Metasite OpenBSS
for telecoms, cable and ISPs
Solution overview
From a business owner point of view, telecom billing does not have a great reputation:

Anything billing-related typically means slow, expensive and complicated.

Businesses usually end up adapting to billing, not the other way around.

Exciting and valuable business features are often developed outside of billing in peripheral systems.

Over 15 years of experience integrating large billing systems we came across many drawbacks of systems available in the market:

- Billing systems are closed monoliths – with no easy way in or out
- Billing systems tend to be developed by vendors who are not too interested in customers’ needs
- Billing system internals are poorly documented
- Billing systems are not modular and cannot grow/scale fast

So we have built a viable alternative.
Metasite OpenBSS

An open modular business support system for MNOs, MVNOs, cable service providers and ISPs

Metasite OpenBSS is a convergent, fully-featured business applications suite designed to serve both regular mobile network operators, MVNOs, cable service providers and ISPs. The OpenBSS solution features a unified front-end customer servicing stack for cross-functional units and departments including CuCa, CreCo, BO, POS, Self-Service, Dealers, Products and Services, Accounting, Logistics and Marketing. It also includes sophisticated BI modules built to deliver business-critical reporting.

Metasite OpenBSS is delivered as an open platform with SOA based ESB allowing integration with Network Elements, third party systems (CRM, billing, etc.), credit scoring organizations et al, and is based on scalable architectures tailored to fit operations of virtually any size.

OpenBSS runs on Java EE 7 or later, accessible via any web-standards compatible browser.
Metasite OpenBSS High Level Overview

- **Billing**
  - Rating Engine
  - Bill Run
  - Customer Balance Management
  - E-Invoice generator
  - Payment Process Manager
  - Debt Management

- **Customer Management**
  - CRM
  - Segmentation
  - Churn Prediction
  - Customer Support Processes
  - Customer Care

- **Order Management**
  - Order Management Portal
  - Order Management API
  - External Systems Adapters

- **Product Management**
  - Product Catalogue
  - Campaign Management

- **Point-of-Sale**
  - Product Sales Wizard
  - Customer Support
  - Personalized Offers (Direct Sales)
  - Direct Delivery

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**metasite**
Metasite OpenBSS solution at MNO/MVNO

Architecture overview and key integration points

At MNO/MVNO Metasite OpenBSS suite connects to IN platform

- APIs for real-time data exchange (customer, product and service provisioning, etc.)
- JDBC directly to CDR replica database (postpaid billing, BI, etc.)
- Order management component for complex provisioning workflows.

Order management back-end component: connects to network elements for provisioning

- Connects to third party systems for real-time credit checks
- Manages automatic, human-driven or mixed workflows
- Encapsulates and externalizes business logic
- Serves the role of integration middleware for third party systems via SOAP API
- Exposes a Web-services SOAP API
- Is configurable and extendable

Third party financials

- For recharges and top-ups (scratch, internet payments, etc)
- For batch payments (banks, ATM, cards, etc)
Metasite OpenBSS solution at CSP
Architecture overview and key integration points

Cable Service Provider-specific Metasite OpenBSS solution implementation example

- Service oriented approach
- BPM engine for process management
- Unified GUI for CC and internal employees
- Separate components can be deployed independently
- Customizable logic for different brands

![Diagram of Metasite OpenBSS solution architecture]
**Access management**

- Unified login management system for all employees using BSS applications
- No separate log-ons needed for different applications
- Flexible rights management within each application
- User credentials management
- User access rights management
- User auditing
- Extensible for use in other 3rd party apps via a web-services API

**Subscriber management**

- Integrates directly with IN platform (e.g. Amdocs)
- Provisioning management
- Topup management
- Search for subscriber record based on multiple fields & keys
- Manage subscriber accounts and related subscriptions
- Manage products, invoices, trouble tickets, payments
- Call history and details (voice, SMS and data)
- Contact and interaction log
- Management of Incidents through integration with 2nd and 3rd level of support
- All the customer information presented in a single place
- Presents the IN platform data in a highly usable and simple form
- Full 360 view and management of all subscriber interactions

**Subscriber web self-care**

- Supports both prepaid and postpaid
- Allows ordering of products & services
- Top-up and payment history
- Call detail history (Voice/SMS/Data)
- Contact Customer Service
- Online top-up (by reload voucher, debit & credit card)
- Accessible and well-designed usage stats for customers
- Supports online sales and E-shop (up-sell, cross-sell)
**POS system**

- The Point of Sales electronic shop for selling SIM cards, rateplans, handsets and add-ons
- Configurable rateplan, product inclusion/exception rules and
- Error-proofed workflows - no mistakes made by POS user/employee
- Checks in internal and external black-lists, validates vs other
- Activation rules (e.g. max subscriptions per account)
- Assignment of purchased handsets to contract via barcode
- Number selection
- Contract generation
- Order creation: customer activation, MNP & SIM Swap
- Allows contacting Dealer Support
- User-friendly sales process
- Designed to minimize number of clicks and steps
- UX similar to online shopping sites

**Order management system**

- The central point for executing complex cross-system workflow logic (orchestrator)
- Order validation, order status checks, provisioning across multiple network elements, SMS notifications
- Workflows can be processed automatically
- Workflows can be processed manually supervision (task management)
- Order delivery to back-end system(s)
- Provides Order feedback to requestor
- Workflow based middleware integrated with billing/IN system, logistic partners, internal & external credit checks, product catalogue, MNO network
- Has a GUI that shows the currently active processes and allows easy ‘task’ management
- It allows a perfect tracking of orders using a unique ‘order lifecycle’ workflow
Billing and invoicing system

- Billing process manager
- Invoice generator
- Payment processing module for Credit & Debit cards
- Payment process manager (payment upload from banks)
- Collection
- Dunning process manager
- Custom rate-plans and campaigns are implemented during deployment
- Supports test-runs, easy re-runs, partial runs
- Invoice generation module produces invoices in multiple format for easy reuse - Excel, PDF or XML
- The invoice can include complex barcodes, personalized texts, logos, ads)
- Combines the rating power of Amdocs platform with post-processing to charge monthly fees, bundles and adds other non-realtime pricing logic with recurring components
- Seamless integration with product catalogue
- Bill runs can be executed and fully managed by the customer

Payment gateway

- Features a wide choice of payment collection channels, including
- Direct debit, credit cards, regular bank payments and other payment providers.
- Issues direct debit commands to banks
- Automates encryption/decryption processes required by banks
- Provides a single integration point for financial institutions, greatly simplifying maintenance
- Has a separate GUI for financial departments for monitoring

Advanced marketing tools

- Campaign management system
- Automated churn prediction and prevention system
- Advanced business intelligence

Weekly forecasts 20 days inactivity

This algorithm was to identify which customers will fall in 60% inactivity days after 6 and note weeks.

Segment definition: Logically, forecasts

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Segment definition: Logically, forecasts
Metasite OpenBSS for CSP

Selected additional cable-specific functionalities

- Product catalog with customizable bundles, campaigns and discounts logic
- Rules based loyalty offers
- Potential customers list
- Visual field force schedule + failures mgmt
- Automatic mass failure detection and recognition
- Direct Debit management

Order management
- Sales to new customers
- Additional products sales and customer data changes
- Customer support process

CRM
- Customer free text search by multiple criteria
- 360 degree customer data view
- Full orders history
- Full charges, payment, and balance history
- Debtor information

Billing
- Bill-run management
- Intelligent charges correction
The platform features custom built user authentication, authorization and session handling component (SSO) and user role / privileges management mechanisms applied in each of internal application.

The SSO module controls all of the system users. It allows users to create, deactivate or edit the system users as well as to manage their permissions to allow/deny access to certain parts of the system.

SSO component uses SOAP Basic authorization mechanism based on username / password pair. BSS applications (POS, CRM, billing, etc.) use SSO functions to check user access rights to those applications, while user roles are managed and controlled in each BSS application separately.

When user is logged into the system the implemented single sign on feature handles user session management between the BSS applications and allows the user to easily access another application if required.
**Metasite OpenBSS**

**Technology, deployment and support options**

Solution is built using Java technological stack and relies on Open Source technologies, frameworks and libraries. Solution can be deployed on any operating system supporting Oracle JVM. For the optimal performance, Linux OS is recommended. Solution relies on transactions in RDBMS. PostgreSQL DB ensures transactional consistency and integrity of data.

<table>
<thead>
<tr>
<th>The solution relies on enterprise-grade open source technologies and tools:</th>
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<tbody>
<tr>
<td>Java 1.8 is used as the main programming language</td>
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<tr>
<td>Spring Boot application</td>
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<tr>
<td>Hibernate as ORM layer</td>
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<tr>
<td>Activiti as BPM engine</td>
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<tr>
<td>Spring MVC as front-end framework</td>
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<tr>
<td>PostgreSQL as main database server</td>
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**Metasite OpenBSS may be deployed on-premise or in the cloud.**

Metasite can provide **24/7/365 support or hand over support to the client.**

After launch, further customization and development may be handled by Metasite or client’s internal IT team.
Thank you

Contact us to learn more details about Metasite OpenBSS and to schedule a live online demonstration.

References from current clients using OpenBSS solution available upon request.

Should you have any questions or would like to set up a meeting, please kindly get in touch:

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