Service Orientation in Banking

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Agenda

• Why Service Orientation is needed in Banking
• How does a Service Oriented Bank look like
• Approach for Service Orientation in Banking
• Critical Success Factors for Service Orientation
• Case Study: Service Orientation of Finacle, a Banking Solution Suite
Why Service Orientation is needed in Banking?
Banks are increasingly looking at service orientation to address the business challenges they are facing.

### Challenges
- Non-traditional competition: Need to create value-added services faster
- Demanding Customers
- Increasing Industry Consolidation
- Aggressive Regulatory Framework

### Strategies
- Composition of shared business services to create business solutions
- Customer Centric, Personalized Services, Integrated channels
- Standardized and Agile Business Processes
- Processes with integrated compliance checks. Rationalized and Managed infrastructure.

### Execution
- Composite Integrated Applications
- Agile Processes
- Reusable Services
- Integrated Data
- Secure & Managed Infrastructure

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**Key Challenges & Technology Strategies in Banking**

**Challenges**
- Non-traditional competition: Need to create value-added services faster
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**Strategies**
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**Execution**
- Composite Integrated Applications
- Agile Processes
- Reusable Services
- Integrated Data
- Secure & Managed Infrastructure
Service Orientation Vs Traditional Approach

Critical IT Capabilities needed
- Ability to create business solutions faster through reuse of existing capabilities
- Agile business processes
- Core capabilities as reusable business services
- Integrated systems with seamless information flow
- Secure and managed infrastructure

Traditional Approach
- Design
- Develop
- Deploy
- Application Silos
- Rigid IT

SOA Approach
- Build - Compose - Orchestrate
- Composite Applications with Shared Services
- Malleable IT
Evolution of Banking

1st Generation
Customer Experience: Physical Branch Services
Business Model: Core Banking
Technology: Not much automation and integration with Partner or External Systems

2nd Generation
Customer Experience: Multiple Channels like Self-Service (Online Banking, ATM), Branch, Call Centers etc
Business Model: Multiple Products like Consumer & Corporate Banking, Wealth Management etc
Technology: N-Tiered systems with increased automation

3rd Generation
Customer Experience: Integrated portals, Personalized, Context based, Cutting across channels
Business Model: Customer Centric, Value added, Integrated, Personalized services
Technology: Service Oriented systems enabling faster change based on business needs

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How does a Service Oriented Bank look like
Service Oriented Bank - Core Capabilities

Customer Interaction and Delivery Capabilities
- Access Services like Self-Service & Branch services etc
- Customer Relationship Management

Products and processing Capabilities
- Deposits & Savings, Credit & Lending, Credit Cards, Treasury, Trade Finance etc
- Account based, Customer based, Trading Operations etc

Sales, Marketing and Product Management Capabilities
- Cross-Selling, Lead management, Advice
- Market Research
- Designing and launching of Products

Operations Support Capabilities
- Analytics, Compliance, Settlements etc

Enterprise Management Capabilities
- Channel Management, HR, Procurement, Performance Management etc

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Service Oriented Bank - Service and Process Classification

Customer Interaction and Product Delivery Services
- Self-Service Channel Services
- Branch Services
- Call Center Management Services

Sales & Marketing Services
- Leads Management, Origination, Segmentation Market Analysis, etc

Cross Functional Processes and Services
- Relationship Management, Customer Portfolio Management, Cross-Selling etc.

Product Services and processes
- Retail Banking
  - Savings & Checking, Consumer Lending, Mortgages, Bill Pay etc
- Corporate Banking
  - Current/OverDraft, Corporate Lending, Import/Export, Guarantees
- Wealth Management
  - Structures Products, Mutual Funds, Equity Bonds
- Treasury
  - Foreign Exchange, Derivatives, Securities, Money Markets etc

Common Business Services and Processes
- Deposits, Limits, Funds, Customer, Payments
- General Ledger, Transaction posting, Products & Masters
- Product Design, Product Launch

Business Support and Analytics Services
- Risk Management, Customer Analytics etc
Service Oriented Bank – Architecture Layers

Composite Application Layer
- Personalized, Context based
- Reusing capabilities from layers below
- Loose coupled, easy to modify
- With integrated security

Shared Capabilities Layer
- Shared Services for core processing
- Encapsulating legacy and new components exposed as services
- Orchestration of these services to perform business processes

Product Engines Layer
- Legacy Systems, specialized packages and product engines

Business Support and Analytics Layer
- Analytics, Compliance, Settlements, Consolidation, Statements etc

External Services
- Clearing Corporations, Payment Gateways, Partners etc
Approach for Service Orientation
Approach for Service Orientation

Drivers and Value Propositions
- Value Maps, KPI, CSFs, ROI and Quick Wins

Analysis and Architecture for Service Orientation
- Top Down Capabilities, Business Function & Process Analysis
- Bottom up AS-IS Analysis
- Enterprise Architecture approach to define SOA End State (TO-BE) Models

SOA Transformation Initiatives
- SOA Programs and Projects, Change Management

SOA Realization
- SOA Accelerators
  - Technical Building Blocks and Frameworks
  - Infrastructure Products
- Detailed Design and Development

SOA Operational Considerations
- SLA Management, Registries, Repositories, Management
Approach for SOA – Incremental Business Solution Driven

• Think Big Start Small
• Start with small Tactical Projects first driven by a business need
  – **Enable Cross Selling** entailing integration of the sales initiatives across channels
  – **Unify Customer View** entailing integration of data across the different touch points
  – **Relationship product initiatives** to tie multiple products to add value to the customer
• Followed by large initiatives
  – Top Down Enterprise Service orientation
Accelerators for Service Orientation

Reusable Models
- Process, Service and Data models for different business functions
- Reference architectures

Frameworks and Pre-built Services
- Providing reusable building blocks like Infrastructure services like security, notification
- Incorporating industry best practices
  - design patterns
  - With popular open source/COTS solution options
- Packages providing pre-built services and capabilities
- Integrated Workbench with templates and tools for faster development
  - Project templates with automated build, integrated unit testing etc
  - Reusable solutions as code templates

Processes and Methodologies
- SOA Methodology, SOA Governance etc
Accelerators for Service Orientation - Frameworks

Multi-Channel Access and Composite Application Frameworks
- Web, Mobile, IVR, Portal Frameworks

Process Frameworks
- Workflow, BPEL/BPM, BAM Frameworks

Shared Application and Data Services Frameworks
- Enabling Shared capabilities and integrated data access
- Variations Framework, Multi-Entity Framework, Maker-Checker Framework, Purge Framework etc
- Services Framework, Rules Framework, Persistence Framework, Batch Framework
- RAD tools, Code Generators

Integration Frameworks
- Routing, Transformation, Gateways

Common Infrastructure Frameworks
- Security Frameworks (Authentication, Authorization, Audit, SSO)
- Management Frameworks (Monitoring, Alerts)
- Infrastructure Services (Logging, Error Management, Notification etc)

Source: Radien – Infosys SOA Realization Framework
Service Orientation in Banks – Critical Success Factors
Critical Success Factors for SOA

To be successful, SOA Model has to achieve

- **Effectiveness**
  - Visibility
    - Awareness
    - Service Description and policy
    - Mechanisms for discovery
    - Mechanism for detecting presence
  - Interaction.
    - Communication
    - Information model
    - Process model
  - Real World Effect
    - Realization of capabilities
    - Participants
  - Policy guided delivery

- **Assurance**
  - Security
  - Consistency
  - Graduated Engagement
  - Manageability

- **Wide scale adoption**
  - Scalability and Performance
  - Reusability
  - Loose Coupling, Interface driven abstraction
  - Cross platform support
  - Low cost of entry
  - Support for globalization and localization

Source: [www.oasis-open.org](http://www.oasis-open.org)
Case Study: Service Orientation of Finacle
Finacle is a Comprehensive Banking Solutions Suite
Goals and Strategies for Service Orientation of Finacle

SOA Transformation Goals
- Product Silos to Integrated Services Suite
- Core Capabilities as reusable business processes and services

SOA Transformation Strategy
- Transformation Approach
  - Analysis and Architecture from Industry and package perspectives
  - Defined SOA methodology
- Transformation Initiatives
  - Tactical Initiatives
    - Service Orientation of most used capabilities
    - Multi-Channel Integration Solution Initiative
    - Unified Customer View Solution initiative
  - Long Term Initiatives
    - Service orientation of Core Banking Package
    - Service Orientation of e-Banking Solution Package
    - Service Orientation of the Unified Banking Solution Package
Finacle Service Orientation

Finacle Delivery Channels
(Atm, Internet, Callcenter)

Finacle Integration Layer
(Web Services, XML-MQ adapters, ISO 8583 and EJBs)

Finacle Services Layer
(Business Processes and Services)

Finacle Repositories Layer
(Database, Legacy Systems, Allied Products)

Finacle Infrastructure Layer
(OS, Firewalls, Security)

Functional Services
- CASA
- Deposits
- Customer
- Payments/Remittances
- Loans
- Trade
- Limits & Mandates
- Interest & Charges

Common Services
- Products and Masters
- Transaction Posting
- GL and Accounting

Infrastructure Services
- Scripting
- Security and Audit
- STP Engine
- Communication
- DB Services
Finacle Services Framework for SOA Realization

Framework for Services Realization

• Service Definition
  – Service Functional Interface
  – With EJB/JAX-RPC Wrappers
  – With converters to WSDL & Vice Versa

• Service Registry & Lookup
  – Service Locator for lookup
  – Service Factories to create services
  – Service Registry to hold instances

• Service Configuration
  – Parameter Configuration

• Service Management
  – Management Interfaces, Alerts

• Service Orchestration
  – BPEL Engine for Macro flows
  – Request Handler Chaining for micro flows

• Service Invocations
  – Pluggable mechanism for different implementation types
    • C/C++, POJO, EJB, JAX-RPC etc
  – Integration Bus

• Service Cross Cutting Concerns
  – Service Filters

Radien – Infosys Services Realization Framework
Finacle Accelerated Services Development Platform

- Core Building Blocks
  - Reference Architectures
  - Radien Adaptive Services Framework
  - Multi-Channel Integration Framework
  - Mobile Application Framework
  - Banking Industry Reference Business Process and Service Models
  - Xtensibility Framework and Toolkit to address product customization management and upgrades
    - Variations Framework
    - Context Driven Services Framework
  - Security, Management, Licensing Frameworks
  - Banking specific frameworks like Maker-Checker Framework, Multi-Entity framework
- Accelerated delivery through automation
  - Code generation tools
- Integrated Product development and management methodologies and tools
Finacle Services Management Framework

- Service Discovery to discover Finacle services running on nodes
- Remote Starting and Stopping of Finacle Services
- Health statistics of selected service
- Information on hanging Finacle processes on selected node
- Monitor templates for service status and overload warning
- Integration with enterprise management tools like HP OpenView, Tivoli
Service Oriented Finacle banking solution

Customer Delivery Channel
- Branch
- Call Center
- IVR
- Portal
- Internet
- Mobile
- ATM/POS
- Kiosk
- Fax

Composite Applications and Channel Services
- Branch Services
- Call Center Services
- e-Banking Services
- Mobile Banking Services

Multi-channel Alerts
- Consumer & Corporate CRM

DWH Based Analytical Services

External World
- Payment Networks
- Credit Bureaus
- Central Bank
- Market Feeds
- Card Issuers
- ACH

Core Banking Services
- Consumer Banking
  - Savings & Checking
  - Term Deposits
  - Consumer Lending
  - Mortgages
  - Bill Pay
- Corporate Banking & Trade Finance
  - Current/Overdraft
  - Corporate Lending
  - Documentary Credits
  - Imports/Exports
  - Guarantees

Allied Product Services
- Payments Middleware
- Pricing
- Regulatory Reporting
- Risk Management
- AML/OFAC
- Business Intelligence

Customer Information Services

Cash Management Services
- Account Mgmt
- Payments
- Collections

Treasury Services
- Securities
- Foreign Exchange
- Derivatives
- Money Markets

Wealth Management Services
- Investor Services
- Structured Products
- Mutual Fund & Insurance Distribution
- Equity & Bonds Trading

Common Services
- General Ledger
- Transaction Posting

Infrastructure Services

General Ledger
- Transaction Posting

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Service Orientation of Finacle – Benefits

- Services Oriented Architecture that helps banks create a future banking model based on
  - Event driven services
  - Conceptualization of banking solutions in real time
- Out-Of-Box Banking Business Process and Service Models – to enable faster solution conceptualization through composition
- Customer centricity – 360 view, Cross sell and enhanced Service capability.
- Flexibility through parameterization and Xtensibility that enables
  - Meet time to market needs through faster new product launch
  - Differentiate offerings using unique processing rules defined using scripting for various business events
- Accommodate Third party & legacy modules within the framework using SOA & Business Process integration tools
- High Scalability, Integrated Security and 24X7 Capability
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