

Current State of SOA in Practice

Ron Schmelzer
Jason Bloomberg
Senior Analysts
ZapThink, LLC

Take Credit Code: EUSTATE

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Key Patterns in Market

- Arguing over SOA internally
- Understand need for SOA, researching the right approach
- Have implemented something SOA-like (maybe just some Services), now looking to take SOA to the next level
- Currently implementing SOA pilot
- Moving from SOA pilot to broader SOA implementation

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Key Issues

- Lack of broad understanding of the role of architecture
- Lack of agreement on best approach to Enterprise Architecture
- Trouble grasping all the implications of SOA (security, management, governance, integration, etc.)
- Lack of business buy-in/business not driving SOA
- Business supports SOA in principle, but not willing to fund it/take necessary risks
- Immaturity of best practices/products on market
- Limited interoperability of products on market

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Telco Example

Verizon

Large regional telecommunications provider formed thru the merger of Bell Atlantic and GTE



Challenge	Solution	Results/Benefits
<ul style="list-style-type: none">• Eliminated redundant systems inherited from the merger of Bell Atlantic and GTE• On average, each transaction had been developed five to 25 times; one was deployed 45 different times	<ul style="list-style-type: none">• IT Workbench SOA project, operational in 2004• Thousands of developers, .NET and Java• Focused on 250 business transactions – incl. verifying customer credit histories & looking up customer info• 57 Service-oriented applications with 200 transactions	<ul style="list-style-type: none">• 2.5 million to 3 million Web Services transactions a day• Helped Verizon slash its IT budget by 50 percent• Included managing and securing the Services, charging for reuse and monitoring the performance of Service-enabled transactions

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Government Example

The Defense Finance & Accounting Service (DFAS)

US Federal Government agency responsible for all Department of Defense accounting



Challenge

- Very large, complex organization that handles accounting for Army, Navy, Air Force & Marines
- Process \$1 Billion dollars of payments per day
- Challenge of how to bring together DoD finances
- "Analysis Paralysis" – too much time devoted to design

Solution

- Reduced hardware costs by streamlining operations
- Achieved "semantic alignment" across organizations
- Collated and rolled up information in the face of enormous complexity
- Focused on information architecture in the context of SOA

Results/Benefits

- SOA effective in environments of extreme complexity
- Information architecture essential to resolve semantic issues in complex environments
- SOA appropriate in environments where there are many stakeholders with many needs

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Energy Company Example

Large Global Petroleum Firm

Challenge

- Different divisions had different concepts of SOA
- No unified approach to Enterprise Architecture (EA)
- Lines of business often had very little in common

Solution

- Brought together EAs from across company for first time in 6 years
- Worked to develop a common vocabulary
- Identified areas of redundancy suitable for shared Services
- Developed a SOA maturity model

Results/Benefits

- Moved toward establishing enterprise-wide EA committee
- Undertaking SOA pilot projects

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Health Insurance Company Case Study

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Executive Buy-in

- Key SOA understanding & support from CEO level
- Understand reuse, time-to-market business benefits
- LOBs have various levels of understanding, but broad support for SOA nevertheless
- Product innovation key business motivator

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Existing Infrastructure

- IBM shop predominantly
- COBOL framework (broadest penetration)
 - Most data on mainframe
- .NET– mostly off-the-shelf
- “Homegrown” Java framework based on Struts, etc.

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SOA Roadmap

- 1-2 Services in first half of 2005
- Additional 6 Services in second half of 2005
 - Not necessarily Web Services
 - Use WSDL
 - Sometimes use SOAP
 - SOAP over MQ to connect Java to .NET Services
 - Couldn't get SOAP over CICS to work
- Services are “mission critical” (utility Services date from 2004)
- Proposed for 2006:
 - Registry/asset repository
 - Separate budget for strategic architecture

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Issues They're Facing

- Problems with XML on mainframe (Enterprise COBOL)
- Lack performance testing
- No data strategy
 - Data quality issues
- Must get users to use Services (and only Services)

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Key Strength: Governance

- Have comprehensive IT governance strategy
- Driven out of architecture group
- Solid security policies

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Aeroplan Case Study

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Aeroplan's Business

- Leading loyalty program in Canada, wholly owned subsidiary of Air Canada
- Aeroplan generates revenue through
 - mileage accumulation by selling miles
 - mileage redemption by arbitraging rewards value vs. mileage costs
 - Aeroplan can only recognize revenue when members redeem miles
- Member of 14 airline Star Alliance

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Aeroplan and Real-time Miles eCommerce

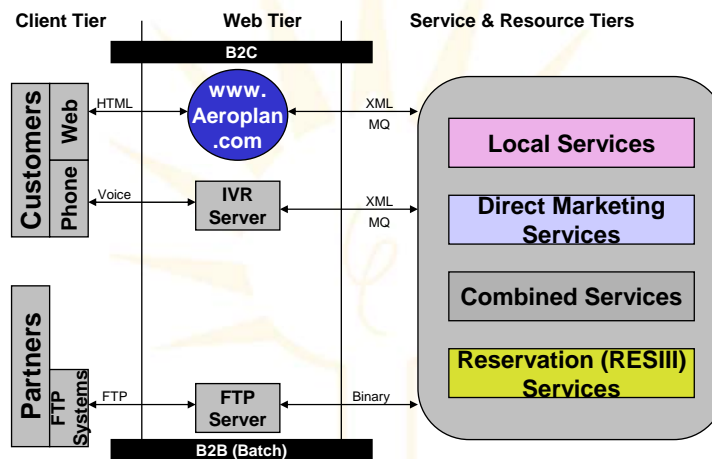
- CEO mandate: create new reward redemption opportunities for members
 - First to market with rewards eCommerce
 - Engage third-party companies to supply new rewards
- Add a new B2B (real-time) channel
 - Make rewards available to members in real-time through the Web channel
 - Protect members' privacy & prevent fraud
 - Add new redemption & accumulation partners seamlessly
- XML Web services were the most flexible and extensible architecture for this initiative.
 - XML-enabled mainframe with XML over MQ Series

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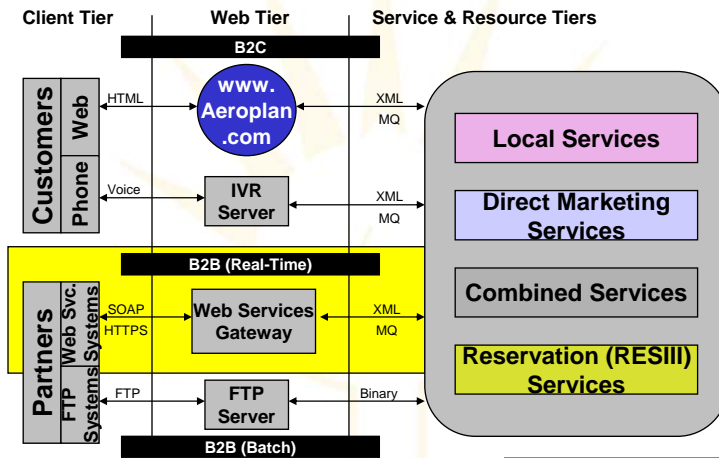
Current Electronic Channels



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Adding a New B2B (Real-Time) Channel



Enables Aeroplan to pursue new reward redemption opportunities with 3rd party partners.

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Technical Requirements

- Provisioning
 - Expose Aeroplan XML services to partners as WEB services
 - Manage protocol conversions and bridge non-homogeneous systems
 - Develop and troubleshoot collaboratively with partners
- Security
 - Keep security separate from business logic
 - Secure message exchange and enforce partner access control
 - Protect against threats, fraud & standards proliferation
 - Filter message content based on partner requirements
- Operations
 - Minimize development and implementation costs
 - Minimize impact on and use of enterprise systems
 - Visibility into transactions & monitoring impossible

Development of Services shared with their Customers!

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Why this approach?

- Best fit with existing technology
 - No modifications to back end systems
 - Easiest integration
- Fastest time to market
 - Vendor responsive to Aeroplan requirements
- Highest confidence around confidentiality
 - WSS protects customers' information

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Meeting the Requirements

- Provisioning
 - Zero impact to Aeroplan's existing systems
 - Mediates partners sending SOAP/HTTPS to Aeroplan's XML over MQ
 - Dramatically reduced WS development costs and debugging time
- Security
 - Configuring and enforcing security independent of business logic
 - Secure and auditable message exchange
 - Protected against threats, fraud & standards proliferation
 - Filtering message content based on partner requirements
- Operational Scale
 - Proactively identifying debugging and production issues prior to crises
 - Managing with existing IT operations staff

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Takeaways

- **Provisioning + Security + Operations in a scalable appliance architecture = Rapid Time to Market**
- **Aeroplan went from POC to Production in 38 days start to finish**
- **Aeroplan launched first real-time miles-based e-commerce**
 - Addition of a new partner/redemption offer in hours
 - Enabling Aeroplan to grow its non-air redemption by more than 500% from 2004 to 2007
 - Saving Aeroplan money on communication and integration costs
- **What's next for Aeroplan**
 - Connect more redemption partners
 - Extend to mileage accumulation partners

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Retail Bank ROI Case Study



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Executive Summary

- Consequences of uncoordinated architectures in the retail bank to date:
 - \$12MM of redundant spending
 - Many duplicated functions
 - Silo focus of the retail bank and the IT organization
- A new Retail Banking SOA Strategy will overcome these consequences
 - Renovate the current environment
 - Rationalize services
 - Enhance functionality

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Source: CTOgroup



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Highly redundant spending

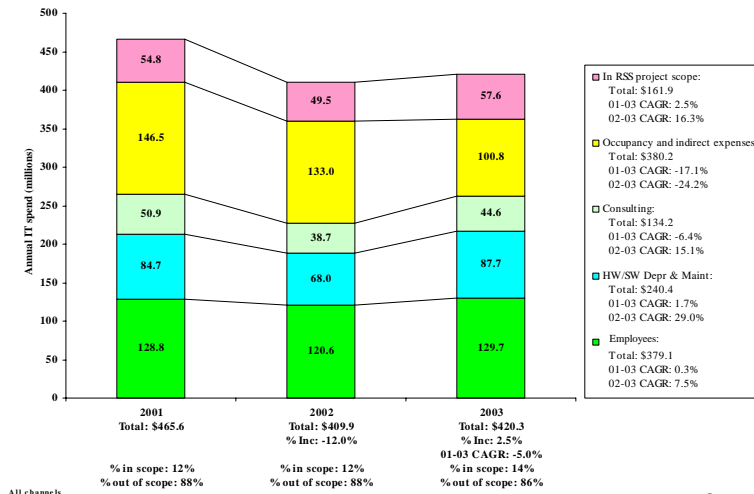
- Duplicate spend across channels
- Breakdown between discretionary and non-discretionary IT spending
- Cost of IT projects for the Retail Bank
- IT support costs

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Budget Allocation, Total Annual IT Spend



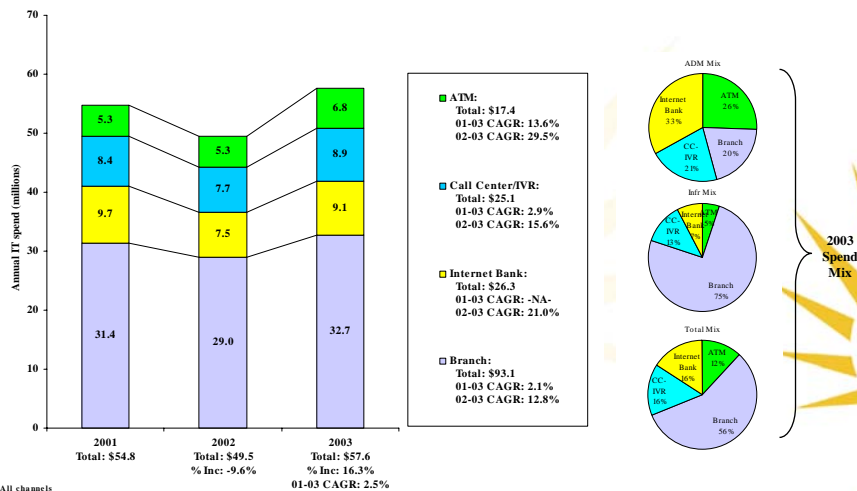
All channels

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Infrastructure = 50% of IT Spend



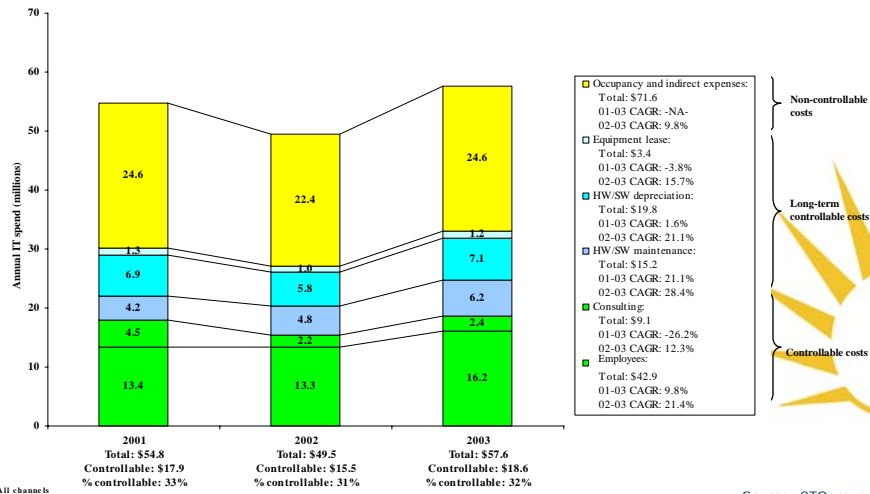
All channels

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Control one third of Annual Retail Channel IT spend

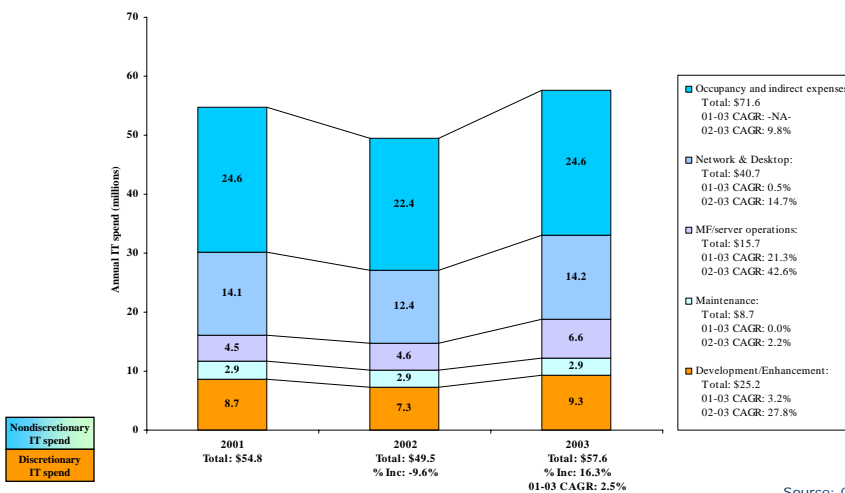


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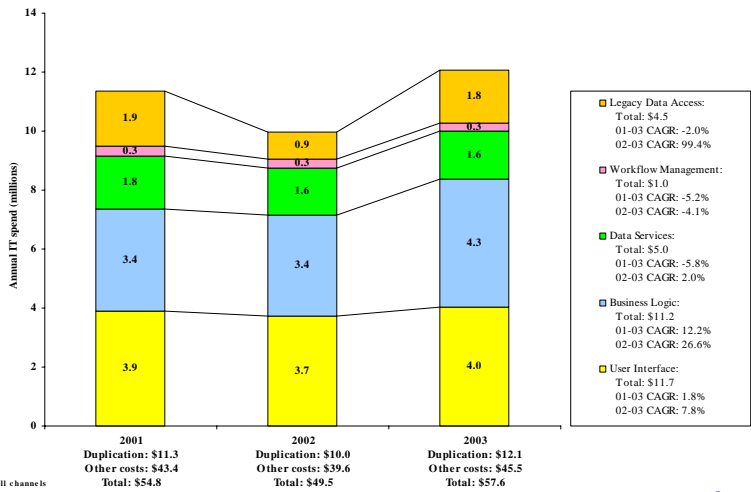
Discretionary IT spend < \$10 Million per Year



Source: CTGroup



\$12 million in annual duplication costs in Key Architectural Areas

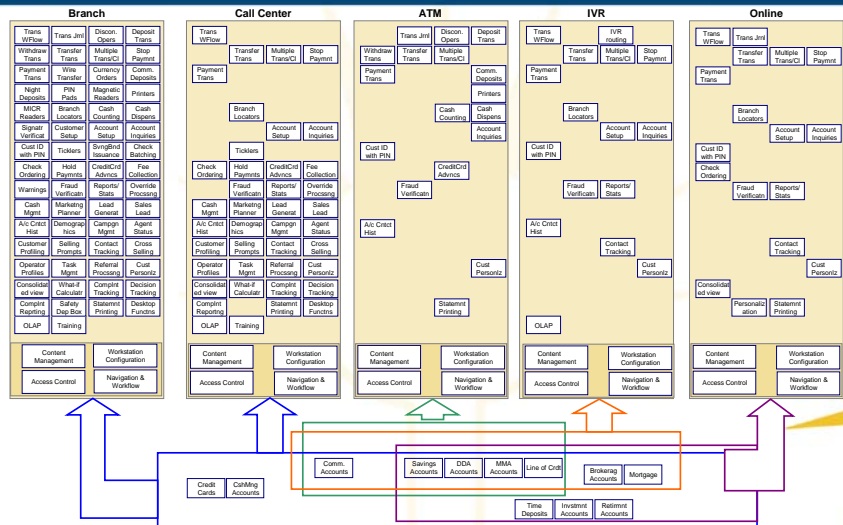


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Silos Account for the \$12 Million

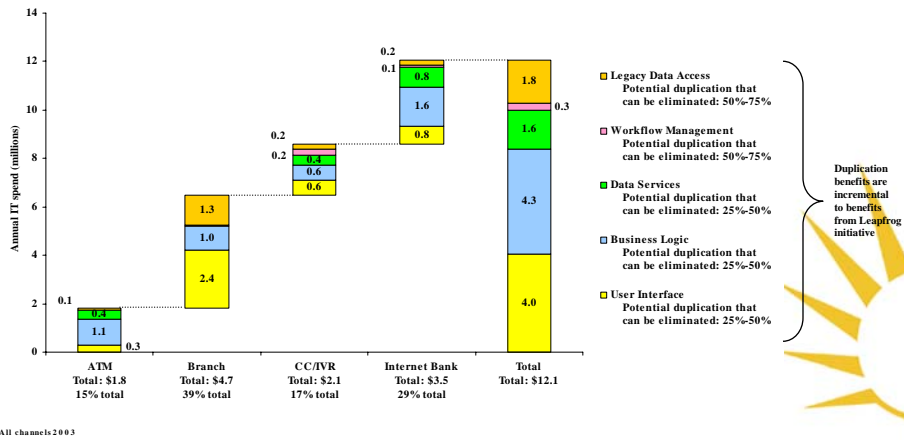


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Targeting \$12 Million Savings with SOA



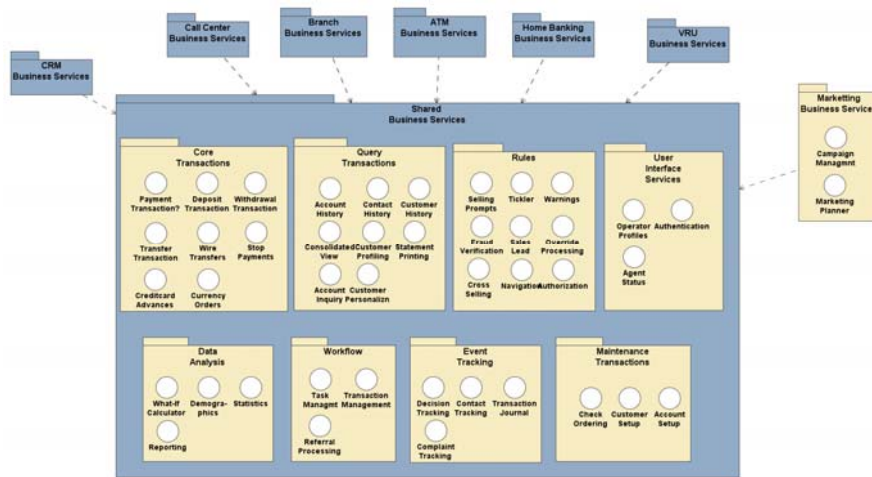
All channels 2003

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Reducing Redundancy with Shared Services



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Multi-channel SOA Strategy

- Three stage SOA strategy
 - Renovation stage
 - Oriented towards gathering of information and requirements
 - Creates architectures, plans, and infrastructure for retail systems
 - Focus on short-term projects that will stabilize and, where possible, enhance the technical environment
 - Rationalization stage
 - Re-use is targeted
 - Eliminate redundancies and inefficiencies
 - Methods and tools rolled out to optimize the environment as much as possible
 - Interim (short-term) solutions replaced by robust Services
 - Enhancement stage
 - Increasing / creating functionality
 - Improving business capabilities, efficiencies, and robustness of Services

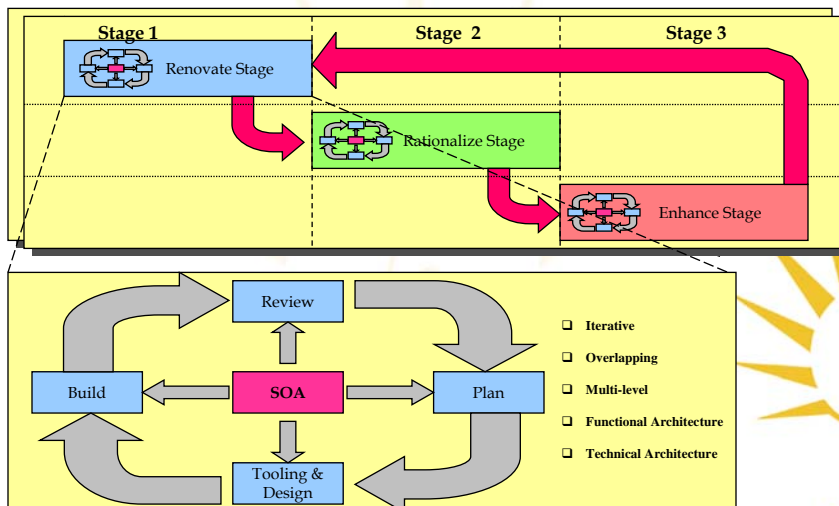
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Portfolio of Plans for Projects Relevant to Business Domains

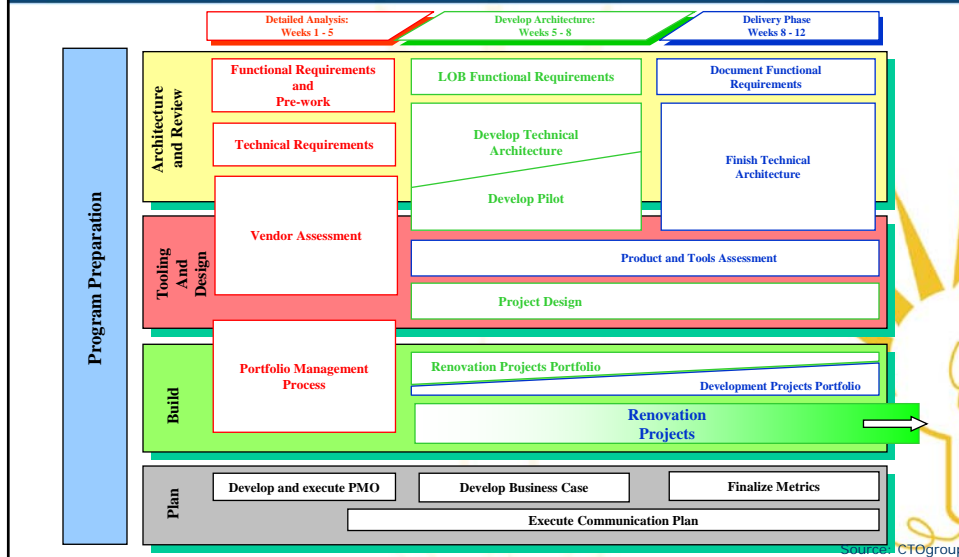


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SOA Project Plan



Develop Architecture

Major Tasks

- Develop next level of detail for Retail Banking strategy/business requirements and resulting IT implications
 - Interview and conduct workshops to capture business and IT input
 - Develop Retail Banking Technical Architecture
 - Develop Retail Banking Functional Architecture
- Document and assess current applications, architectures
- Develop production ready pilot to prove architecture



Key Deliverables

- Production ready pilot
- Business Architecture
- Technical Architecture
- Technical constraints
- Application health assessment
- CRM implications to architecture
- Integration requirements of other LOB systems



Vendor Assessment

Major Tasks

- Design the projects identified in the architecture review
- Develop a vendor and product selection process
- Document package and tool capability of selected vendors
- Recommend tools and packages as required
- Feed vendor product architecture information to the requirements and architecture teams



Key Deliverables

- Project designs with tooling requirements
- Short-list of selected key vendors and products
- Documented selection process with guidelines
- Repository of vendor product information
 - Architecture
 - Capabilities

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Portfolio Management Process

Major Tasks

- Develop a portfolio management process
- Identify “low hanging fruit” projects (and create business cases for them) which can be executed for immediate benefits
- Begin execution of “low hanging fruit” projects
- Develop a portfolio to help manage projects longer term
- Renovation proof of concept



Key Deliverables

- List of prioritized renovation projects with business cases
- Portfolio management process
- Projects portfolio
- Production ready renovated application

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Establish Program Management Office

Major Tasks

- Plan and coordinate activities
- Ensure that the teams are comprised of the right competencies
- Provide governance to the program from a change, metrics, budget, and information flow perspective
- Oversee all business cases and provide appropriate level of QA
- Ensure that all deliverables promised by the various projects are tracked and delivered on time
- Ensure that the right support and operations people are kept informed of projects



Key Deliverables

- Detailed project plans with team make-up
- Tactical level business case for change
- Metrics to measure change
- Communication plan

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Results

- Business/IT Alignment
- Remove redundant spending
- Eliminate redundant functionality and effort
- Focus on a coherent path forward

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Building the Business Case for SOA

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The Benefits of SOA...

- ✓ Reduced cost of integration
- ✓ Improved value from legacy applications
- ✓ Reuse leading to reduced redundancy
- ✓ Greater visibility for governance & compliance
- ✓ Increased reuse of software assets
- ✓ Business agility...
 - Respond quickly & efficiently to business change
 - Leverage change for competitive advantage

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Building the Business Case

- How to solve areas of urgent business pain?
- Target key pain point/SOA benefit
 - Cost of integration? – ROI straightforward
 - Regulatory compliance? – ROI = “risk of incarceration”
 - Shared Service benefits? – ROI depends upon customer value
 - Agility? – ROI hard to calculate
- Implement a SOA pilot

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SOA Pilots

- A few high ROI Services
- Build acceptance for SOA
- Get team up to speed
- Work out the kinks
- Pilot the governance model
- Part of an iterative approach to SOA



DANGER! Avoid the SOA Pilot Pitfall

- Piloting only the *Services* instead of the *architecture*
- Remember, the pilot is one step on the roadmap

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Thank You!



Jason Bloomberg
jbloomberg@zapthink.com



Ronald Schmelzer
rschmelzer@zapthink.com

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