Service Oriented Architecture: Case Study

Achieving Inter-Plan Interoperability through SOA

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Alexandria, VA

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Agenda

• BCBSA Background and Overview of HIT @ BCBSA

• Service Oriented Architecture at BCBSA
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August 2003 @ BCBSA Annual HIPAA Conference: “Convergence Toward a New Paradigm”
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Multiple Initiatives, Common Destination
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Vision: Health Information Anywhere Anytime
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“End Game” “Nirvana” “Happiness” “Future State”

Physician and Patient Satisfaction

The Roadmap to Patient Safety, Quality & Efficiency*

EHR with Portable Documents, Full Functionality, Clinical Data Exchange, HL7- CDA and Decision Support

Personal Health Record

“Disease Management” with Specific Physician Performance Measures

CCR Version 1.0 Current State
E-Prescribing Current State
Practice Management Current State
Basic EHR Current State
Secure E-mail Current State

*Assisted by Information Technology Tools—“Glue and Grease”, the Alliance, the Massachusetts Medical Society, The Mass Health Data Consortium, and Technology Partners.
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- BCBSA Background and Overview of HIT @ BCBSA
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Definition of Architecture

- **architect n.**
  1. One who designs and supervises the construction of buildings or other large structures.
  2. One that plans or devises

  *(From Greek): Architect – chief, most important builder*
  
  *[ arkhitekt n (Greek):
  arkhi-, archi-, chief
  archi- or arch- Chief; highest; most important
  arkhi-, arkh-, from arkhein, to begin, rule.]*

  +

  tekt n, *builder*. Latin architectus]

- **architecture n.**
  1. The art and science of designing and erecting buildings
  2. Orderly arrangement of parts; structure
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Architecture

**Definition of Architecture**

- A family of guidelines (concepts, principles, rules, patterns, interfaces and standards) to use when building a new IT capability.
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Forrester defines Service Oriented Architecture as:

- A style of design, deployment, and management of applications and software infrastructure in which:
  - Applications are organized into business services that are (typically) network accessible
  - Service interface definitions are first-class development artifacts
  - Quality of service characteristics are explicitly specified in the design
  - Services are categorized and discoverable by development tools and management tools
  - Protocols are predominantly, but not exclusively based on Web Services
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Multiple Inter-Plan Technology Roles of BCBSA

• BCBSA as a software development company
  – Develop software, deploy at Plans

• BCBSA as an Application Service Provider
  – Develop solutions, host systems centrally, provide services to Plans

• BCBSA as a system integrator
  – Integrate 3rd party software products and services

• BCBSA as a standards organization
  – Select, refine and define standards, formats, messages

• BCBSA as policy setting, performance tracking, and auditing body
  – BCBSA establishes operational policies, rules, and procedures; tracks performance and performs audits

• Internal Corporate Information Technology
  – Financial, accounting, HR, time tracking systems, etc.
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Current Blue System Inter-Plan Context
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Architectural Context and Common Platforms

Interact and Access
Common User Interaction Platform

Inform and Analyze
Common Information Management Platform

Communicate and Collaborate
Common Service Delivery Platform

Providers
Members
Employers
Accounts

Host Plan

Home Plan

BCBS Association

Partners / Vendors
Brokers / Consultants
Financial Institutions

Affiliates
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Technology Enabled Interoperable “Ecosystem”
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Extended Technology Enabled Interoperable “Ecosystem”

Plans can leverage the common platforms for their external interactions.

Common Service Delivery Platform
Common Information Management Platform
Common User Interaction Platform

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Common Platforms and Business Services

- BCBS Plans
- BCBS Association
- Partners

Common Inter-Plan Business Services
- Claim Edit
- Claim Attachment
- Claim Status
- Claim Submission
- Claim Adjustment
- Claim Exception
- Claim Audit
- Pre-AUTH Referrals
- Provider Data
- Business Metrics
- Membership Exchange
- Eligibility Status

Common Information Management Platform

Common Service Delivery Platform

Common User Interaction Platform

Information Repositories
- Claims Data
- Provider Data
- Membership Data

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Architectural Layers and Common Platforms

Standards Multi-Tier Application Model

- **Client Tier**
  Rich client apps, applets, thin clients, etc.

- **Presentation Tier**
  ASP, JSP, Servlets, Portlets, other UI, etc.

- **Business Tier**
  Business Objects, Rules, Logic, Workflow, etc.

- **Integration Tier**
  Data/Legacy connectors, messaging, EAI, etc.

- **Resource Tier**
  Databases, external systems, legacy resources

Inter-Plan Reference Architecture Model

Business Services, Products, Applications

- Business Service
- Business Service
- Business Service

Common User Interaction Platform

Common Service Delivery Platform

Common Information Management Platform

Common Infrastructure Platforms

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Operational View

Plan A (Deploys Inter-Plan Services)
- Plan System
- Plan Data
- Inter-Plan Services
- CSDP

Plan B (No Deployed Inter-Plan Services)
- Plan System
- Plan Data
- CSDP

Plan C (Deploys Inter-Plan Services)
- Plan System
- Plan Data
- Inter-Plan Services
- CSDP

Common Inter-Plan Platforms
Service Delivery, User Interaction, Information Management Platforms

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