name="Blended Coffe S">678966 </ItemID>
     <ExtendedAmount>220</ExtendedAmount>
     <Quantity>1</Quantity>
     <!--Derived from POSLog FoodService
     <Foodservice DestinationType="DineIn"></Foodservice>-->
    </Sale>
    <SequenceNumber>1</SequenceNumber>
   </LineItem>
   <LineItem>
    <Sale>
     <ItemID Name="Iced Coffee S">554433</ItemID>
     <ExtendedAmount>280</ExtendedAmount>
     <Quantity>1</Quantity>
     <!--
     <Foodservice DestinationType="DineIn"></Foodservice>-->
    </Sale>
    <SequenceNumber>2</SequenceNumber>
   </LineItem>
   <!--LineItems of To Go -->
   <LineItem>
    <Sale>
     <ItemID Name="Mixed Sandwich M">789956</ItemID>
     <ExtendedAmount>660</ExtendedAmount>
     <Quantity>2</Quantity>
     <!--
     <Foodservice DestinationType="ToGo"></Foodservice>-->
    </Sale>
    <SequenceNumber>3</SequenceNumber>
   </LineItem>
   <LineItem>
```

```
      <Sale>
        <ItemID Name="Iced Coffee S">554433</ItemID>
        <ExtendedAmount>280</ExtendedAmount>
        <Quantity>1</Quantity>
        <!--
        <Foodservice DestinationType="ToGo"></Foodservice>-->
      </Sale>
      <SequenceNumber>4</SequenceNumber>
    </LineItem>
    <LineItem>
      <Tender TenderType="CreditDebit">
        <Amount>1440</Amount>
        <CreditDebit TypeCode="Visa">
          <PrimaryAccountNumber>**********xxyy</PrimaryAccountNumber>
        </CreditDebit>
      </Tender>
      <SequenceNumber>5</SequenceNumber>
    </LineItem>
    <!-- Total of Dine In   -->
<!-- <Total TotalType="TransactionDineInAmount">500</Total>
    <Total TotalType="TransactionDineInTaxAmount">37</Total>-->
    <!-- Total of To Go      -->
<!-- <Total TotalType="TransactionToGoAmount">940</Total>
    <Total TotalType="TransactionToGoTaxAmount">70</Total>-->
     <Total TotalType="TransactionGrossAmount">1440</Total>
    <Total TotalType="TransactionTaxIncluded">107</Total>
   </RetailTransaction>
  </Transaction>
 </DigitalReceipt>
```

13.12ARTS XML Instance Document – Issuing the digital receipt for the 2 kinds of food such as “Dine In” and “To Go” with service charge for the “Dine In” since time was after 10pm.【XML-20】:

```
<?xml version="1.0" encoding="utf-8"?>
<!--DineIn and ToGo Items are existing and Service charge was added for the Dine in since time was over 10pm   -->
<DigitalReceipt xmlns="http://www.nrf-arts.org/IXRetail/namespace/" MajorVersion="3">
 <Transaction>
  <BusinessUnit>
   <UnitID TypeCode="RetailStore" Name="Coffee Shop Okada">456678</UnitID>
   <Address AddressType="RetailStore">
    <AddressLine>Hara 90</AddressLine>
    <City>Shiota</City>
    <PostalCode>399-zzzZ</PostalCode>
   </Address>
   <Telephone>
    <LocalNumber>0263-zzz-yyzz</LocalNumber>
   </Telephone>
  </BusinessUnit>
  <ReceiptNumber>124566</ReceiptNumber>
  <InvoiceNumber>485567</InvoiceNumber>
  <RetailTransaction>
   <!--LineItems for DineIn-->
   <LineItem>
    <Sale>
     <ItemID Name="Blended Coffee S">678966 </ItemID>
```

```
      <ExtendedAmount>220</ExtendedAmount>
      <Quantity>1</Quantity>
      <!--
      <Foodservice DestinationType="DineIn"></Foodservice>-->
    </Sale>
    <SequenceNumber>1</SequenceNumber>
  </LineItem>
  <LineItem>
    <Sale>
      <ItemID Name="Iced Coffee S">554433</ItemID>
      <ExtendedAmount>280</ExtendedAmount>
      <Quantity>1</Quantity>
      <!--
      <Foodservice DestinationType="DineIn"></Foodservice>-->
    </Sale>
    <SequenceNumber>2</SequenceNumber>
  </LineItem>
  <!--LineItems for ToGo-->
  <LineItem>
    <Sale>
      <ItemID Name="Mixed Sandwitch M">789956</ItemID>
      <ExtendedAmount>660</ExtendedAmount>
      <Quantity>2</Quantity>
      <!--
      <Foodservice DestinationType="ToGo"></Foodservice>-->
    </Sale>
    <SequenceNumber>3</SequenceNumber>
  </LineItem>
  <LineItem>
    <Sale>
      <ItemID Name="Iced Coffee S">554433</ItemID>
      <ExtendedAmount>280</ExtendedAmount>
      <Quantity>1</Quantity>
      <!--
      <Foodservice DestinationType="ToGo"></Foodservice>-->
    </Sale>
    <SequenceNumber>4</SequenceNumber>
  </LineItem>
  <LineItem>
    <Sale ItemType="Service" ItemSubType="ServiceCharge">
      <ItemID Name="Service Charge 10%">SC10</ItemID>
      <ExtendedAmount>50</ExtendedAmount>
      <ItemLink>1</ItemLink>
      <ItemLink>2</ItemLink>
      <!--
      <Foodservice DestinationType="DineIn"></Foodservice>-->
    </Sale>
    <SequenceNumber>5</SequenceNumber>
  </LineItem>
  <LineItem>
    <Tender TenderType="CreditDebit">
      <Amount>1490</Amount>
      <CreditDebit TypeCode="Visa">
        <PrimaryAccountNumber>************xxyy</PrimaryAccountNumber>
      </CreditDebit>
    </Tender>
    <SequenceNumber>5</SequenceNumber>
  </LineItem>
  <!-- Total DineIn  -->
```

```
      <!--
      <Total TotalType="TransactionDineInAmount">500</Total>
      <Total TotalType="TransactionDineInTaxAmount">37</Total>-->
      <!-- Total ToGo     -->
      <!--
      <Total TotalType="TransactionToGoAmount">940</Total>
      <Total TotalType="TransactionToGoTaxAmount">70</Total>-->
      <!-- Total ServiceFeeo     -->
      <!--
      <Total TotalType="TransactionServiceFeeAmount">50</Total>
      <Total TotalType="TransactionToGoTaxAmount">4</Total>-->
      <Total TotalType="TransactionGrandAmount">1490</Total>
      <Total TotalType="TransactionTaxIncluded">111</Total>
    </RetailTransaction>
  </Transaction>
</DigitalReceipt>
```

Expression of the Total for the different taxation method

Tax is added at the POS (Outside Tax)

Name	Tax		Miscellaneous expenses (Service Charge,…)		Discount		Remarks
	w/	w/o	w/	w/o	w/	w/o	
Gross Amount		○		○		○	w/o miscellaneous expense w/o discount w/o Tax
Net Amount		○	○		○		w/ miscellaneous expense w/ discount w/o Tax
Grand Amount	○		○		○		w/ miscellaneous expense w/ discount w/ Tax
Tax Amount	○						Tax Amount

Tax is included the price(Included tax)

Name	Tax		Miscellaneous expenses (Service Charge,…)		Discount		Remarks
	w/	w/o	w/	w/o	w/	w/o	
Gross Amount	○			○		○	w/o miscellaneous expense w/ Tax
Net Amount	○		○		○		w/ miscellaneous expense w/ Tax
Grand Amount	○		○		○		w/ miscellaneous expense w/ Tax
Included Tax	○						Included Tax Amount

26. Document History

Version History

Ver	Date	Sections	Description of Change
1.0	2002/01/11	All	New Release
2.0	2011/01/26	All	Entire Rewrite following Use Case approach
3.0	2016/12/25	All	Sync with POSLog V6.0.0

27. Change History

Version 1

- Initial Release

Version 2

- a complete rewrite of schema, technical specification. Version 2 is built under the auspices of the ARTS XML Best Practics V1.3 and forms the foundation for a family of schemas derived from POSLog. Virtually all attributes, elements and complex types have been rewritten to bring this work into alignment with the widely adopted POSLog.

Version 3

- Completed the transformation to be the base class for POSLog
- Added new TotalTypes
- Added name to TotalBase
- Added Postal Order to TenderTypes
- Added CRIND and Mobile to Workstation TypeCodes
- Added WeatherReport complex type
- Added Level to LoyaltyAccountIDType
- Added Supplier and Accounting to MerchandiseHierarchyCommonData
- Added UnencryptedPAN to TenderCreditDebitBase

28. Committee Membership

Version 1.0

Member	Company
Scott Allan	@pos
Ron Brown	IRDA
Jim Galloway	NCR
Jim Greene	AfterBot
Eric Hawthorne *(chair)*	Sales Management Systems
Jim Nadler	AfterBot
Kyoko Ohshima	Panasonic
Galvin Peacock	Palm / IrDA
Bill Scales	TSG
Jagdeep Singh Sahota	VISA International
Eddy Marysin	Craft Soft Ltd.
Tyggvi M. Thordarson	HB International

Version 2.0

Chair:

Birame Sock	Third Solutions

ARTS Board Sponsor

Mike Julson	Escalate Retail

Members:

Hendrik Franco da Cruz	Wincor-Nixdorf
David Tran	Verizon Business
Dennis Paisley	NCR
Abe Zafar	Intuit
Moises Galindo	Versatil (Mexico)
Krystal Kolodziejak	Sasktel (Canada)
Asif Batada	Verizon Business
Jim Galloway	AfterBot
Richard Halter	ARTS