



Re-architecting the retail and consumer portal of a US entertainment company's wireless communication services

/// CASE STUDY



Highlights

Provide maintenance and support to the retail and consumer portal of a provider of wireless communication services and products of an entertainment company in US

Client Type

Mobile Virtual Network Operator

Industry

Communications

Type of Work

Application Development, Maintenance and Support

Mphasis helped re-architect and provide maintenance and support to the retail and consumer portal of a leading provider of wireless communication services

Client

Provider of premium wireless communication services and products specifically focused on families; a subsidiary of worldwide entertainment company in US

Objectives

- Re-engineer/ Re-architect the retail and consumer portal
- Fix the fragile User Interface
- Add new features and functionality (for eg., prepaid cell phones)
- Provide end-to-end testing
- Provide maintenance and support

Scope of the Solution

To develop a prepaid web portal and maintain/enhance the postpaid portal

Prepaid portal development Scope:

- User registration, authentication and authorization
- Online shopping feature: Phones, accessories and downloading contents such as ringtones, games and images
- Facility for subscriber to build family network and have control over the top-ups and recharges
 - Family set-up, account activation and programming the handsets
 - View usage history of the family and individual members online and balance details
 - Modifying family information (Add family member, change role, deactivate user etc.)
- Order creation, order search and cancellation
- Informative features like service coverage check, port eligibility of phone numbers, dealer locator search etc.
- Payment related activities like add/delete credit card profile, auto-payments, make payments etc.
- View modify handset information (Change phone number, changing handset)
- Split/Combine account – Move/add subscriber account to other account
- Entertainment - Navigation and download of different types of contents

Skill Set

Hardware: Windows 2003 server

Network

components: VPN, RSA Keyfob

Software packages: J2EE (Java, JSP, Struts EJB), Web Server–Tomcat, Application Server-JBoss

Custom applications: Third party system supplied by client

Other: Visio, MS Word, Dream viewer, Test Director

Client Quote

“Team did an excellent job in the implementation and construction phase. There were major impacts that were caused by other partners and the MphasiS team was very good at adjusting their schedule to accommodate these impacts and keep as close to schedule as possible”

- Client SPOC

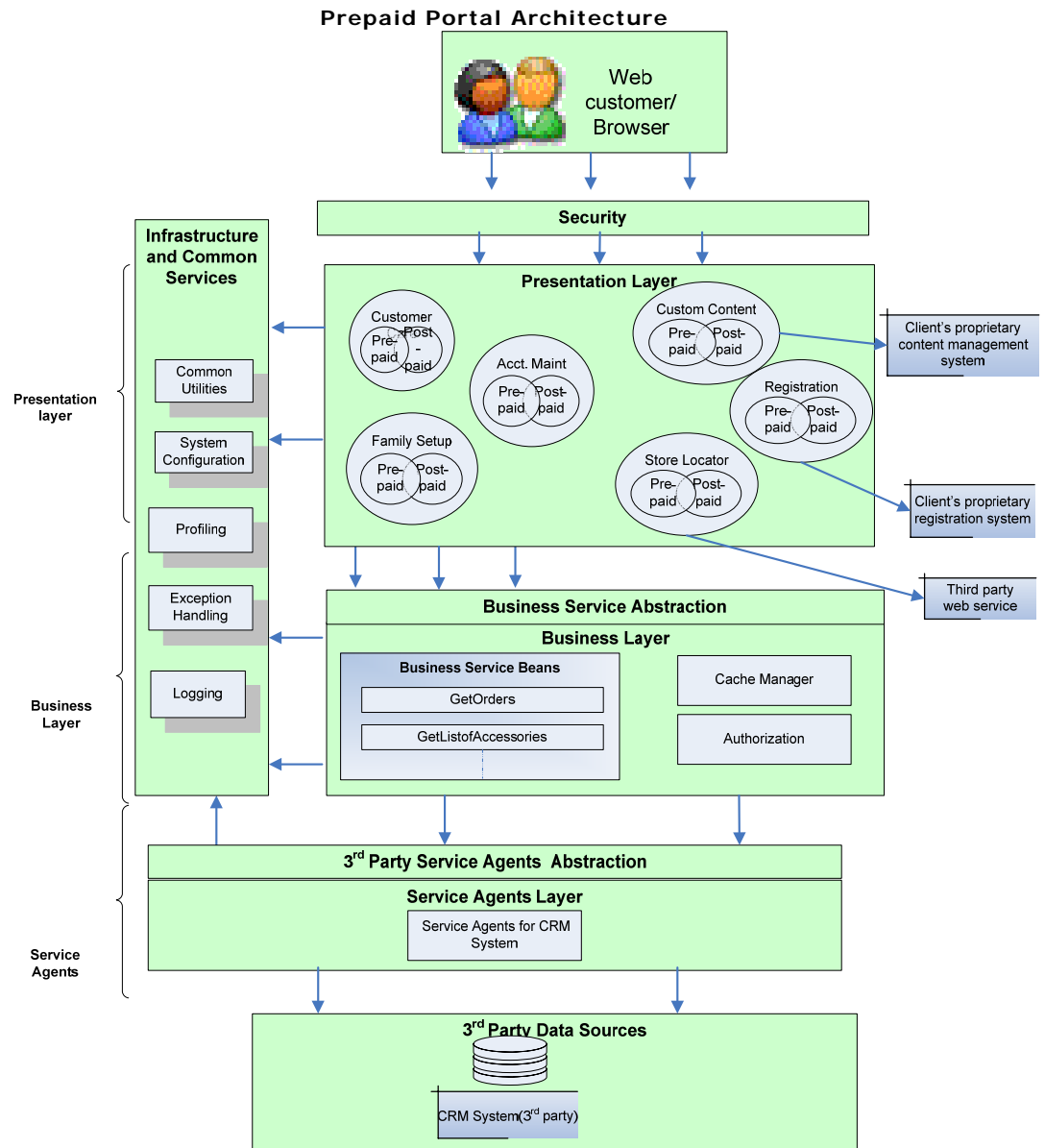
Postpaid web portal scope

- Production support, Defect fixing, enhancement of production code

Challenges

- More than 12 partners involved in the development/testing and the dependency was high
- Application need to support a variety of end-user devices such as web browser, handset, etc,
- Reduction of maintenance cost in longer run
- Rapidly changing requirements and integration-partner interface definitions
- Working APIs not available on time
- Gap between the client use-case document and MphasiS wireframe document

Solution



Each layer in the above architecture implements a well-defined set of functionalities and provides these functionalities through an interface. Clearly partitioning responsibility of these different layers in the architecture enables flexible and scalable set of applications. The main responsibility areas are **Touch Point, Front-end security, Presentation layer, Infrastructure and common services, Business services, and Service Agents layer.**

Touch-point

This architecture supports a variety of end-user devices; primary targets are:

- Web browser: Standard HTML-based client applications such as Internet Explorer or Firefox
- IVR: A phone/voice activated system driven by any telephone (mobile, landline or otherwise)
- Handset: A handset touch-point from custom on-phone applications or HTML/HTTP requests made via an on-phone web browser
- The fundamental requirement of this architecture is that even though the touch-point may differ and the presentation mode may differ, for common functionality the same business logic and data access logic should be utilized wherever possible.

Front-end Security

Front-end security is handled by the Java container and varies in capability depending on the particular platform used. The responsibility of the front-end security layer is to:

- Identify incoming request
- Ensure request is authenticated
- Ensure request has proper authorization
- Fail request immediately or redirect to credential validation service as configured

Presentation Layer

The presentation layer handles all layout and content construction for each "page" delivered to the user. For example, browser requests are serviced by JSP files for major content placement and functionality. An IVR menu would be serviced by a custom "page" coded to the requirements of the IVR solution in use. UI components have logic sufficient to render the content for the particular device being used and make decisions about which business functionality to utilize however they do not implement any of that business logic.

Infrastructure and Common Services

The common services are a set of functionality that assists in the development of simple, reproducible and high-performance systems. These common services are utilized throughout the entire system for uniform utilization of security, logging, exception handling, etc.

Business Services

The business logic for all functionality in the system resides in this layer. During design and development, number of business objects will be identified, such as customer, account, phone etc. These business objects and business services will be coded in such a way as to be agnostic of the client touch point.

The business service layer is fronted by an abstraction layer that presents a common creation interface to all business services. This simplifies the caller's creation logic and allows business services to be constructed by multiple fine-grained services (some of which may be remote) in a transparent way. All business services in this layer will be accessed remotely or locally.

Service Agents layer

Similar to the business layer, this layer provides a common mechanism to access business data from all external systems. All knowledge related to integration, encoding, format of message, synchronous/asynchronous mode, etc. are handled in this layer so that business layer does not have to deal with these details. The creation of service agents will be handled by an abstraction layer that allows for simplified access/creation of the data services. All errors returned by this layer are converted into standardized exceptions that bubble up to the appropriate handlers.

Benefits

- A common framework for multiple sales models, reducing the long term maintenance cost
- A flexible application to support variety of end-user devices
- Seamless integration with existing applications (about 12 partners product integration)
- Implemented agile/iterative approach - Provide a means to control the project risk and create a greater flexibility to accommodate changing requirements
- Followed necessary process to meet the aggressive agreed schedule which helped :
 - To meet customer's budget and intern profitability
 - To win the business against competitor
 - Low cost maintenance support from MphasiS
 - Reduction in the number of defects on the production code and reopen defects
 - Reduction of the maintenance time and aiming at one code base for multiple applications
 - Resolved all the production issues on time
 - MphasiS team quick response to the production issues has helped to maintain web
 - High service availability level

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