IBM SOA Architect Summit

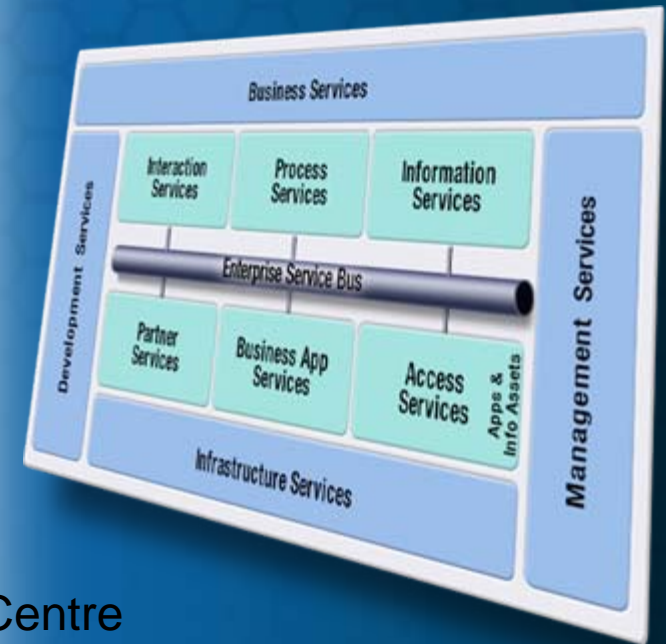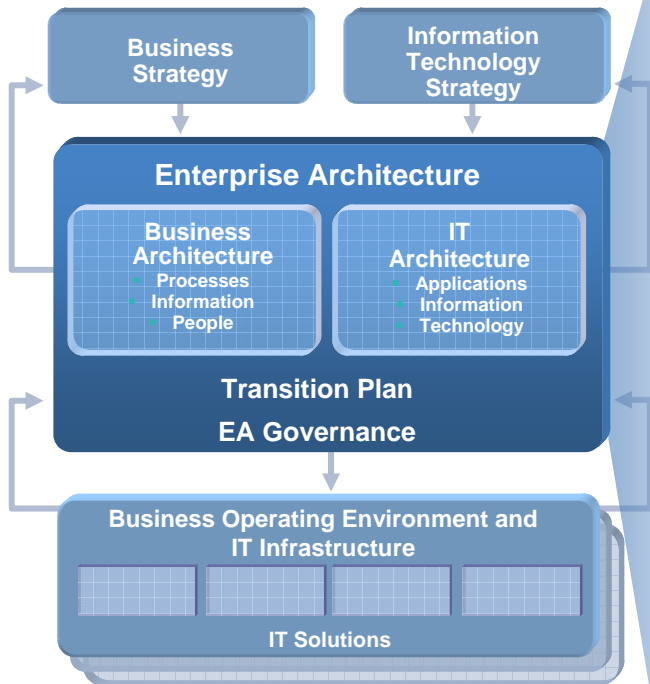**SOA on your terms and our expertise**

Information Architecture:

Leveraging Information in an SOA Environment

Dave McCarty
Solution Architect, e-business Solution Centre

SOA Architect Summit Roadmap

Business Strategy

Information Technology Strategy

Enterprise Architecture

Business Architecture
- Processes
- Information
- People

IT Architecture
- Applications
- Information
- Technology

Transition Plan

EA Governance

Business Operating Environment and IT Infrastructure

IT Solutions

What is the impact of SOA on current Enterprise Architectures?

- Alignment of Business and IT Architectures
- SOA Reference Models
- SOA Governance

How do you develop SOA with a business focus?

- Business Components
- SOA Design
- Business Process Management

How do you reuse applications in the context of SOA?

- Asset Discovery
- Application Reuse

How do you leverage information in an SOA?

- Information as a Service
- Master Data Management

How does my infrastructure support SOA?

- Service Management / QoS
- Security

SOA on your terms and our expertise

Agenda

- **SOA Information Architecture Considerations**
  - The Information Challenge
  - Separating Information from Applications & Processes

- **SOA Information Architecture Best Practices – Information as a Service**
  - Content Services
  - Information Integration Services
  - Master Data Services

- **IBM Capabilities to Support SOA Information Architecture**

- **Summary**

SOA on your terms and our expertise

The Information Challenge

Business Challenges

Globalization

M&As

Supply Chain

Risk & Compliance

Customer Loyalty

Operational Costs…

Information Must Become a Strategic Asset
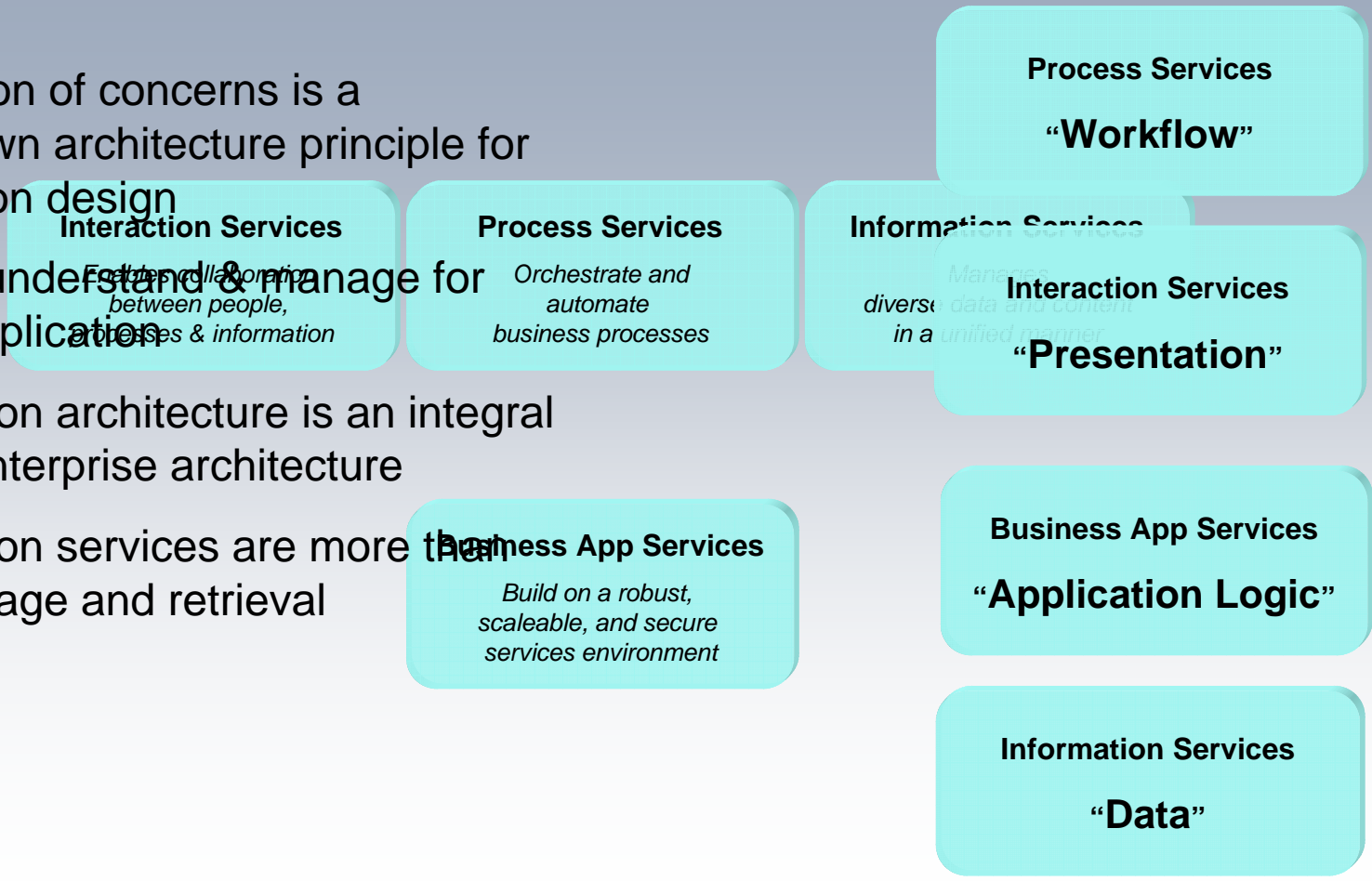
Information is in Silos

Multiple Versions

Inaccurate

Incomplete

Inaccessible

Untimely

Out of Context…

60%+ of CEOs: Need to do a better job leveraging information

People can spend up to 70% of their time looking for information
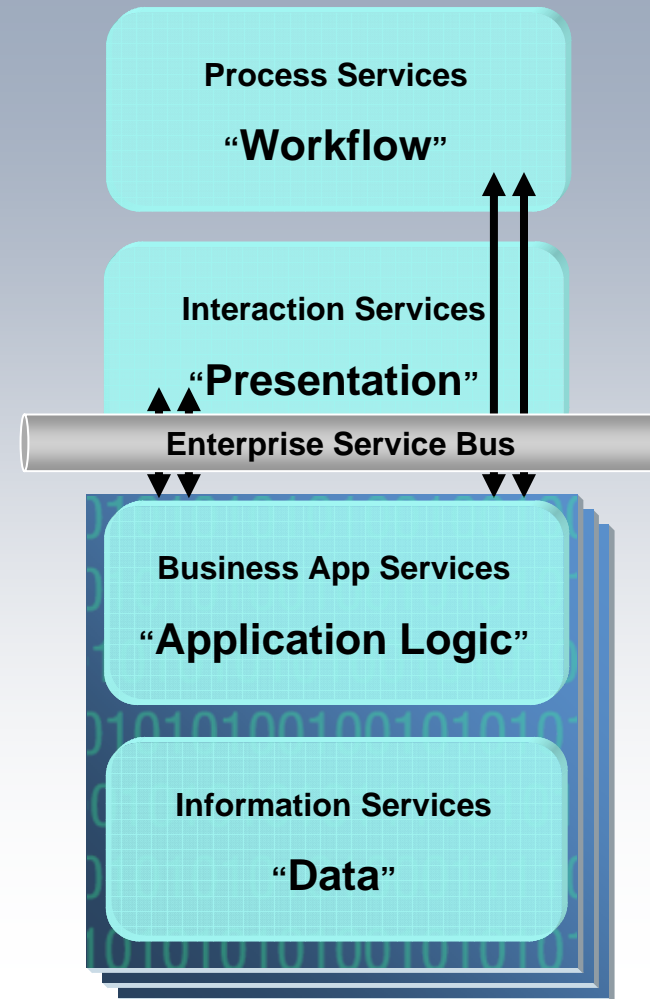
IBM

Separation of Concerns
Even Before SOA…

- Separation of concerns is a well-known architecture principle for application design

- Easy to understand & manage for single application

- Information architecture is an integral part of enterprise architecture

- Information services are more than data storage and retrieval

Interaction Services

Enables collaboration between people, processes & information

Process Services

Orchestrate and automate business processes

Information Services

Manages diverse data and content in a unified manner

Business App Services

Build on a robust, scaleable, and secure services environment

Process Services

"**Workflow**"

Interaction Services

"**Presentation**"

Business App Services

"**Application Logic**"

Information Services

"**Data**"

Separations of Concerns in Enterprise Architecture
Typically Focused on Exposing Application Services
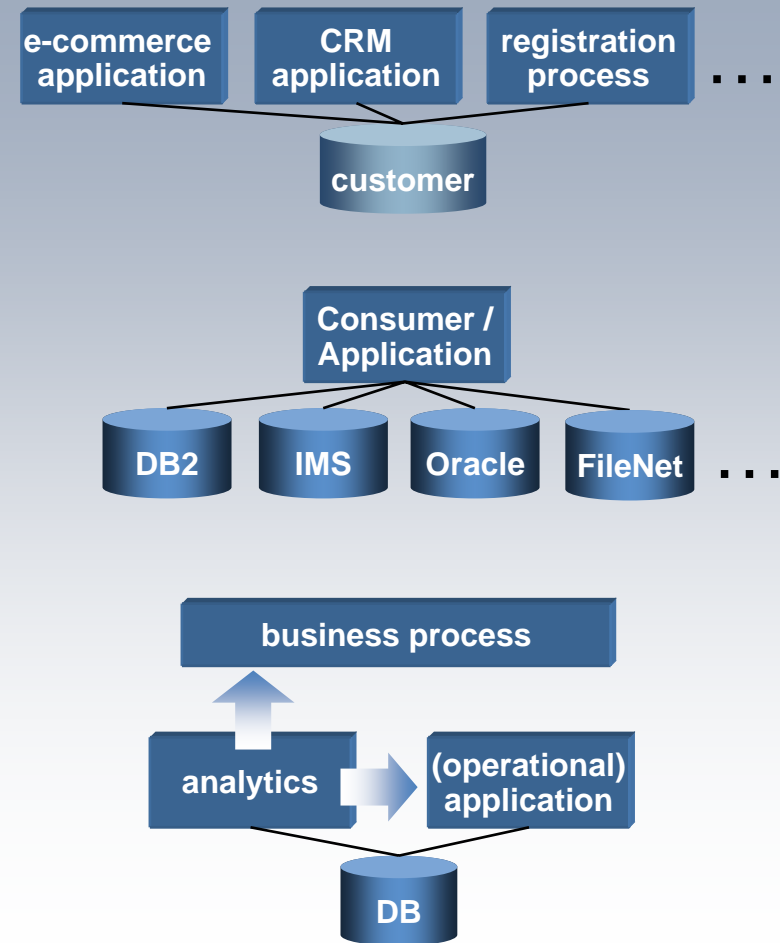
- Exposing application logic as services is straight-forward and enabled by tooling

- The integration of services focuses on mediation (brokering) and orchestration (workflow) of application logic

- **As a result, data is tightly coupled with the corresponding application logic**

Process Services

"Workflow"

Interaction Services

"Presentation"

Enterprise Service Bus

Business App Services

"Application Logic"

Information Services

"Data"

SOA on your terms and our expertise

Information, Applications and Processes
Providing Separation of Concerns

- **Reuse**: leverage same information for multiple consumers, not just within one (silo) application

- **Accessibility, distribution**: understand, cleanse and effectively transform & integrate data & content

- **Single version of the truth**: build trusted source of information

- **Access to analytical data**: deliver real-time access to various consumers or as part of a business process

| e-commerce application | CRM application | registration process | . . . |

customer

Consumer / Application

| DB2 | IMS | Oracle | FileNet | . . . |

business process

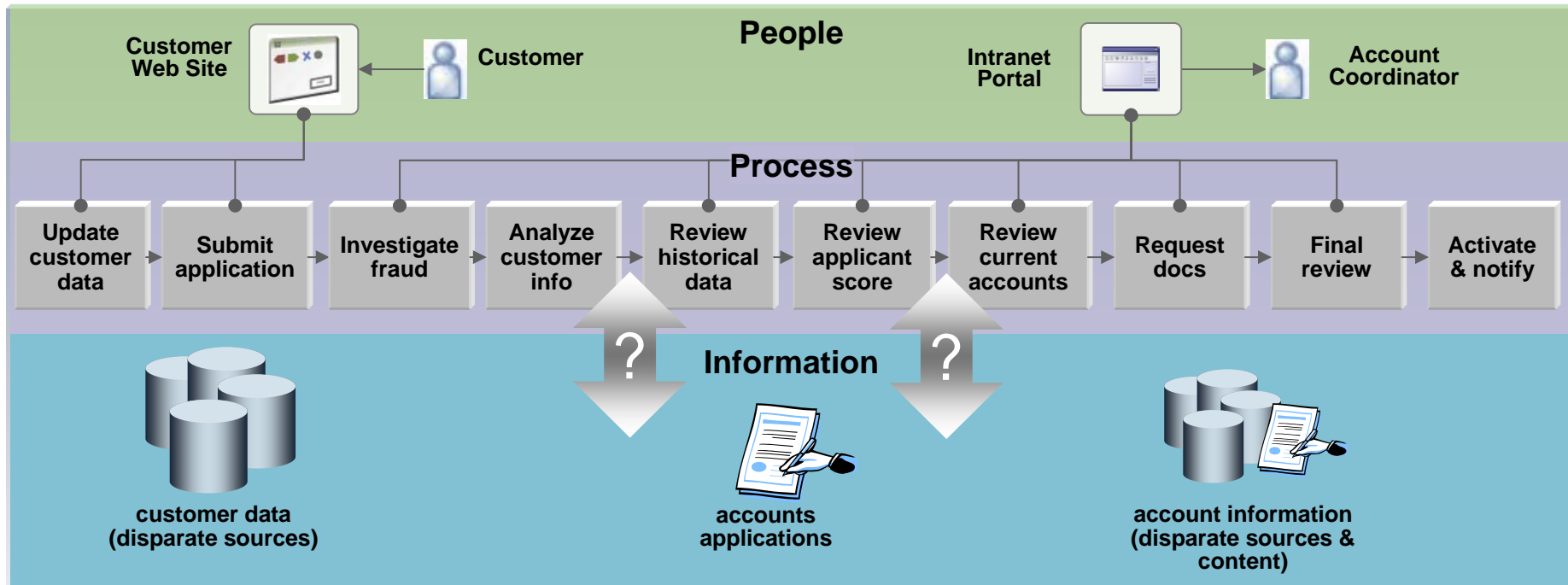analytics → (operational) application

DB

Agenda

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- IBM Capabilities to Support SOA Information Architecture

- Summary

SOA on your terms and our expertise

SOA Information Architecture Scenario

People

Customer Web Site — Customer

Intranet Portal — Account Coordinator

Process

| Update customer data | Submit application | Investigate fraud | Analyze customer info | Review historical data | Review applicant score | Review current accounts | Request docs | Final review | Activate & notify |

Information

? ?

customer data (disparate sources)

accounts applications

account information (disparate sources & content)

Many organizations face this situation…

Goal: services that provide accurate, consistent, integrated information to business processes and people

Starting point: your existing legacy, inconsistent & diverse data

Approach: Information as a Service

Aligning SOA and Information on Demand
Information as a Service

- **Information on Demand Supports SOA**
  - **Trusted & integrated information** - structured and unstructured - can be leveraged within processes & applications
  - **Improved governance** of how and where information is used

- **SOA Supports Information on Demand**
  - Expose **controlled & reusable** information access to a **broad range of consumers**
  - Avoid "I have built 40 *data services* but nobody is using them"

Components of Information as a Service
Information Services from Information on Demand
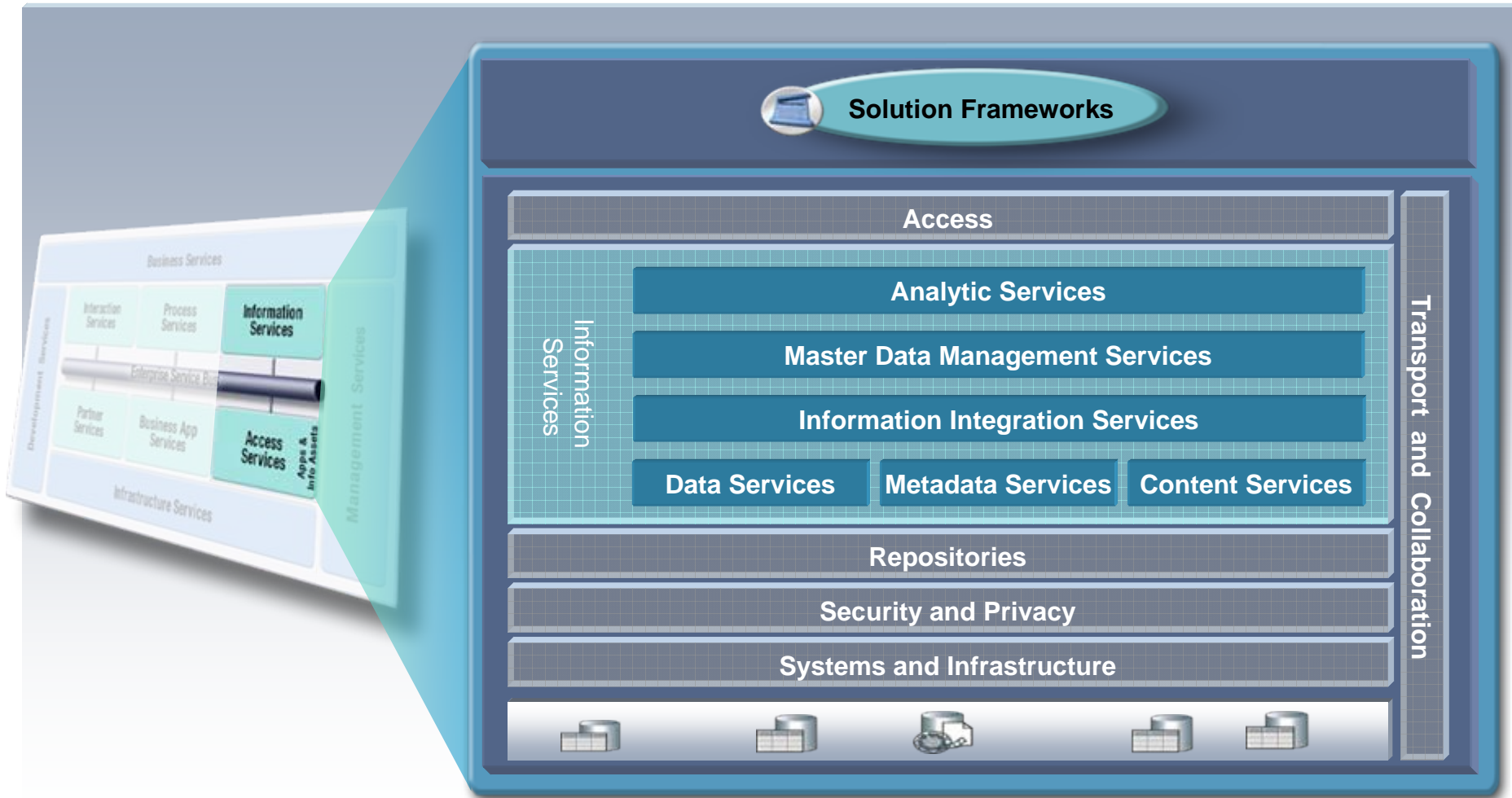
Integrate Unstructured Information Into SOA & Process Flow
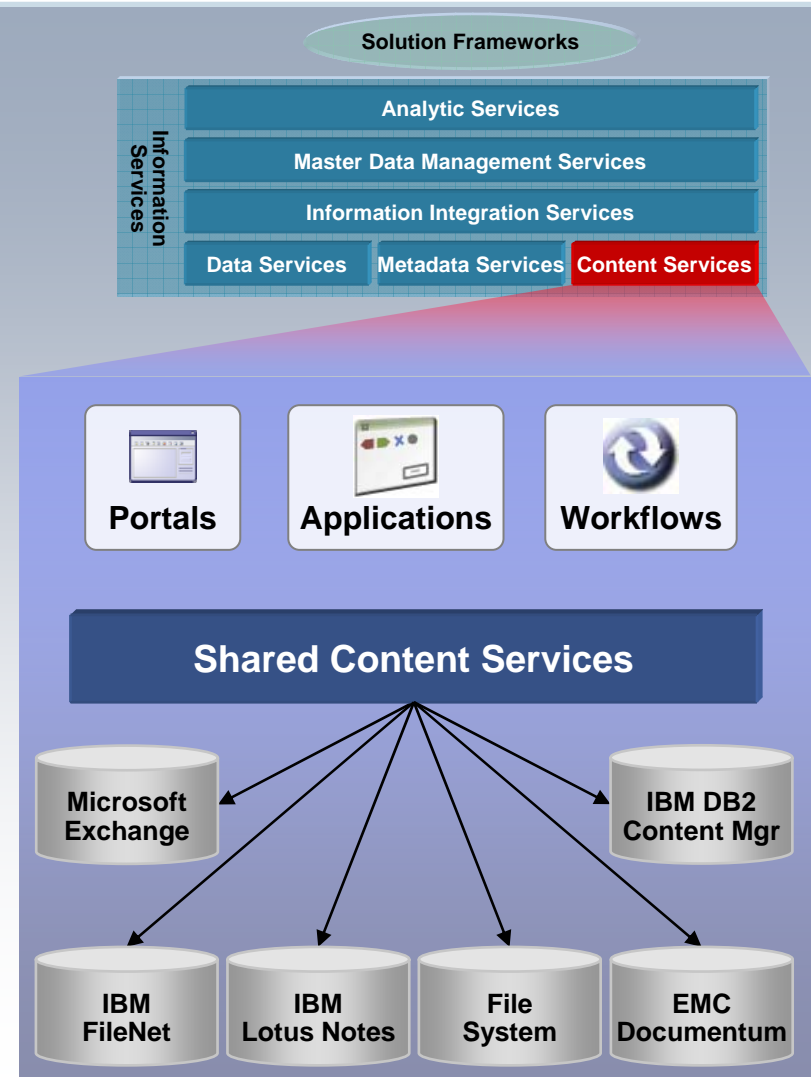
- **Business Challenge**
  - Wasted time searching for information
  - Lack of automation to process unstructured information (paper-based, manual)

- **Key Capabilities**
  - Content-centric workflow to embed unstructured information into processes
  - Decouple content consumer from a variety of content repositories

- **Business Benefit**
  - Improved customer satisfaction along with increase in request to documents
  - Significant savings for initial rollout
  - Significant savings for each new business unit

Solution Frameworks

Information Services

| Analytic Services |
| Master Data Management Services |
| Information Integration Services |
| Data Services | Metadata Services | Content Services |

Portals **Applications** **Workflows**

Shared Content Services

Microsoft Exchange

IBM DB2 Content Mgr

IBM FileNet

IBM Lotus Notes

File System

EMC Documentum

SOA on your terms and our expertise

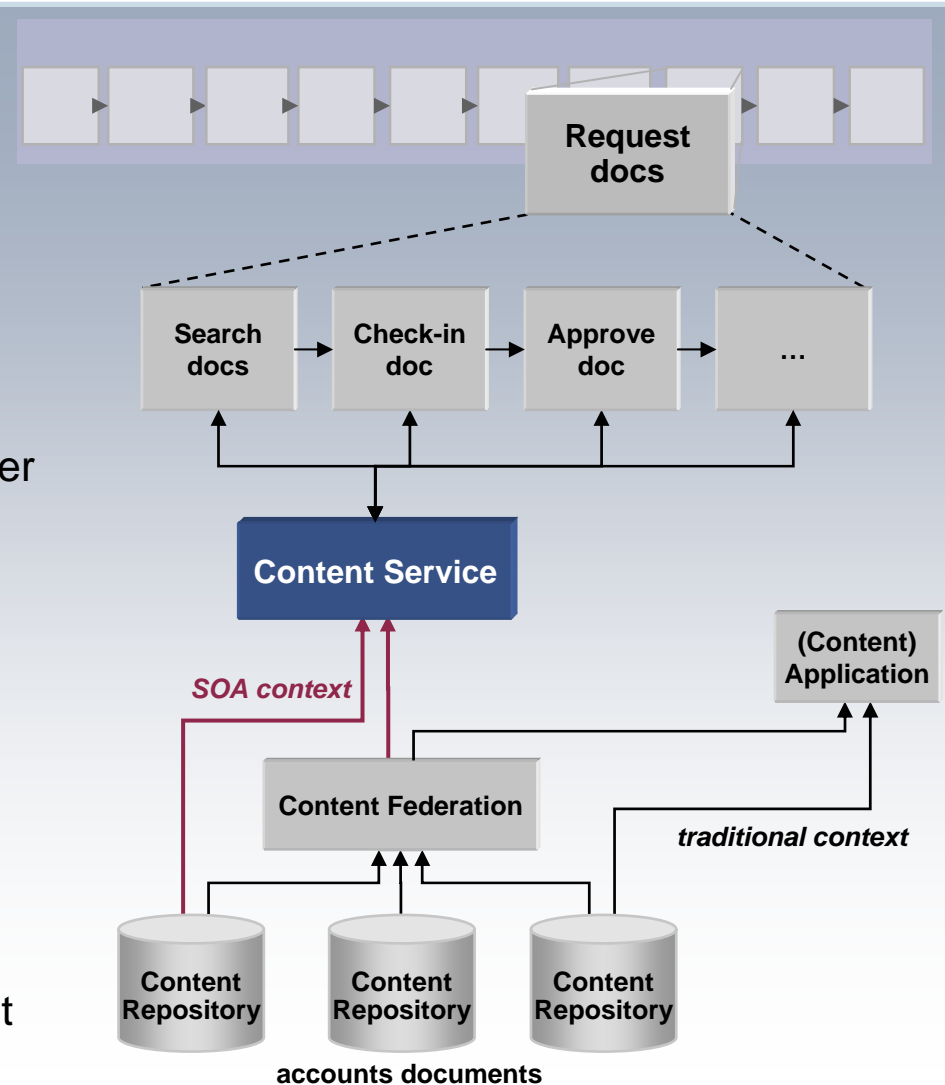# Leverage Content-Centric Services & Workflows

- **As Is Environment**
  - Partially paper-based processes
  - Inefficient processes to manage documents
  - Disparate content repositories, point-to-point implementations to access content

- **Solution Characteristics**
  - Decouple content consumer from provider through reusable services, leveraging:
    - *Content management functionality*
    - *Content federation from disparate repositories into common virtual view*
  - Optimized content-centric processes

- **Results**
  - Optimized process to manage content
  - Content-centric process aligned with overall business process
  - Access content through single consistent content service interface

Request docs

| Search docs | Check-in doc | Approve doc | ... |

Content Service

SOA context

(Content) Application

Content Federation

traditional context

Content Repository — Content Repository — Content Repository

accounts documents

SOA on your terms and our expertise

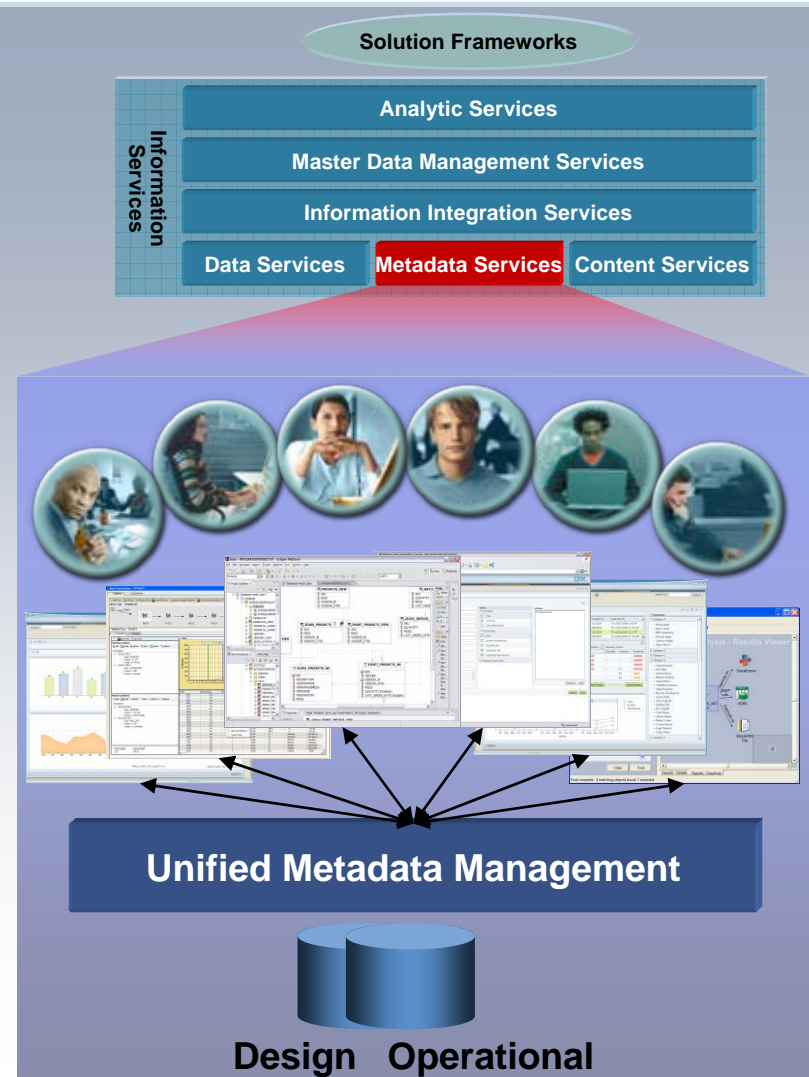# Shared Metadata Across Domains and Tools

- **Business Challenge**
  - IT staff spends too much time searching for artifacts related to their tasks

- **Key Capabilities**
  - Common metadata foundation to access and share artifacts
  - Role-based views and functionality

- **Business Benefit**
  - Improve common understanding
  - Improve collaboration
  - Increase in worker productivity

Solution Frameworks

Information Services

Analytic Services

Master Data Management Services

Information Integration Services

Data Services | Metadata Services | Content Services

Unified Metadata Management

Design   Operational

SOA on your terms and our expertise

Unified Access to & Management of XML & Enterprise Data
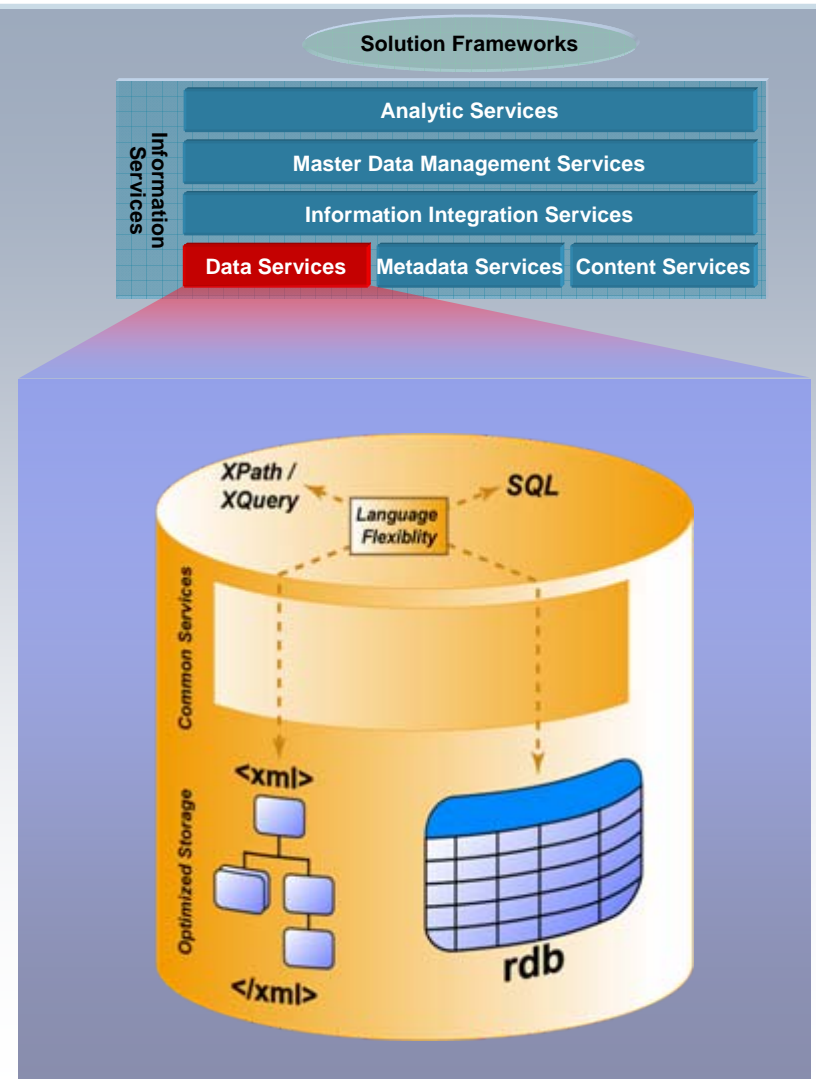
- **Business Challenge**
  - Lack of holistic view of enterprise information, specifically around XML and relational data

- **Key Capabilities**
  - Performance, integrity, protection, and scale combined with flexibility of XML
  - Manage XML and relational data holistically – in the same database

- **Business Benefit**
  - Significant reduction in development time and in iterative deployment
  - Significantly fewer lines of code
  - Significantly higher performance

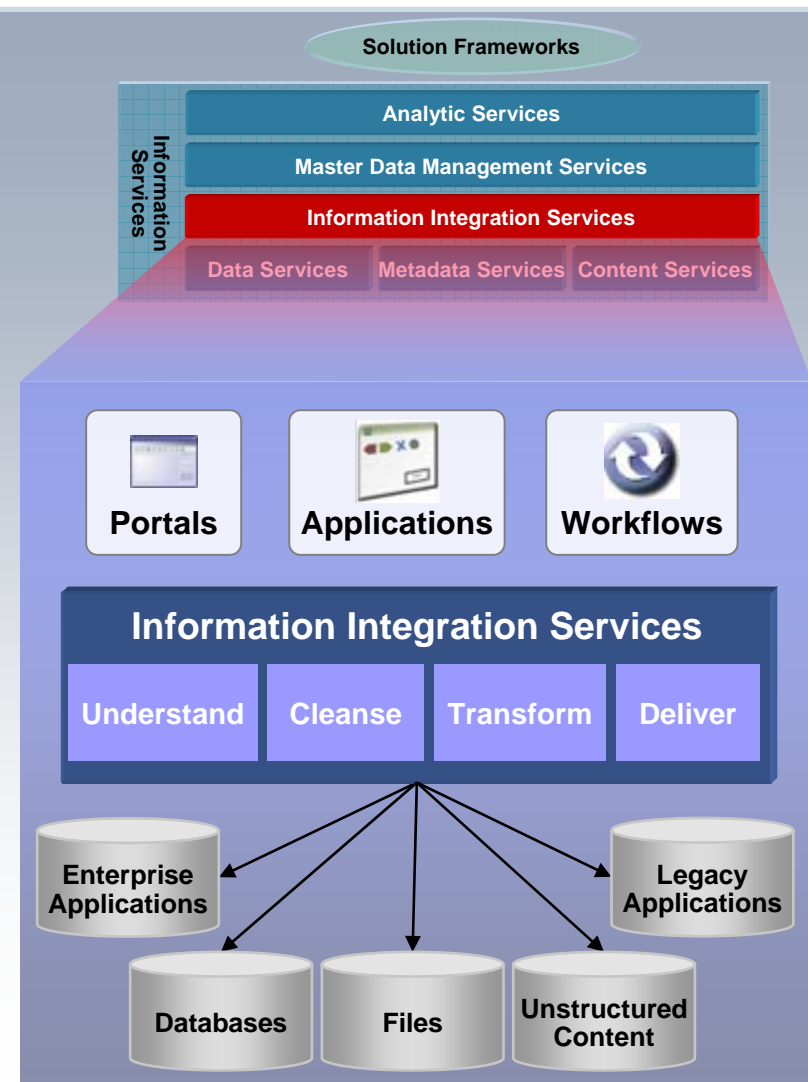# Single Interface to Disparate Data Sources

- **Business Challenge**
  - Lack of business insight and poor decisions due to inaccurate, inconsistent and partial information
  - Significant overhead to provide correct data

- **Key Capabilities**
  - Profile & understand your service data
  - Enterprise-wide consistent cleansing rules for applications and data
  - Integrate and transform data from various sources (federate, consolidate)

- **Business Benefit**
  - Increased worker productivity: Information accessible to every user when and how they need it

Solution Frameworks

Information Services

Analytic Services

Master Data Management Services

Information Integration Services

Data Services | Metadata Services | Content Services

Portals | **Applications** | **Workflows**

Information Integration Services

Understand | **Cleanse** | **Transform** | **Deliver**

Enterprise Applications | Legacy Applications

Databases | Files | Unstructured Content

Understand Your Data
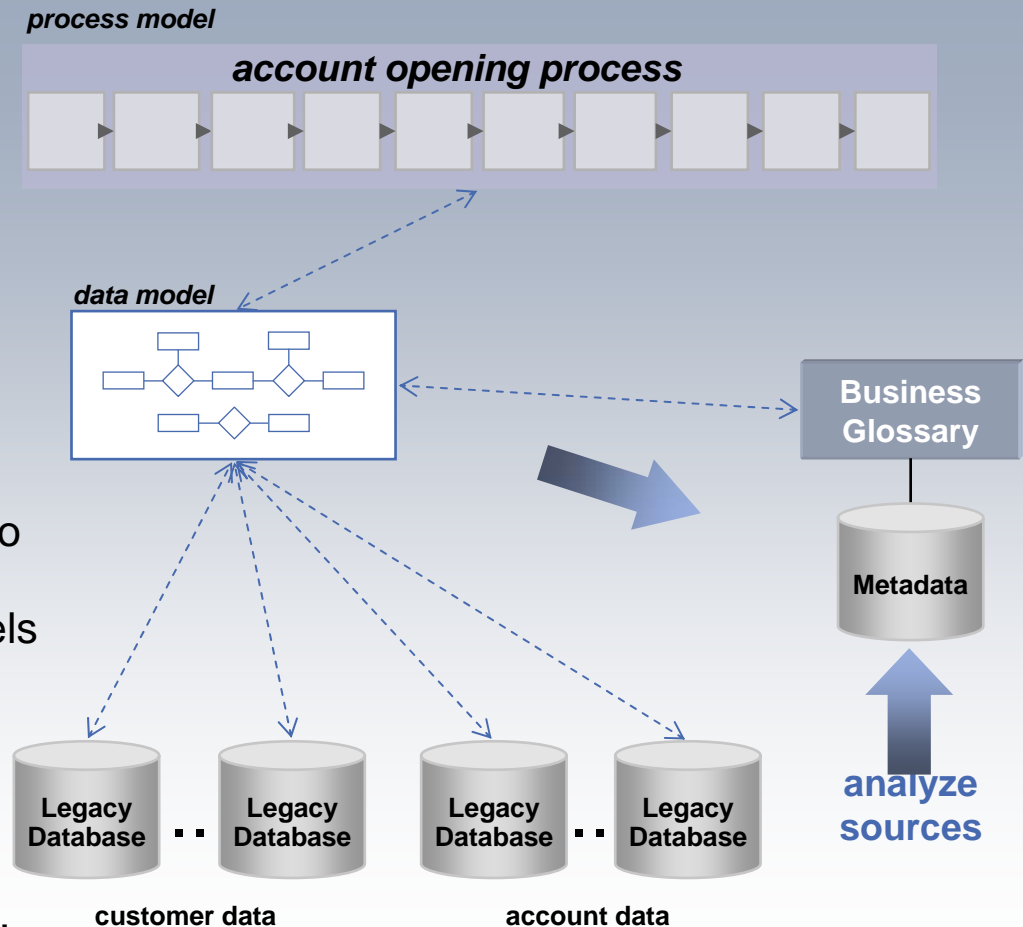## *Data Analysis as a Prerequisite to Service Exposure*

- **As-Is Environment**
  - Unclear business terms; inconsistency between business and technical terms
  - Uncertainty of data quality
  - Inconsistency between process models and data models

- **Solution Characteristics**
  - Common business glossary
  - Assess and analyze data sources to determine degree of data quality
  - Align data, process & service models

- **Results**
  - Common definition of key terms
  - Discover structural inconsistencies and anomalies in data formats
  - Consistent data format across data, service and process layers

process model

account opening process

data model

Business Glossary

Metadata

analyze sources

Legacy Database ▪ ▪ **Legacy Database**   **Legacy Database** ▪ ▪ **Legacy Database**

customer data   **account data**

Cleanse Your Data
Consistent, Standardized Data Throughout the Enterprise
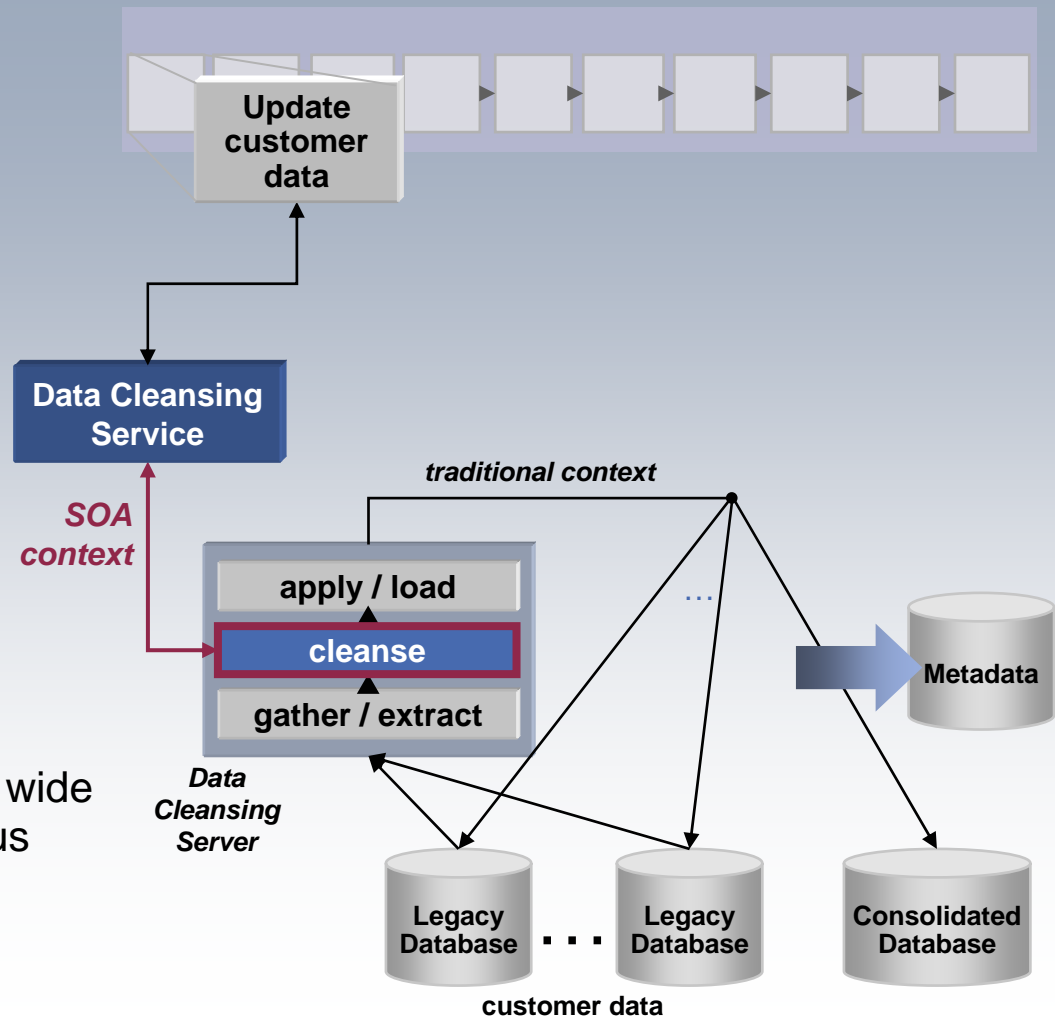
- **As-Is Environment**
  - Lack of data standards
  - Data inconsistencies
  - Data redundancies

- **Solution Characteristics**
  - Standardization of data formats
  - Data enrichment
  - Duplicate identification & removal
  - Apply same data cleansing rules against persisted data and expose as services

- **Results**
  - Single & consistent definition of cleansing rules, reused enterprise wide
  - Apply against data stored in various customer databases
  - Apply during data entry

Update customer data

Data Cleansing Service

SOA context

traditional context

apply / load

cleanse

gather / extract

Data Cleansing Server

...

Metadata

Legacy Database

Legacy Database

Consolidated Database

customer data

Transform Your Data
Create Trusted Information from Disparate Sources
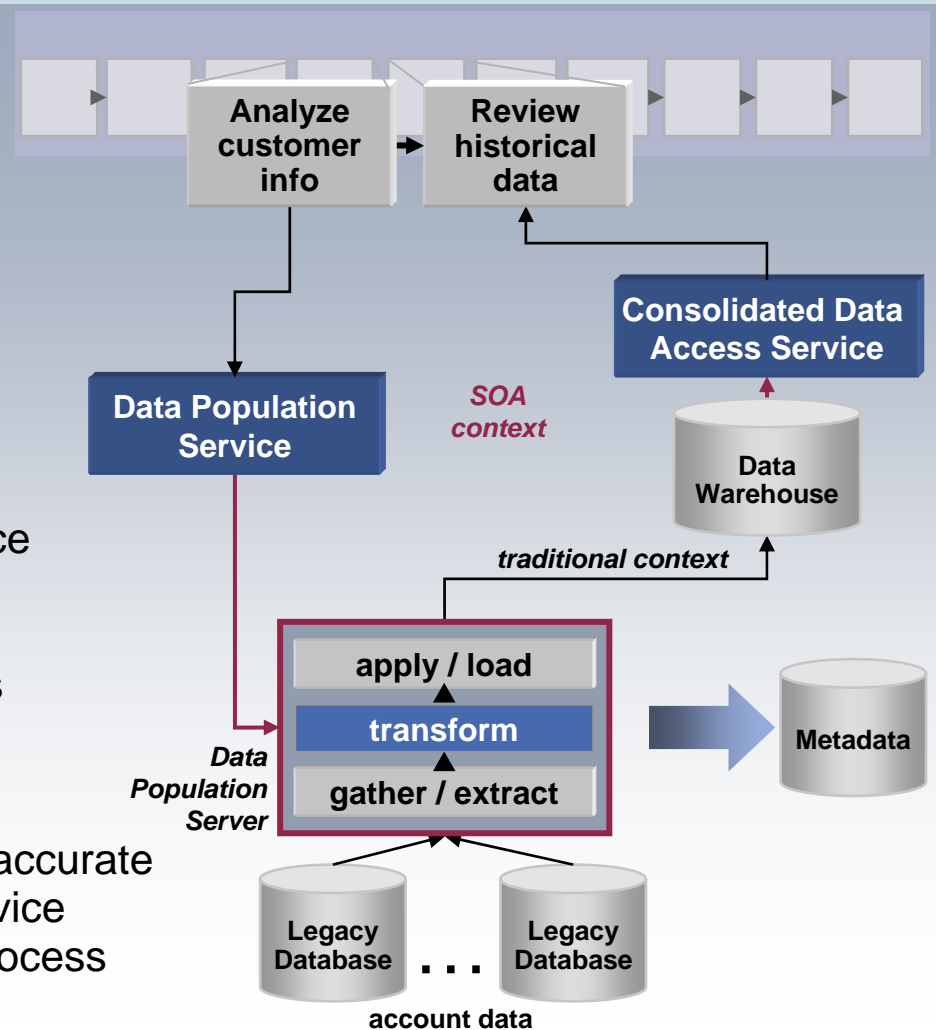
- **As-Is Environment**
  - Data resides in disparate sources
  - Manual & redundant integration of data by multiple consumers results in high costs and inconsistent/inaccurate data
  - Slow response time due to large data volume and complex transformations

- **Solution Characteristics**
  - Apply transformations on extracted source data; copy into consolidated target and expose consolidated data as services
  - Invoke population from business process

- **Results**
  - Multiple consumers can access trusted, accurate and integrated information through a service
  - Data availability aligned with business process

Analyze customer info → Review historical data

Consolidated Data Access Service

Data Population Service

SOA context

Data Warehouse

traditional context

apply / load

transform

gather / extract

Metadata

Data Population Server

Legacy Database . . . Legacy Database

account data

SOA on your terms and our expertise

Deliver Your Data
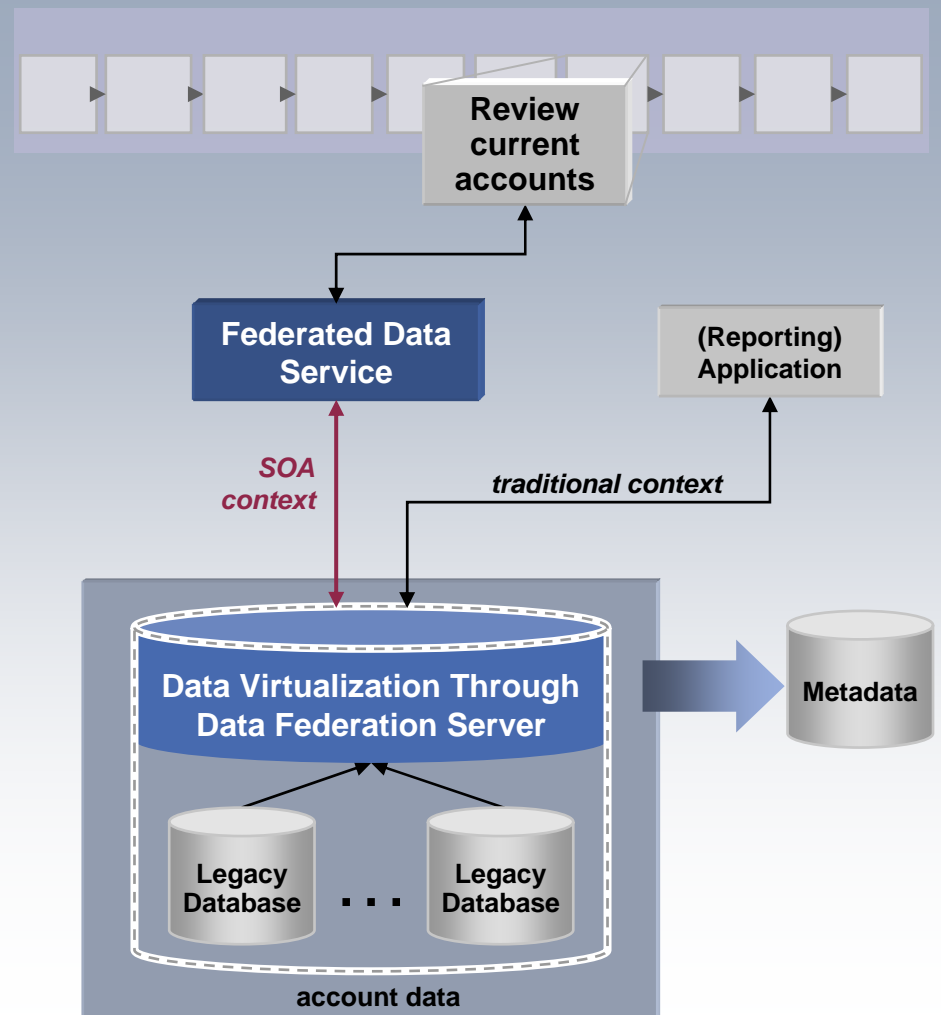## *Virtualized Through Services*

- **As-Is Environment**
  – Data resides in disparate sources
  – Manual & redundant integration of data by multiple consumers results in high costs and inconsistent/inaccurate data
  – Slow response time due to inefficient real-time access

- **Solution Characteristics**
  – On demand integration instead of redundant data
  – Transparent & optimized access to distributed, heterogeneous sources

- **Results**
  – Real-time access to distributed information, fast response time
  – Scalable approach for adding more data sources

Review current accounts

Federated Data Service

(Reporting) Application

SOA context

traditional context

Data Virtualization Through Data Federation Server

Metadata

Legacy Database ... **Legacy Database**

account data

Access to Trusted & Integrated Master Data

- **Business Challenge**
  - Single view of customers or products
  - Gain control of disparate silos

- **Key Capabilities**
  - Consolidate and cleanse master data from disparate sources
  - Provide trusted source of master data in various styles: collaborative, operational, analytical

- **Business Benefit**
  - Organizational effectiveness
  - Increase in data accuracy
  - Significant savings

SOA on your terms and our expertise
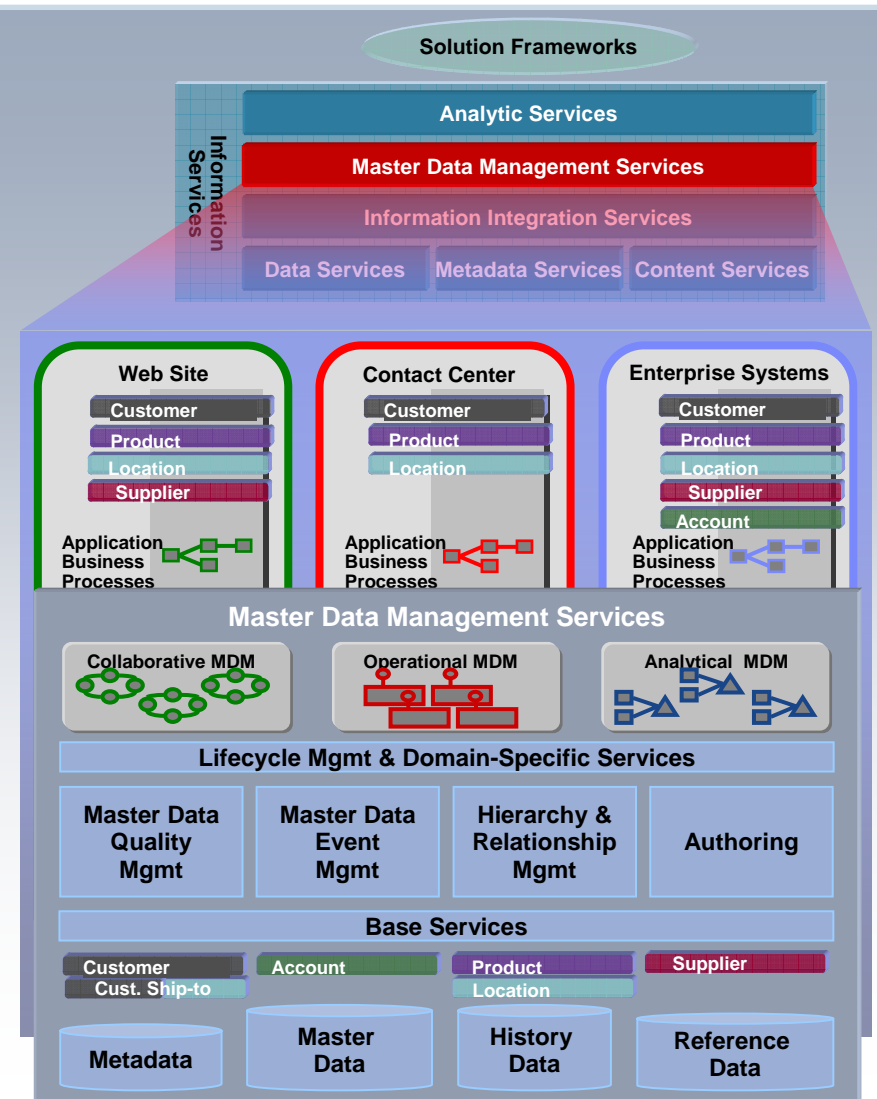
Providing Trusted, Timely, Consistent & Complete Information
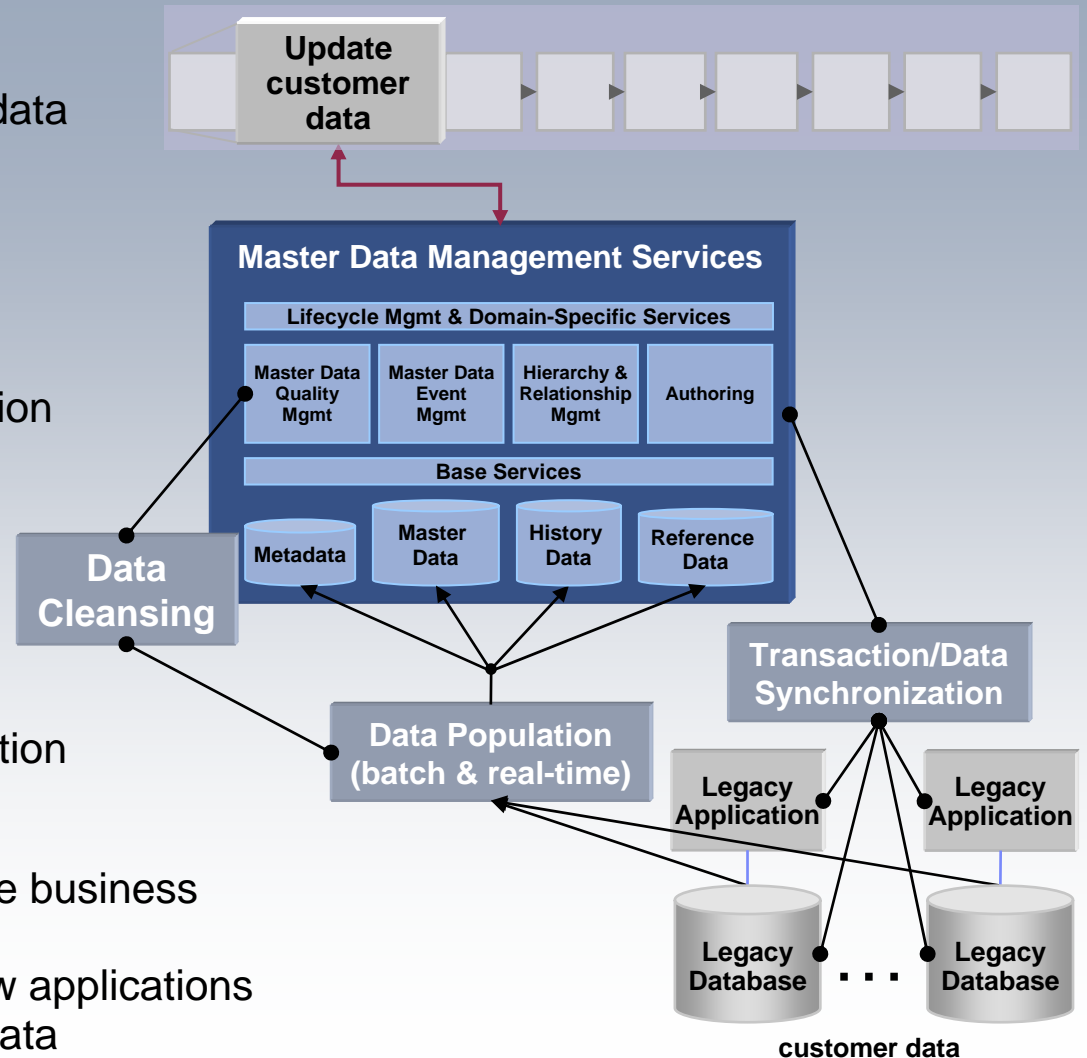
- **As Is Environment**
  - Inconsistent, incomplete master data
  - Redundant and inaccurate implementations to access and integrate master data

- **Solution Characteristics**
  - Integrate data using data population
  - Guarantee quality using data cleansing
  - Master data repository to provide single version of the truth for service access
  - Ensure consistency through transaction and data synchronization

- **Results**
  - Established trusted source of core business information
  - Scalable approach for adding new applications and providing access to trusted data

Update customer data

Master Data Management Services

Lifecycle Mgmt & Domain-Specific Services

Master Data Quality Mgmt	Master Data Event Mgmt	Hierarchy & Relationship Mgmt	Authoring

Base Services

Metadata | Master Data | History Data | Reference Data

Data Cleansing

Transaction/Data Synchronization

Data Population (batch & real-time)

Legacy Application

Legacy Application

Legacy Database · · · **Legacy Database**

customer data

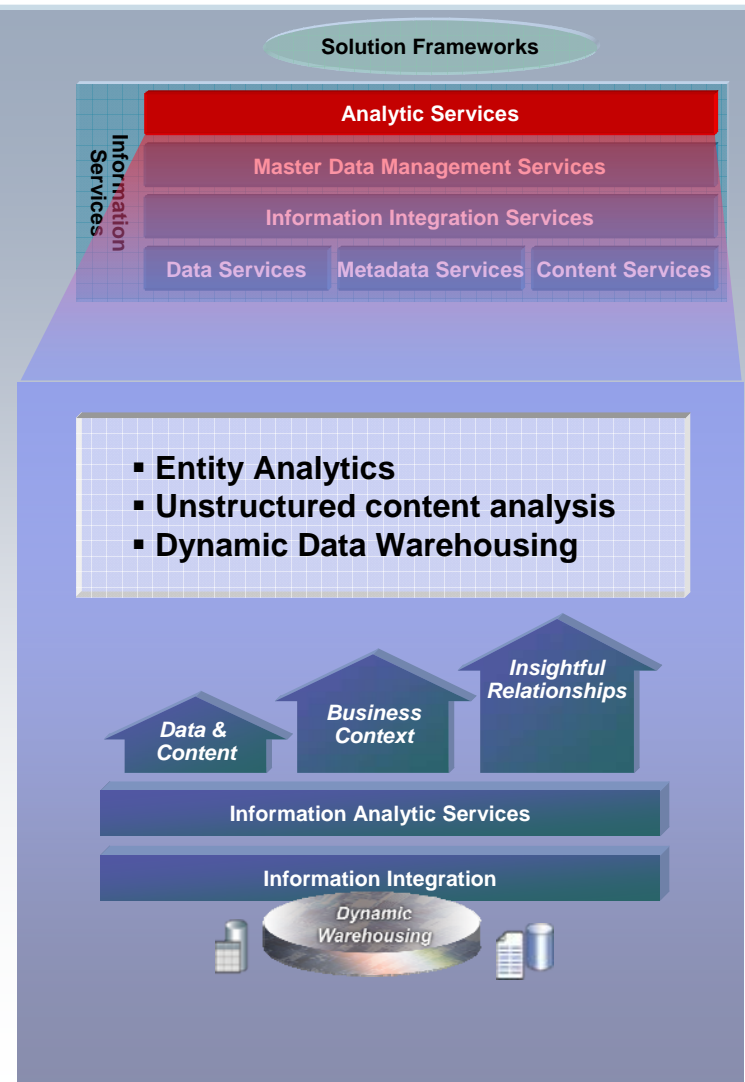# Leverage Insight From Analytic Data in SOA

- **Business Challenge**
  - Key metrics are not current and consistent
  - Lack of early warnings
  - Identity conflicts and uncertainty
  - Fraud, risk & compliance

- **Key Capabilities**
  - Expose analytical data as services: KPIs, scoring, extracted insight from structured and unstructured data
  - Embed real-time analytics into applications and business processes

- **Business Benefit**
  - Improved insight into key metrics; accurate information, in-line and in-context
  - Improved decision-making

Solution Frameworks

Information Services

Analytic Services

Master Data Management Services

Information Integration Services

Data Services **Metadata Services** **Content Services**

- **Entity Analytics**
- **Unstructured content analysis**
- **Dynamic Data Warehousing**

Insightful Relationships

Business Context

Data & Content

Information Analytic Services

Information Integration

Dynamic Warehousing

SOA on your terms and our expertise

Leverage Analytic Insight in SOA

As Is Environment
- High exposure to fraud due to disparate data about individuals
- Significant overhead to implement compliance guidelines
- Manual, inefficient implementations to aggregate data for KPIs, scores, etc.

Solution Characteristics
- Aggregate data by applying data population pattern, cleansing pattern and possibly analytical enrichment
- Expose analytic insight from warehouses and stores as services

Results
- Improve analytical insight
- Time to market improvement; scalability and performance gains

SOA on your terms and our expertise
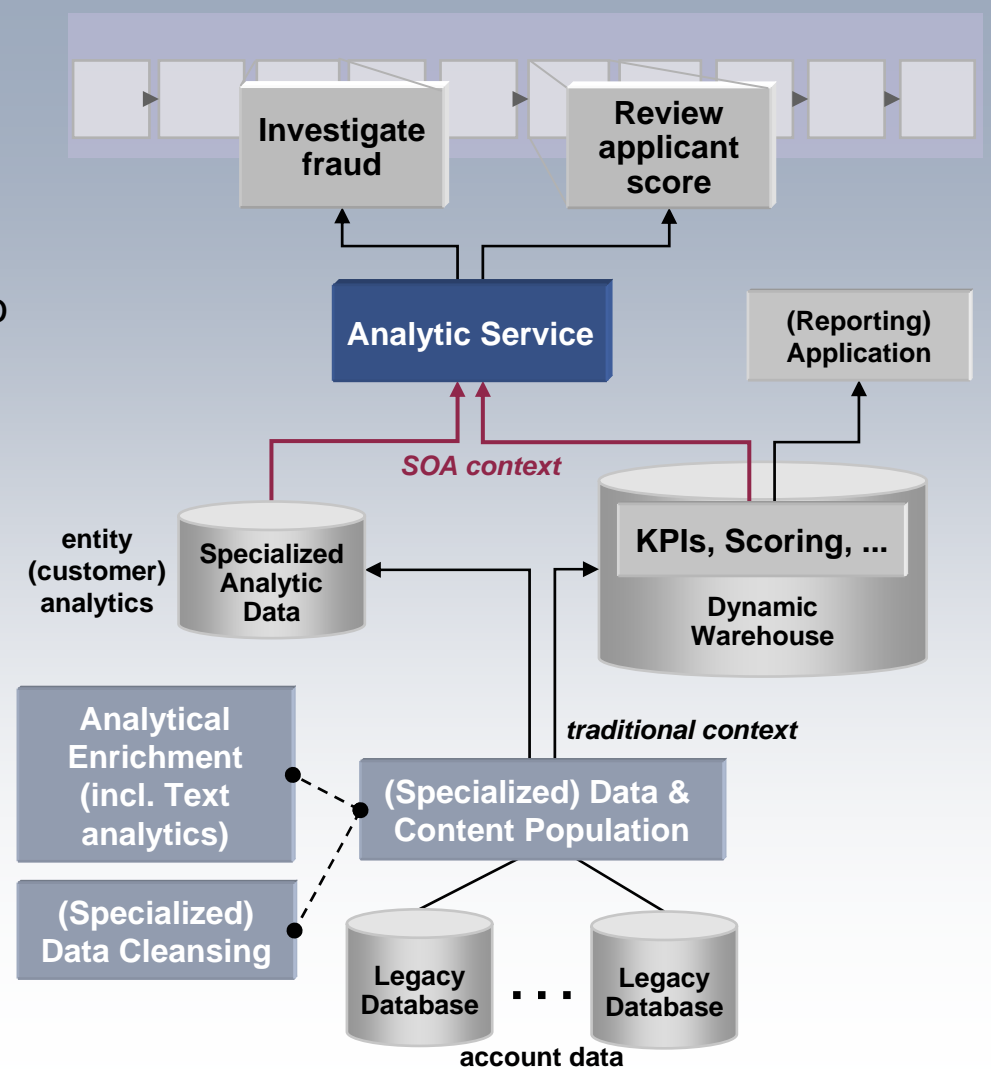
Accelerate Your Projects With Industry Models

- **Business Challenges**
  - Integration through SOA
  - Core system renewal
  - Process transformation
  - Operational insight, risk and compliance
  - Data governance and standardization

- **Key Capabilities**
  - Banking models
  - Insurance models
  - Retail models
  - Telecommunication models

- **Business Benefit**
  - Reduces process and use case analysis
  - Broad coverage of data requirements
  - Accelerates stakeholder approval
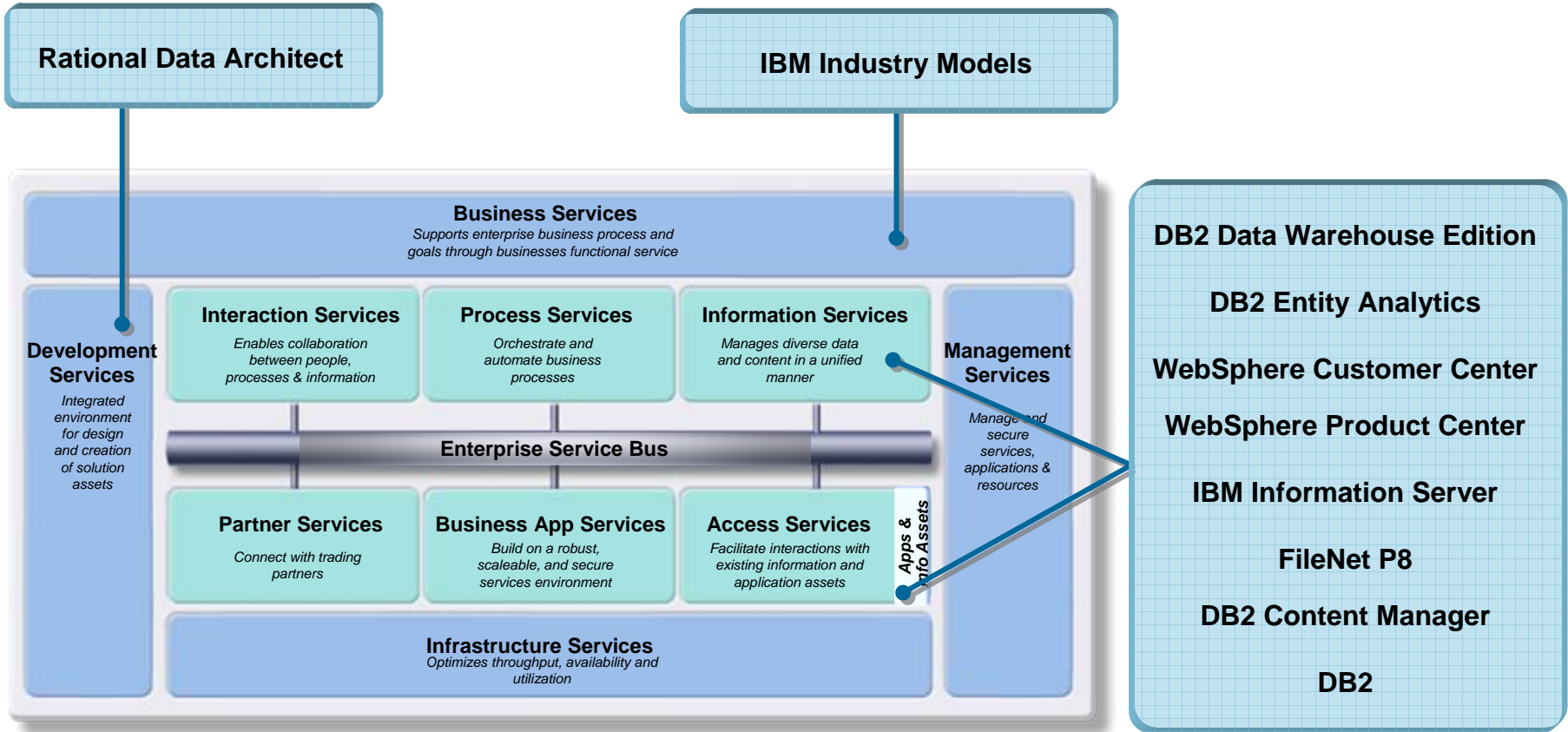 - Reduces development time
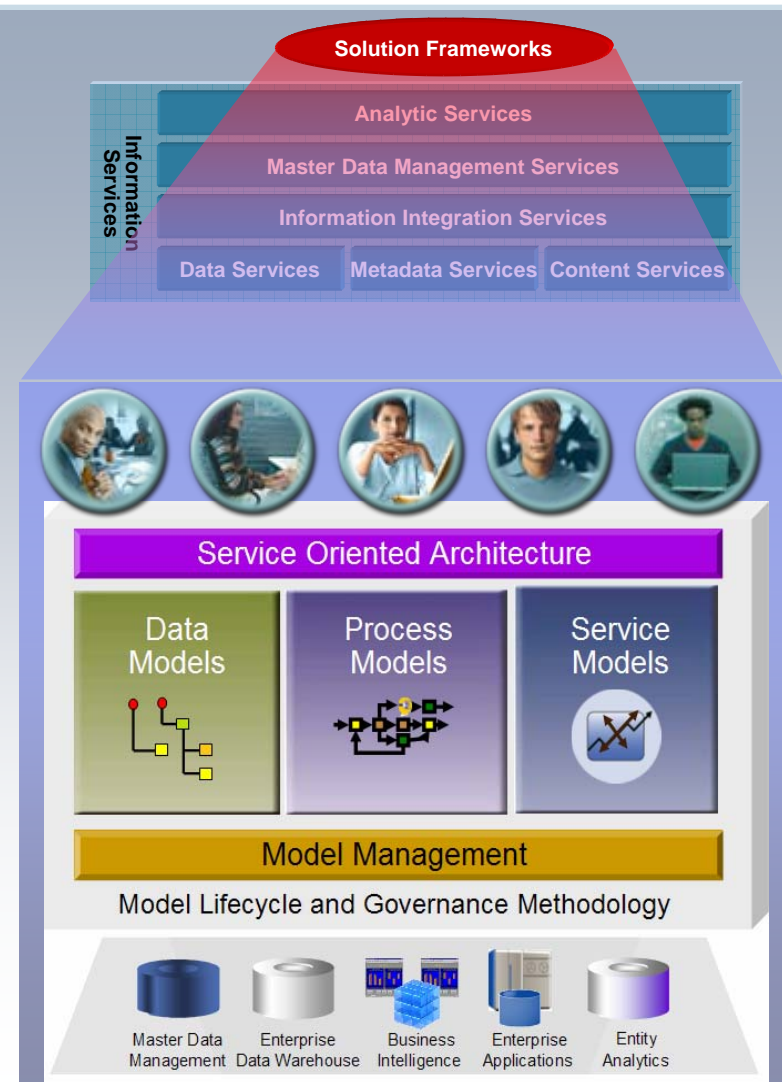
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  - Master Data Services

- **IBM Capabilities to Support SOA Information Architecture**

- **Summary**

SOA on your terms and our expertise

Mapping to the IBM Products

Rational Data Architect

IBM Industry Models

Business Services
Supports enterprise business process and goals through businesses functional service

Development Services
Integrated environment for design and creation of solution assets

Interaction Services
Enables collaboration between people, processes & information

Process Services
Orchestrate and automate business processes

Information Services
Manages diverse data and content in a unified manner

Management Services
Manage and secure services, applications & resources

Enterprise Service Bus

Partner Services
Connect with trading partners

Business App Services
Build on a robust, scaleable, and secure services environment

Access Services
Facilitate interactions with existing information and application assets

Apps & Info Assets

Infrastructure Services
Optimizes throughput, availability and utilization

DB2 Data Warehouse Edition

DB2 Entity Analytics

WebSphere Customer Center

WebSphere Product Center

IBM Information Server

FileNet P8

DB2 Content Manager

DB2

SOA on your terms and our expertise

Summary

- **Separate your information from applications and processes**
  - Decrease costs, redundancies and inconsistencies
  - Increase reuse, data quality, and time-to-value
  - Improve control and governance

- **Implement a portfolio that can be easily integrated**
  - Integrated Information as a Service portfolio
  - Integrated with People and Process capabilities
  - Leverage analytical, operational and transactional information

- **Apply SOA best practices**
  - Establish a reference model
    - SOA Reference Model
    - Industry Models
  - Build a solid foundation to support business optimization

SOA on your terms and our expertise

धन्यवाद
Hindi

多謝
Traditional Chinese

ขอบคุณ
Thai

Спасибо
Russian

Gracias
Spanish

شكراً
Arabic

Thank You

Hvala
Slovenian

Grazie
Italian

Danke
German

Merci
French

多谢
Simplified Chinese

Köszönöm
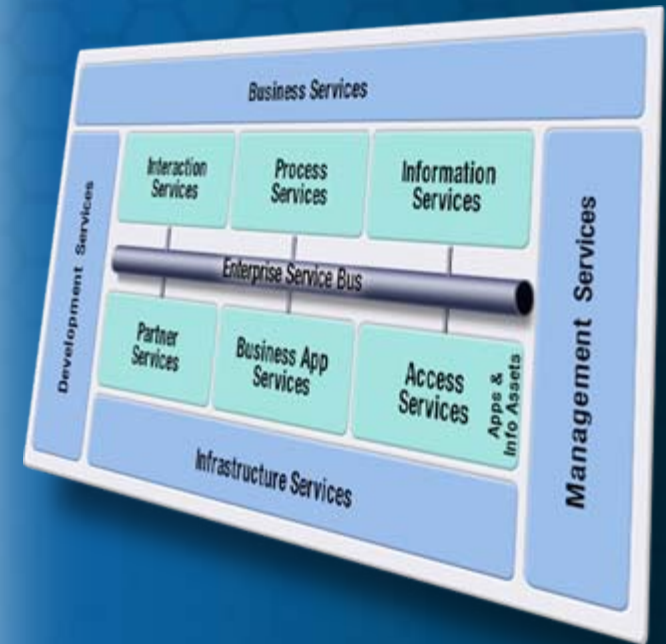Hungarian

감사합니다
Korean

ありがとうございました
Japanese
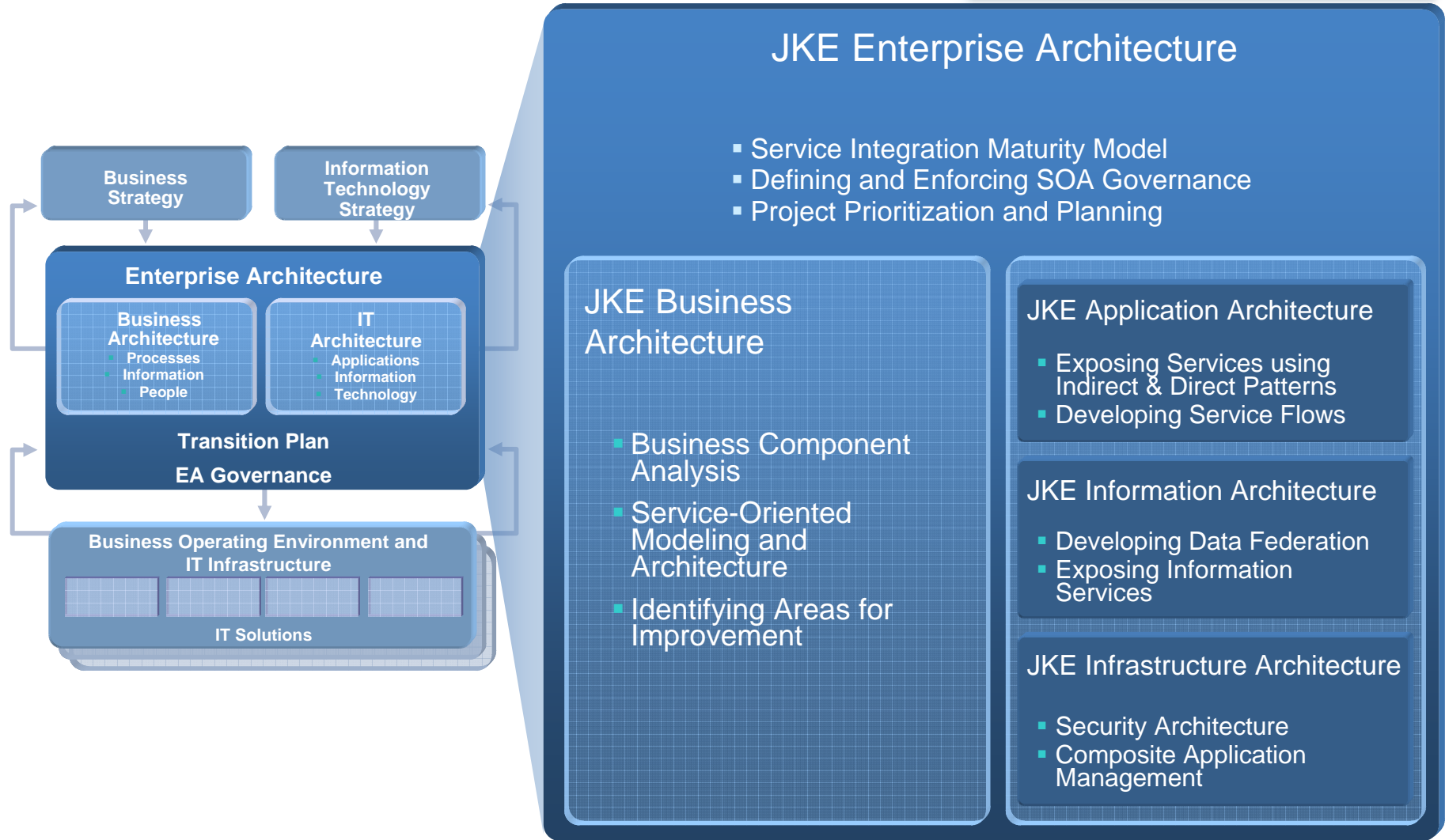
IBM SOA Architect Summit

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SOA Case Study:

A Practical Guide to SOA

Jeroen Reizevoort

SOA Business Process Management
Architect, IBM Software Group

JK Enterprises (JKE) Case Study

JK ENTERPRISES

JKE Enterprise Architecture

- Service Integration Maturity Model
- Defining and Enforcing SOA Governance
- Project Prioritization and Planning

Business Strategy

Information Technology Strategy

Enterprise Architecture

Business Architecture
- Processes
- Information
- People

IT Architecture
- Applications
- Information
- Technology

Transition Plan

EA Governance

Business Operating Environment and IT Infrastructure

IT Solutions

JKE Business Architecture

- Business Component Analysis
- Service-Oriented Modeling and Architecture
- Identifying Areas for Improvement

JKE Application Architecture

- Exposing Services using Indirect & Direct Patterns
- Developing Service Flows

JKE Information Architecture

- Developing Data Federation
- Exposing Information Services

JKE Infrastructure Architecture

- Security Architecture
- Composite Application Management

SOA on your terms and our expertise
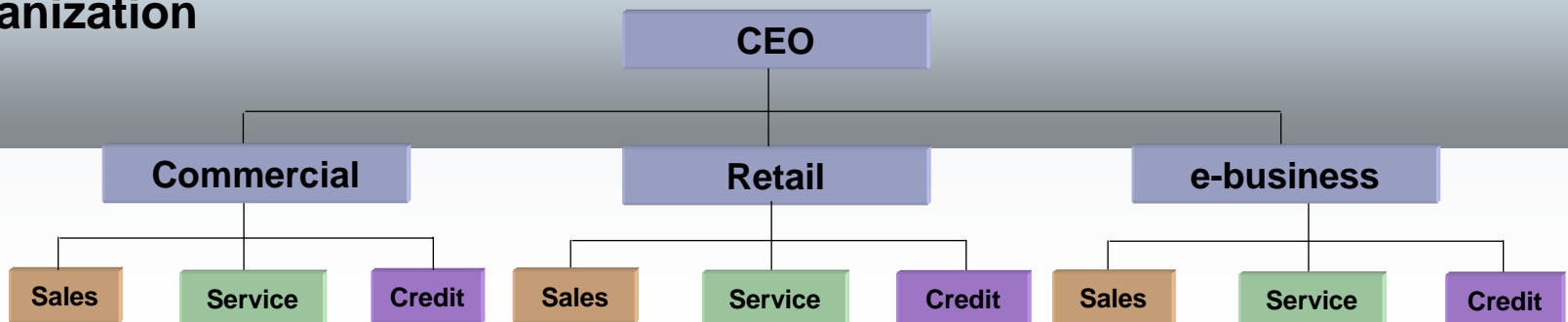
JK Enterprises

Corporate Overview

- JK Enterprises is a premier supplier to retail channel, small business channel, and corporate customers
- Founded in 1935, now a well liked brand image
- High-touch approach to our customers
- Customers of all types can interact with us in a way that suits their individual needs
- Best service at the lowest cost
- Now with customer centers around the world
- Acquired Jensen Incorporated in 2000, which strengthened our corporate customer base
- Corporate customers are true business partners

Corporate Attributes

- 900 Offices, 6 Countries
  - Corporate Headquarters (2)
  - 350 Customer Centers
  - 500 Remote Sales Offices
  - 6 Call Centers
  - 8 Data Centers
- 11,000 employees
  - 1500 Corporate
  - 1000 Sales and Sales Support
  - ~15 per Customer Center
  - 150 per Call Center
  - 2000 in IT

Line of Business Organization

```
                    CEO
        ┌────────────┼────────────┐
   Commercial      Retail      e-business
   ┌──┼──┐        ┌──┼──┐        ┌──┼──┐
Sales Service Credit Sales Service Credit Sales Service Credit
```

SOA on your terms and our expertise
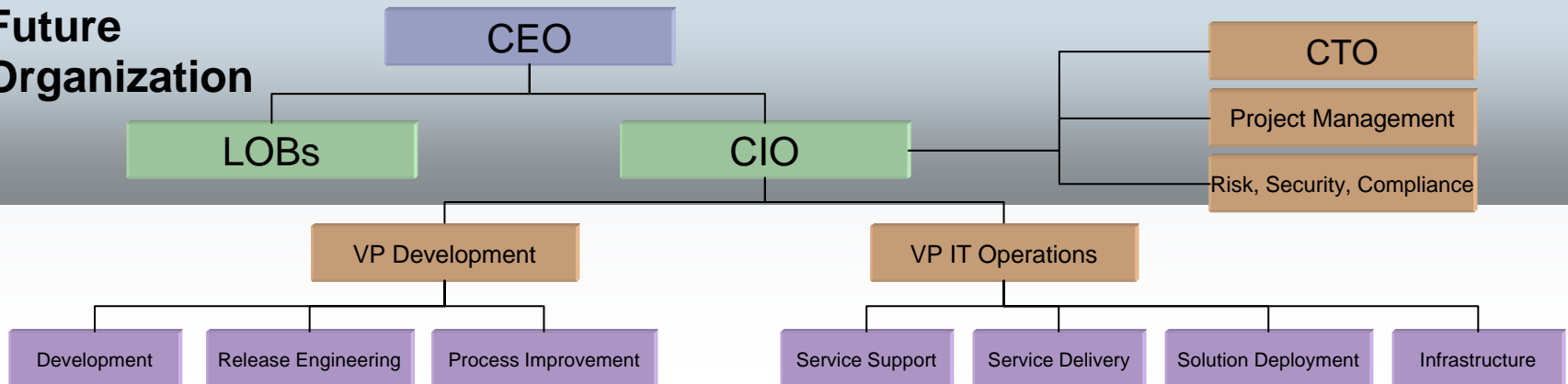
JK Enterprises

JK ENTERPRISES

Envisioned Future State

- The most profitable high-touch company in the industry
- Aggressive growth with minimal risk
- Optimized responsive corporate organization
- A company that leverages it's strategic investments
  - Best Web Site in the industry
  - Expert Sales force
  - Global CRM
  - Sales Focused Call Centers

Key Initiatives

- Grow organically and leverage our size
  - 100,000 new customers this year
  - Increase cross-sell ratio to over 2.0 in 24 months
- Multi channel integration
  - Access any service from any channel with consistent experience
  - Then move customers toward lower cost channels
- Business transformation and optimization
  - Optimize then grow - organization and processes
  - Remove redundancies - centralized shared services
  - Shift our focus to strategic functions - outsource high cost tactical business functions, invest in the rest
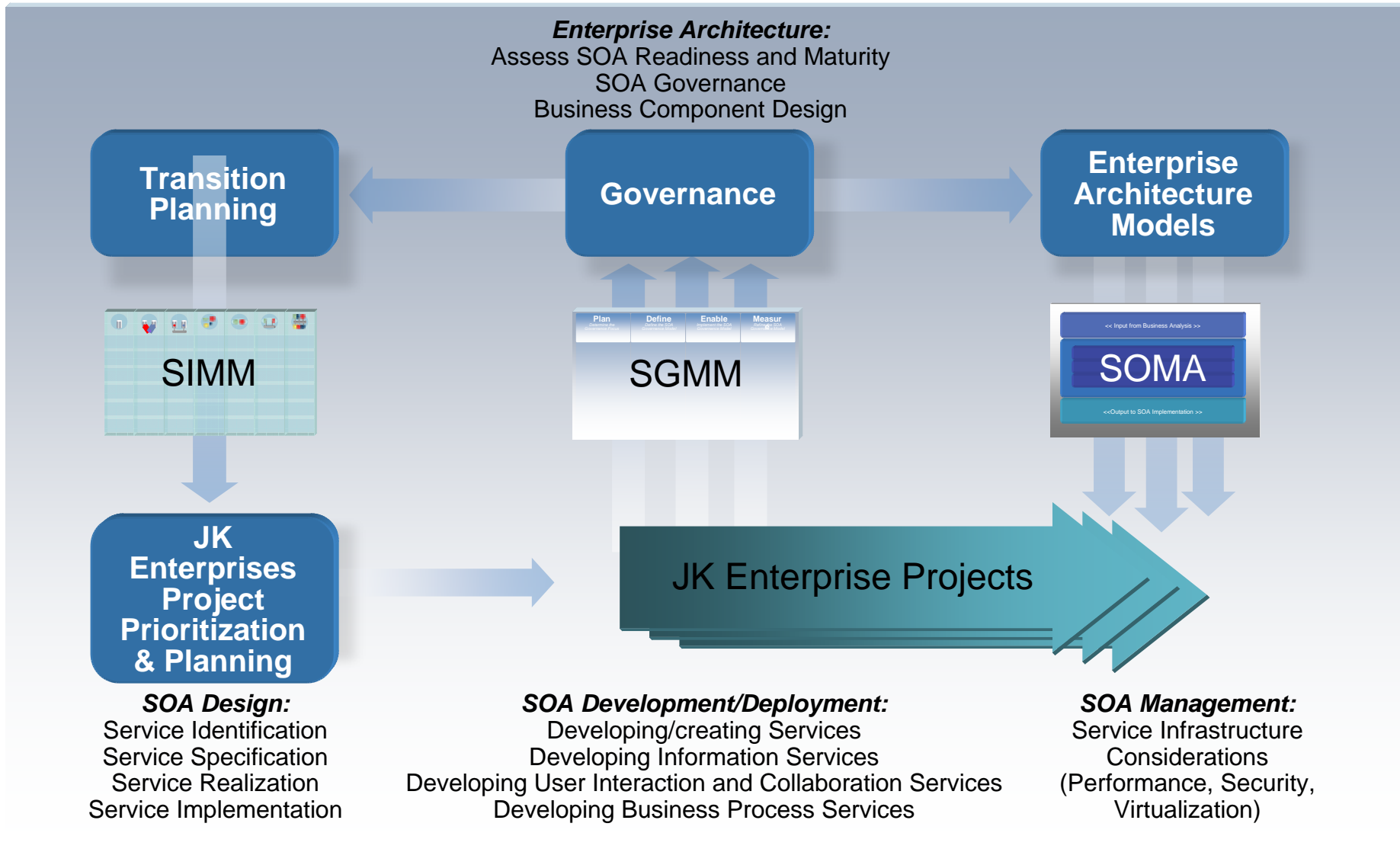- Control access to information to ensure appropriate security
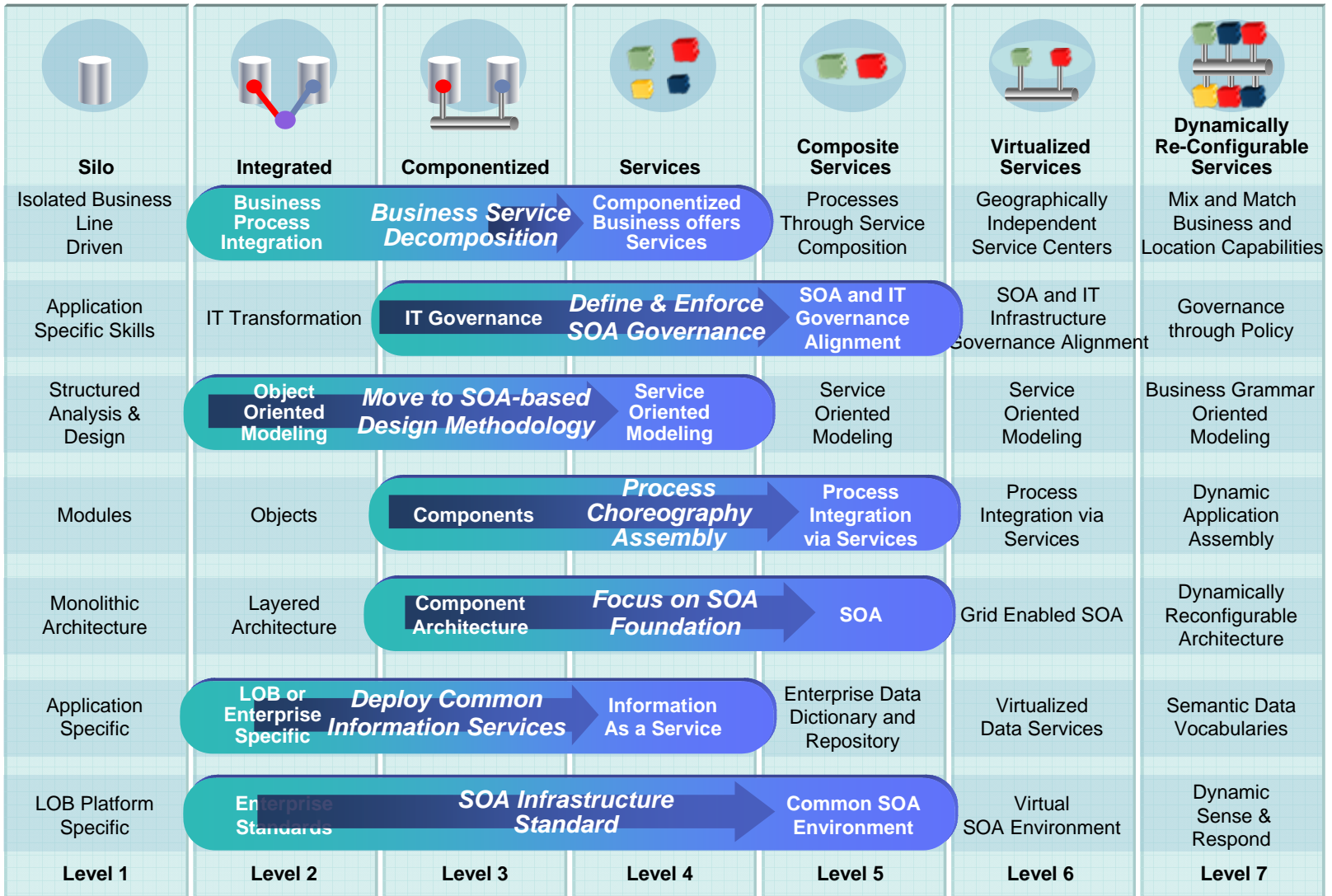
Future Organization

Organization chart:
- CEO
  - LOBs
  - CIO
    - VP Development
      - Development
      - Release Engineering
      - Process Improvement
    - VP IT Operations
      - Service Support
      - Service Delivery
      - Solution Deployment
      - Infrastructure
    - CTO
    - Project Management
    - Risk, Security, Compliance

SOA on your terms and our expertise

Agenda

- **Enterprise Architecture**

- **SOA Business Architecture**

- **SOA IT Architecture**
  - *Application Architecture*
  - *Information Architecture*
  - *Infrastructure Architecture*
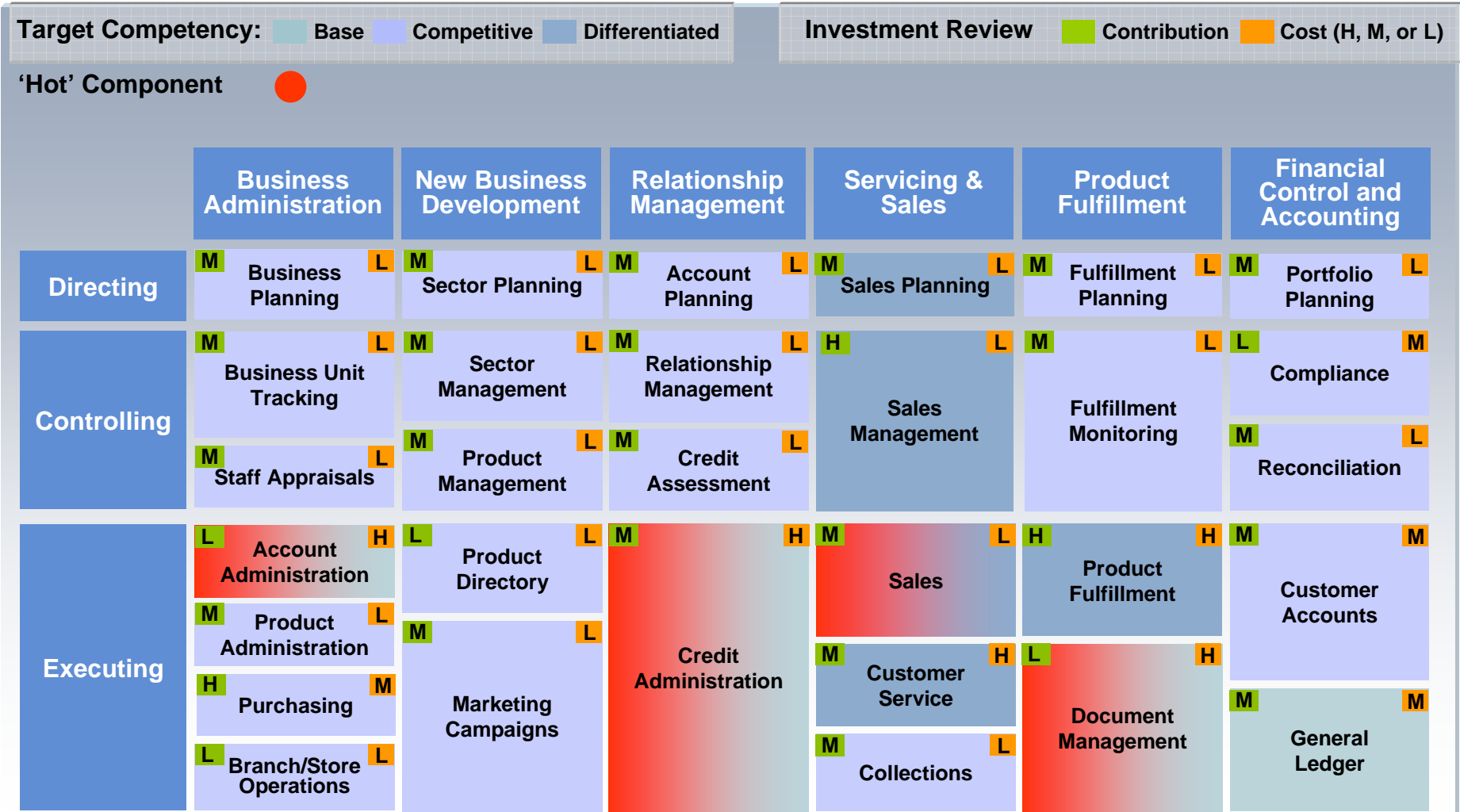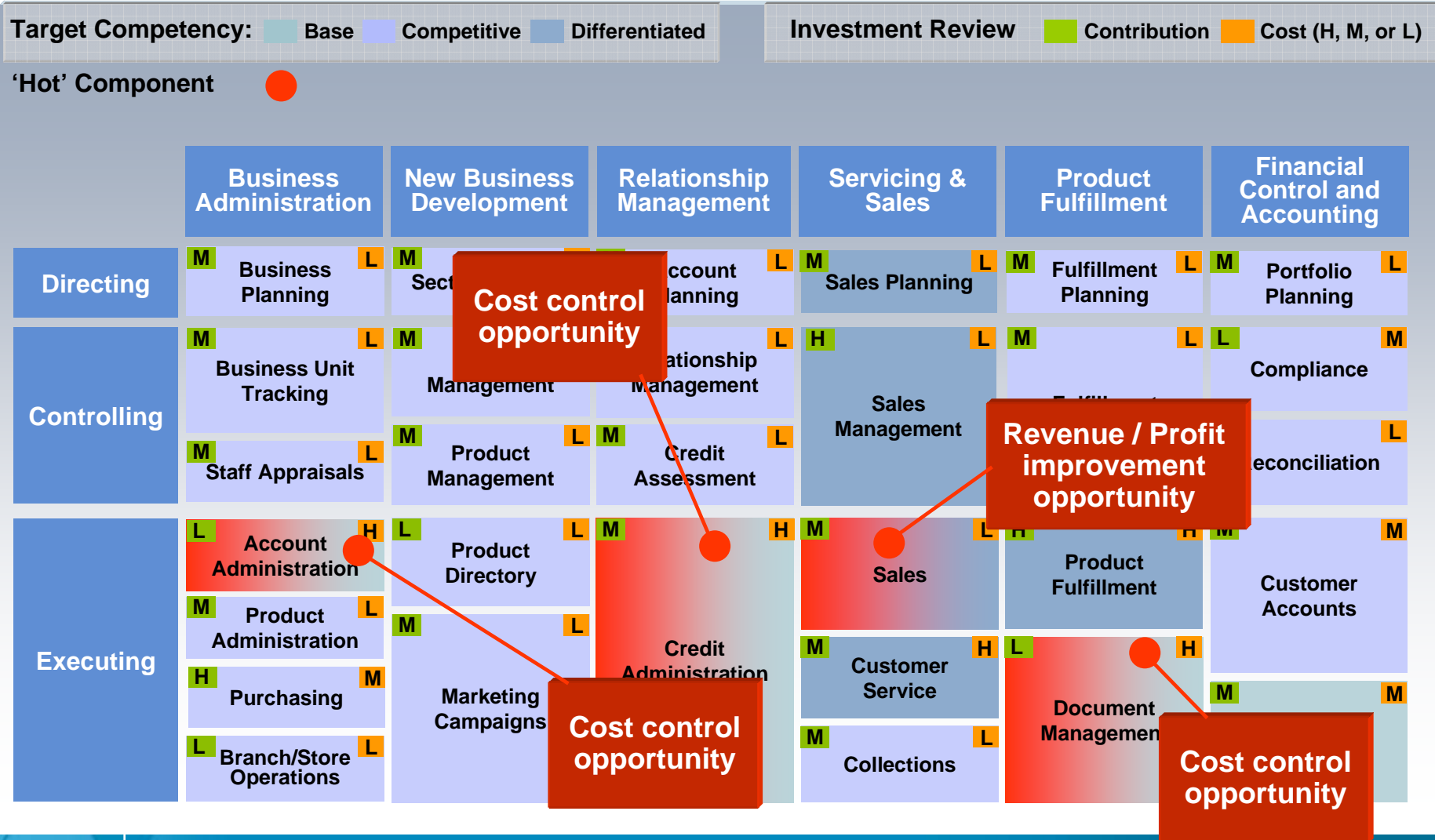
- **Getting Started**

SOA on your terms and our expertise

SOA and Enterprise Architecture: Best Practices

Enterprise Architecture:
Assess SOA Readiness and Maturity
SOA Governance
Business Component Design

Transition Planning

Governance

Enterprise Architecture Models

SIMM

Plan	Define	Enable	Measur

SGMM

<< Input from Business Analysis >>

SOMA

<<Output to SOA Implementation >>

JK Enterprises Project Prioritization & Planning

JK Enterprise Projects

SOA Design:
Service Identification
Service Specification
Service Realization
Service Implementation

SOA Development/Deployment:
Developing/creating Services
Developing Information Services
Developing User Interaction and Collaboration Services
Developing Business Process Services

SOA Management:
Service Infrastructure
Considerations
(Performance, Security, Virtualization)

SOA on your terms and our expertise

IBM

Service Integration Maturity Model (SIMM) – Next Steps

	Silo	Integrated	Componentized	Services	Composite Services	Virtualized Services	Dynamically Re-Configurable Services
Business	Isolated Business Line Driven	Business Process Integration	*Business Service Decomposition*	Componentized Business offers Services	Processes Through Service Composition	Geographically Independent Service Centers	Mix and Match Business and Location Capabilities
Organization	Application Specific Skills	IT Transformation	IT Governance	*Define & Enforce SOA Governance*	SOA and IT Governance Alignment	SOA and IT Infrastructure Governance Alignment	Governance through Policy
Methods	Structured Analysis & Design	Object Oriented Modeling	*Move to SOA-based Design Methodology*	Service Oriented Modeling	Service Oriented Modeling	Service Oriented Modeling	Business Grammar Oriented Modeling
Applications	Modules	Objects	Components	*Process Choreography Assembly*	Process Integration via Services	Process Integration via Services	Dynamic Application Assembly
Architecture	Monolithic Architecture	Layered Architecture	Component Architecture	*Focus on SOA Foundation*	SOA	Grid Enabled SOA	Dynamically Reconfigurable Architecture
Information	Application Specific	LOB or Enterprise Specific	*Deploy Common Information Services*	Information As a Service	Enterprise Data Dictionary and Repository	Virtualized Data Services	Semantic Data Vocabularies
Infrastructure	LOB Platform Specific	Enterprise Standards	*SOA Infrastructure Standard*		Common SOA Environment	Virtual SOA Environment	Dynamic Sense & Respond
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7

SOA on your terms and our expertise

SOA Governance
Defining SOA Governance at JK Enterprises

Tailor SGMM

Execute the "JKE SOA Governance Project"

Create Project Proposal

Identify SOA Business and IT Principles

Determine Existing Governance Structure

Define CoE Structure

Create the SOA Governance Framework

Roles

Processes

Implement Tools and Infrastructure

Policies

Metrics
▲33%
▼10%

Quality Gates

Refine Operational Environment

SOA on your terms and our expertise

SOA Governance
Enforcing Governance at JK Enterprises

Define Goverance Policy

Rational Method Composer

Review Service Lifecycle

WebSphere Business Modeler

Business Requirements Traceability

Rational Requisite Pro

Service Design and Development

Implement Policies

Service Reuse

WebSphere Service Registry and Repository

Architectural Compliance

Governance Policy and Best Practices

Access Method

WebSphere Integration Developer

Enforce Policies

Service Reuse

WebSphere Service Registry and Repository

Architectural Compliance

SOA Design Review

Service Management

Tivoli Composite Application Manager for SOA
Tivoli Change and Configuration Mgmt DB

SOA on your terms and our expertise

Agenda

- Enterprise Architecture

- **SOA Business Architecture**

- SOA IT Architecture
  - *Application Architecture*
  - *Information Architecture*
  - *Infrastructure Architecture*

- Getting Started

SOA on your terms and our expertise

Business Analysis
Identifying Business Components

Target Competency: Base | Competitive | Differentiated

Investment Review | Contribution | Cost (H, M, or L)

'Hot' Component ●

	Business Administration	New Business Development	Relationship Management	Servicing & Sales	Product Fulfillment	Financial Control and Accounting
Directing	M Business Planning L	M Sector Planning L	M Account Planning L	M Sales Planning L	M Fulfillment Planning L	M Portfolio Planning L
Controlling	M Business Unit Tracking L	M Sector Management L	M Relationship Management L	H Sales Management L	M Fulfillment Monitoring L	L Compliance M
	M Staff Appraisals L	M Product Management L	M Credit Assessment L			M Reconciliation L
Executing	L Account Administration H	L Product Directory L	M Credit Administration H	M Sales L	H Product Fulfillment H	M Customer Accounts M
	M Product Administration L	M Marketing Campaigns L		M Customer Service H	L Document Management H	
	H Purchasing M			M Collections L		M General Ledger M
	L Branch/Store Operations L					

Business Analysis
Identifying Business Components

Target Competency: Base | Competitive | Differentiated

Investment Review Contribution | Cost (H, M, or L)

'Hot' Component ●

	Business Administration	New Business Development	Relationship Management	Servicing & Sales	Product Fulfillment	Financial Control and Accounting
Directing	M Business Planning L	M Sect...	...ccount ...lanning L	M Sales Planning L	M Fulfillment Planning L	M Portfolio Planning L
Controlling	M Business Unit Tracking L	M Management	...lationship ...anagement L	H Sales Management L	M ...Fulfillment... L	L Compliance M
	M Staff Appraisals L	M Product Management L	M Credit Assessment			L ...econciliation
Executing	L Account Administration H	L Product Directory L	M Credit Administration H	M Sales L	H Product Fulfillment H	M Customer Accounts M
	M Product Administration L	M		M Customer Service H	L Document Management H	
	H Purchasing M			M Collections L		M M
	L Branch/Store Operations L	Marketing Campaigns				

Cost control opportunity

Revenue / Profit improvement opportunity

Cost control opportunity

Cost control opportunity

Business Analysis
Identifying Improvement Areas at JK Enterprises

Target Competency: Base | Competitive | Differentiated

Investment Review — Contribution | Cost (H, M, or L)

'Hot' Component ●

- **Negotiate volume discounts based on combined volume of all departments**
  - Decrease negotiated cost of automated credit report by 20%
  - Automate 75% of credit report retrievals
- **Implement consistent business rules to improve risk management**
  - Decrease number of credit report retrievals by 10%

- **Develop optimized cross-channel account application process**
  - Increase cross-sell ratio to 2.0
  - Add 500 new corporate customers
  - Improve STP of applications by 35%
  - Reduce call center calls from sales force and offices by 30%

- **Automate manual tasks for creating and administering accounts**
  - Decrease cost of account activation by 50%
  - Decrease time to open account by 50%

- **Decrease paper processes by automation of manual tasks**
  - Increase electronic applications by 25%

Servicing & Sales | Product Fulfillment | Financial Control and Accounting

Controlling

Tracking | Management | Management

Staff Appraisals | Product Management | Credit Assessment

Account Administration | Product Directory | Sales | Product Fulfillment | Customer Accounts

Product Administration | Credit Administration | Customer

Defining Solution Scope
Business Context Diagram

Customer

CSR (Store)

Account Manager (HQ)

Account Open Request

Account Open Request

New Account Request

Account Requests

eForms

Decision

Portal

Account On-Boarding

Real-time Collaboration re: Account History

Forms

Account History

Credit Scoring Partner

Account Owner (HQ)

SOA on your terms and our expertise
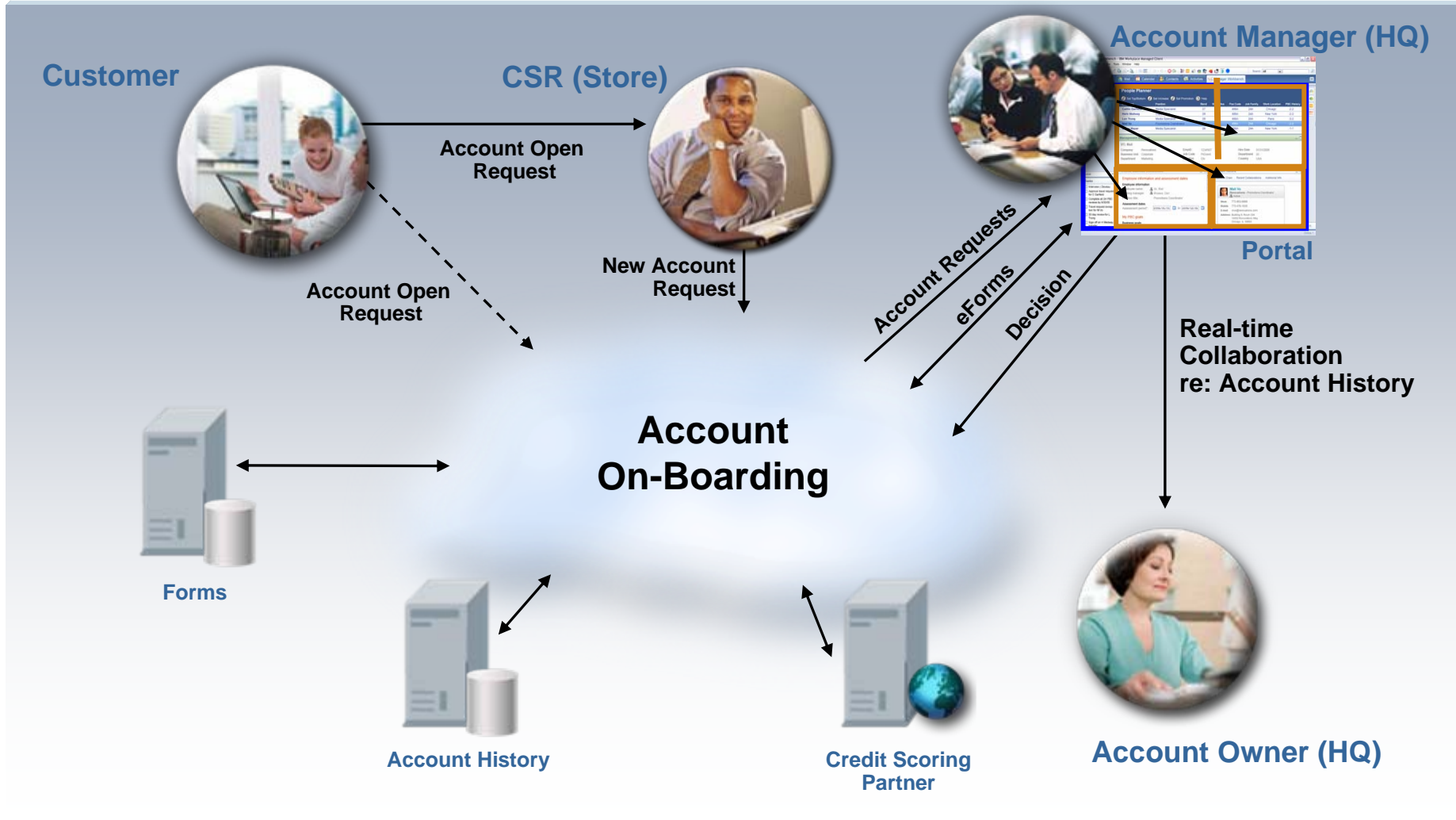
Service Design via SOMA
Service Identification

JK Enterprises Process Decomposition
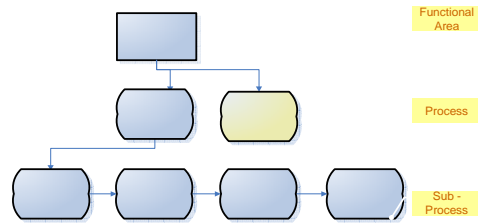
Domain Decomposition

- Techniques:
  - Process Modeling Tools
  - Design of KPIs/Metrics

- Services Identified
  - Open Account
  - Account Activation
  - Account Verification

Goal Service Modeling

- Techniques
  - Requirements Planning Tools
  - Design of KPIs/Metrics

- Services Identified
  - Determine Applicant Eligibility
  - Address Verification
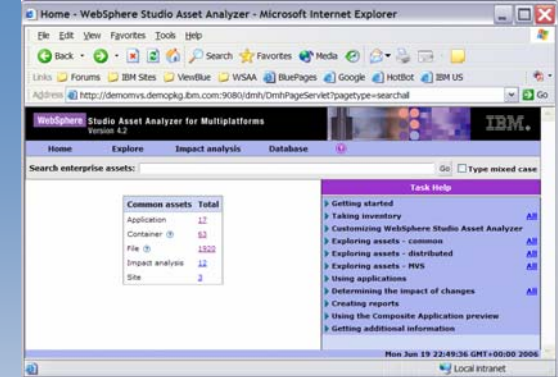
Existing Asset Analysis

- Techniques
  - Asset Analysis Tools
  - Interviews/Documentation

- Services Identified
  - Account Inquiry (CICS 2.2)
  - AR Setup (CICS 2.2)
  - Account Setup (CICS 3.1)
  - Create Account (SAP)

SOA on your terms and our expertise

Service Specification
Applying The Service Litmus Test

- **Candidate Service Name: AR Setup**

- **Business Alignment:**
  - Is the service business relevant? **YES**
  - Is funding available for service development and management? **YES (Governance Board)**
  - Is the service sharable? **YES**

- **Composability**
  - Is the service consistent with NFRs at the composite level? **YES - As per current requirements**
  - Is service stateless? **YES**
  - Is the service self-contained? (Are there dependencies?) **YES – No Dependencies**
  - Is the service technology neutral? **Implementation is CICS 2.x - technology neutral**

- **Externalized Service Description**
  - Is there an externalized service description e.g. WSDL? **NO - done as part of service creation**
  - Can the service be discovered and bound via the service description? **Following service creation**
  - Does the description contain meta-data about itself? **Following service creation**

- **Redundancy Elimination**
  - Can the service be applied to all processes where its function is required? **YES**

SOA on your terms and our expertise

SOMA Service Specification
Defining the "Account Receivable (AR) Setup" Service
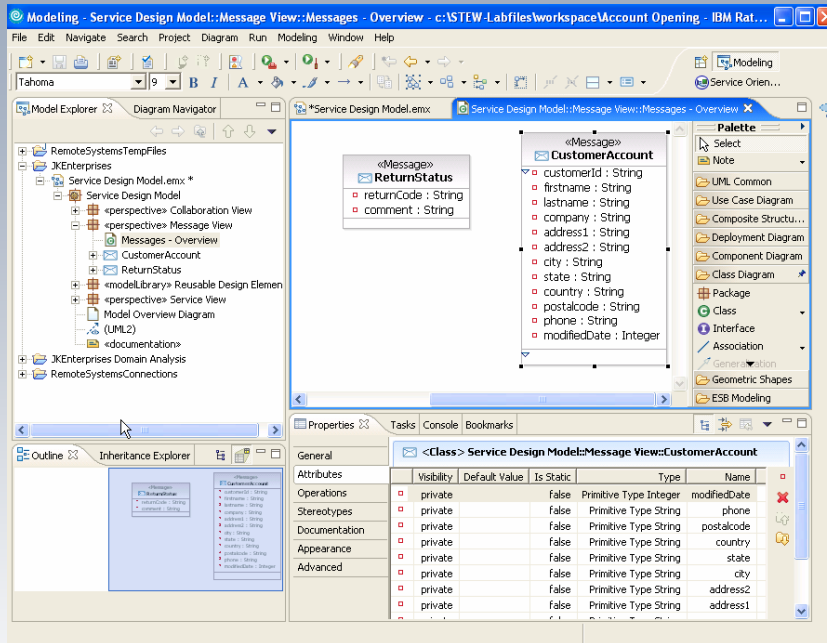
Building the Service Message Model
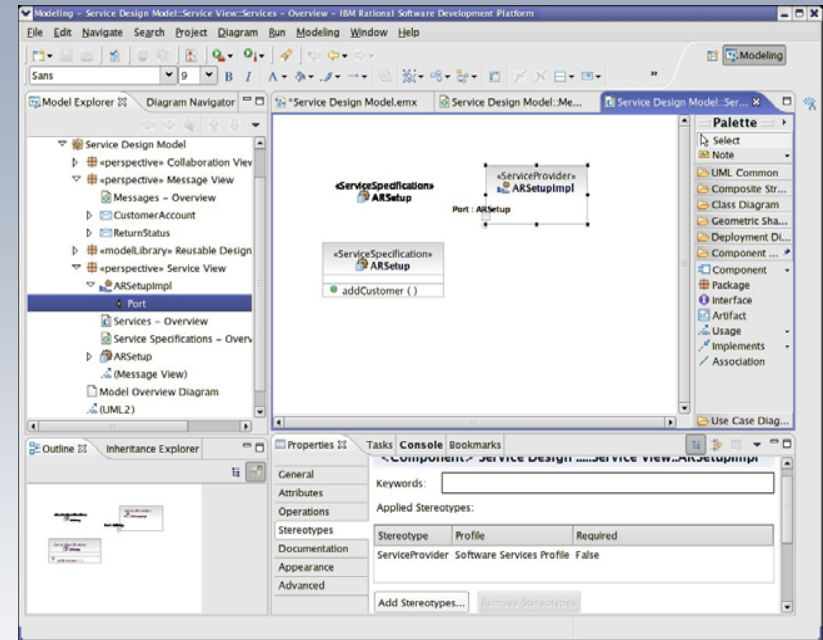
Designing the Service Components

Rational Software Architect

SOA on your terms and our expertise

Service Specification
Service Model for "Account Activation"
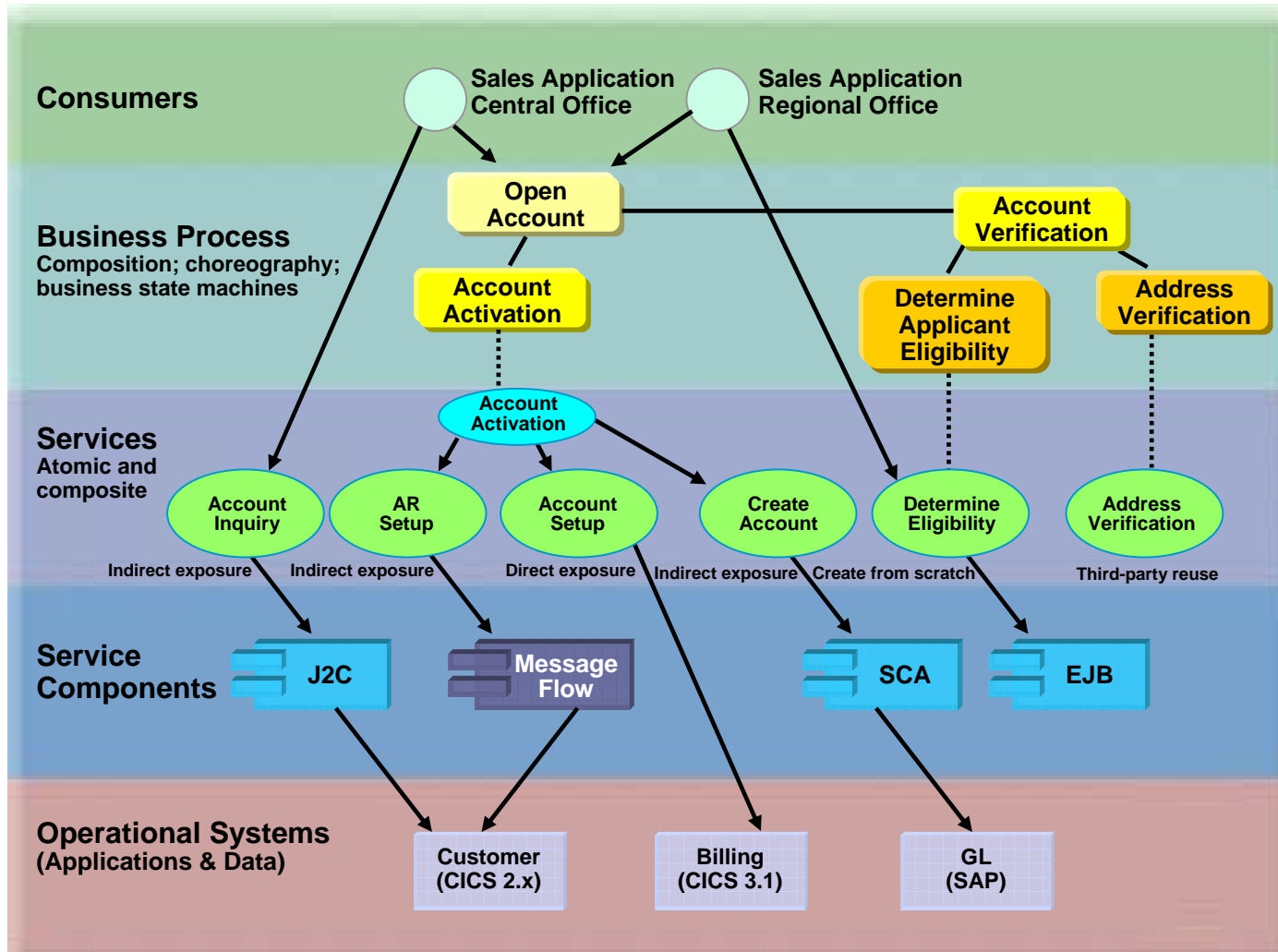
SOMA Service Realization
Designing the implementation for the "AR Setup" Service

- **Architectural Considerations**
  - Implementation is CICS 2.2
  - WebSphere MQ on mainframe
  - Security requirements (RACF)
  - Alternatives
    - ESB Integration
    - Custom EJB Development
    - J2C Adapter
    - Application-level messaging

- **Architectural Decisions**
  - ESB Integration
    - Security requirements
    - Availability requirements
    - Message augmentation/transformation
  - Support for both synchronous and asynchronous interactions
  - Compensatory service need to be designed and deployed
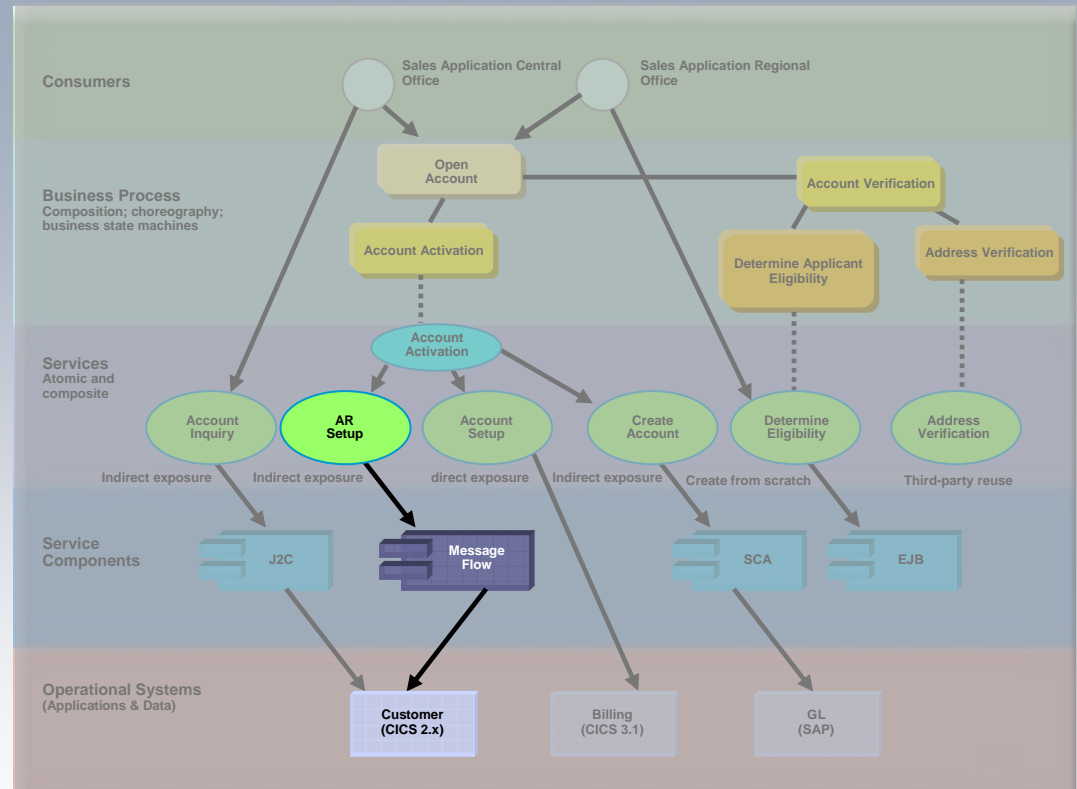
SOA on your terms and our expertise

Agenda

- Enterprise Architecture

- SOA Business Architecture

- **SOA IT Architecture**
  - Application Architecture
  - Information Architecture
  - Infrastructure Architecture

- Getting Started

SOA on your terms and our expertise

The End-to-end Account Opening Solution

People

Information

Process

Internet/ Intranet Portal

Account History Service
Customer ▶ **Account History** ▶ Customer Orders

Account Opening Service
Customer Application ▶ **Account Status** ▶ Customer Application

Account Info Service
Customer ▶ **Account Info** ▶ Customer Account

Account Open Process
Receive Request → **Credit Policy** → **Check Application** → **Create Account** → **Confirm Account**

SOA on your terms and our expertise

Developing the Process Model
Completing the "Account Open" Process Model

Design and Simulation of the "Account Open" Business Process Model

Collaborative Development of the "Account Open" Business Process Model

WebSphere Business Modeler

WebSphere Business Modeler Publishing Server

SOA on your terms and our expertise

Application Architecture
"Account Setup" Service (Billing System)
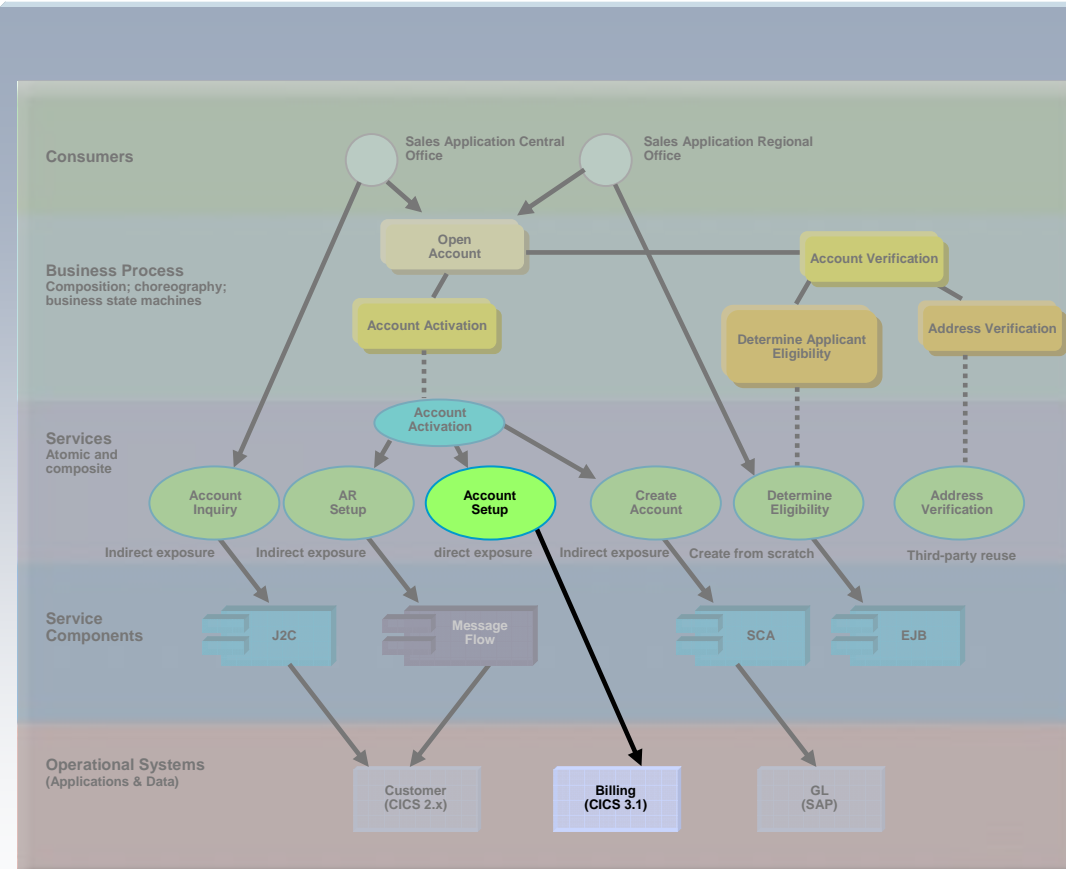
Direct Exposure
CICS 3.1

Service Creation
With CICS TX 3.1

Rational Developer for System z

SOA on your terms and our expertise

Application Architecture
"Account Inquiry" Service (Customer Management)
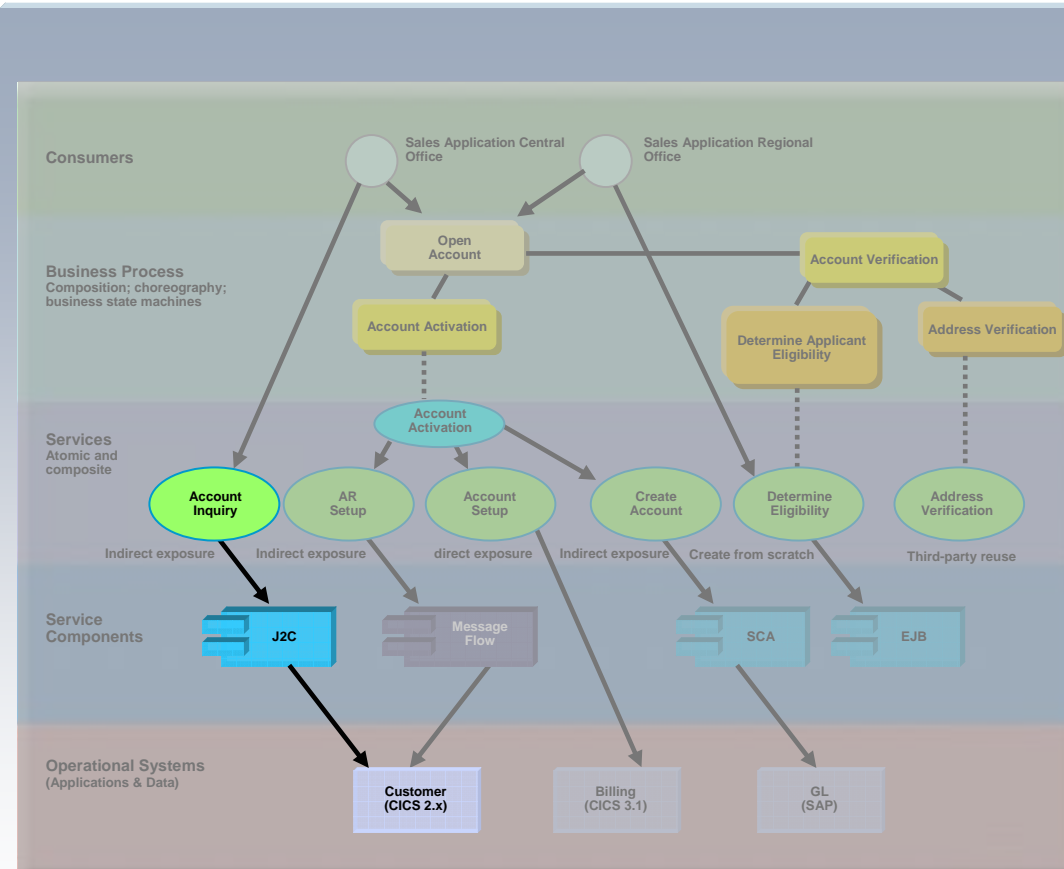
Indirect Exposure
J2C Adapter to CICS

Adapter Development

WebSphere Integration Developer

SOA on your terms and our expertise

Application Architecture
"Create Account" Service (SAP)

Indirect Exposure to SAP

Developing The SAP Adapter Instance

Setting SAP Adapter Properties

Selecting BAPIs For Adapter Operations

WebSphere Adapter for SAP Software

Service Reuse
Integration with the Service Registry
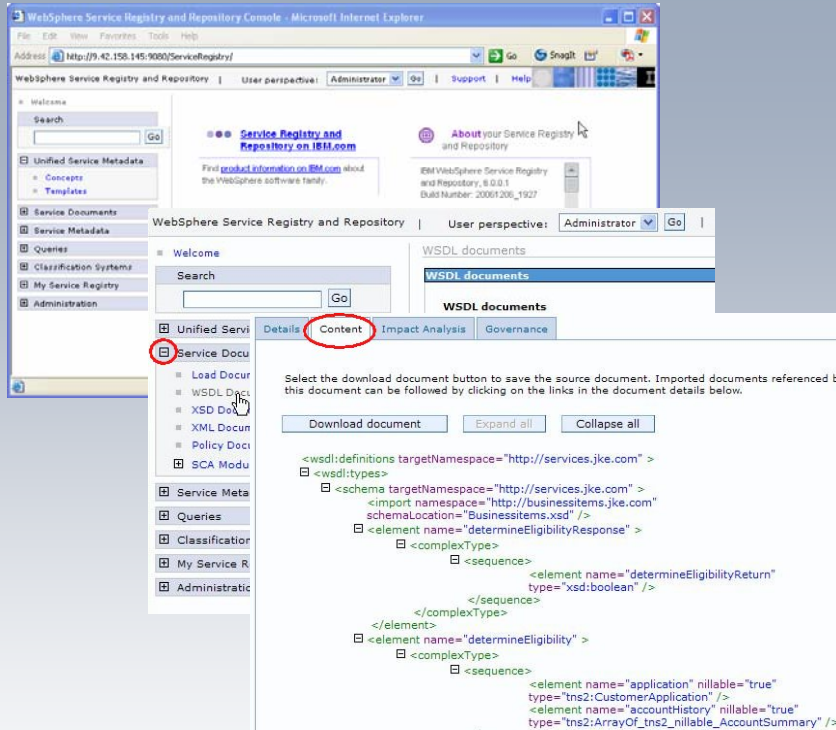
Browsing for Services and Publishing Services with the Web Interface
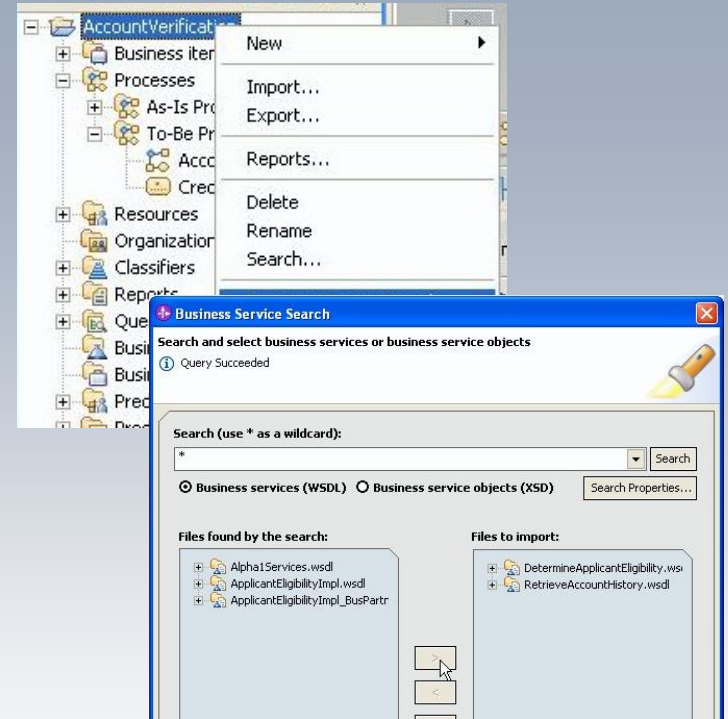
Browsing for Services with the Eclipse Interface

WebSphere Service Registry and Repository

SOA on your terms and our expertise

Application Architecture
Developing Basic and Composite Service Flows
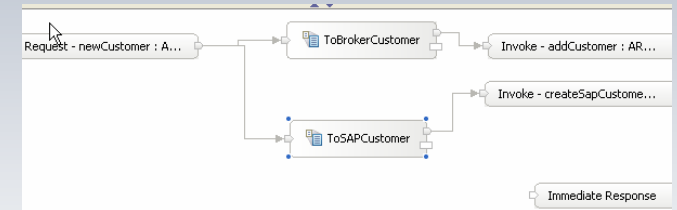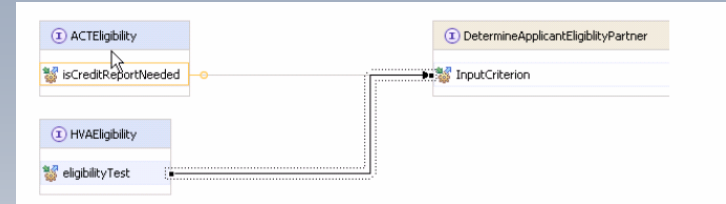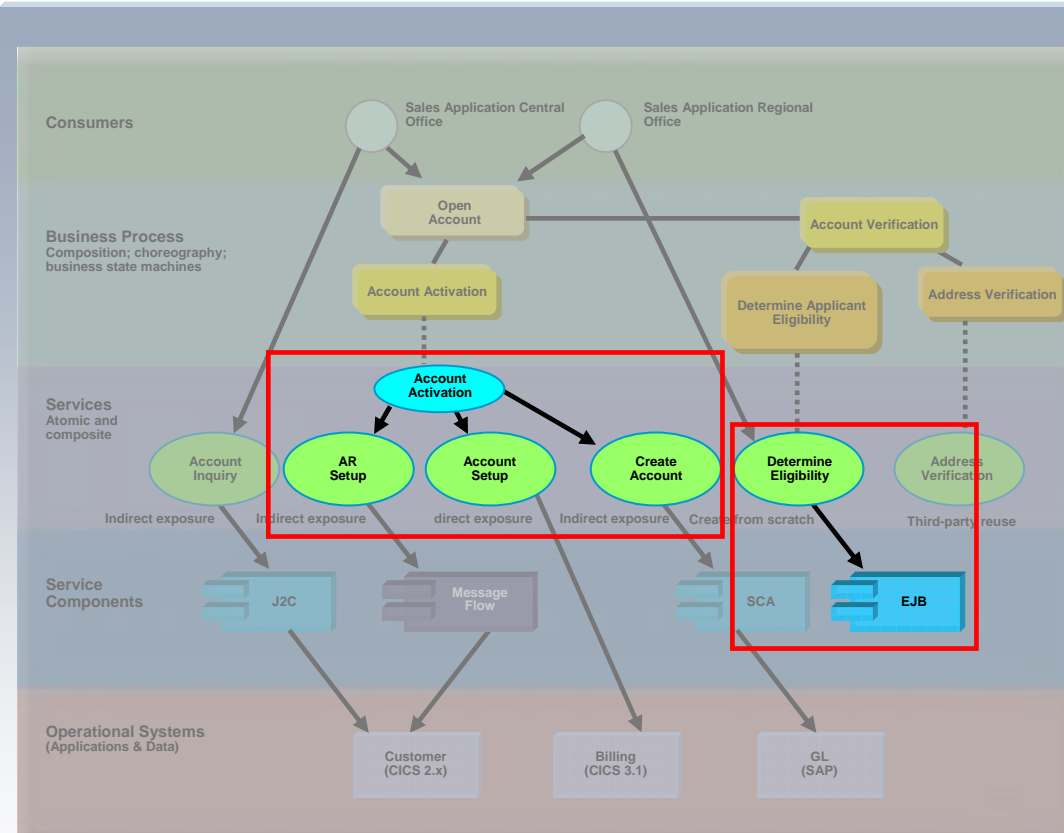
Develop Service Flows for "Determine Eligibility" and "Account Activation" Services

WebSphere Integration Developer

SOA on your terms and our expertise

Information Architecture
Data Federation, XML Retrieval and Data Cleansing Services

Operational DB ACCOUNT

Table: INFORMIX ACCOUNT

id: Informix
DW: ibmpassword

INFORMIX

DB2 Database CUSTACC

Table: JKE CUACCOUNT

Instance: DB2
id: administrator
pw: ibmpassword
INFORMIX Server
Name:ol_plstew

DB2 Federation Server

Building Federation Services

Building Native XML Retrieval Services

Building Account Application Data Cleansing Service

WebSphere Federation Server

DB2 v9 Viper

WebSphere Quality Stage

SOA on your terms and our expertise

Information Architecture
Exposing Information Services
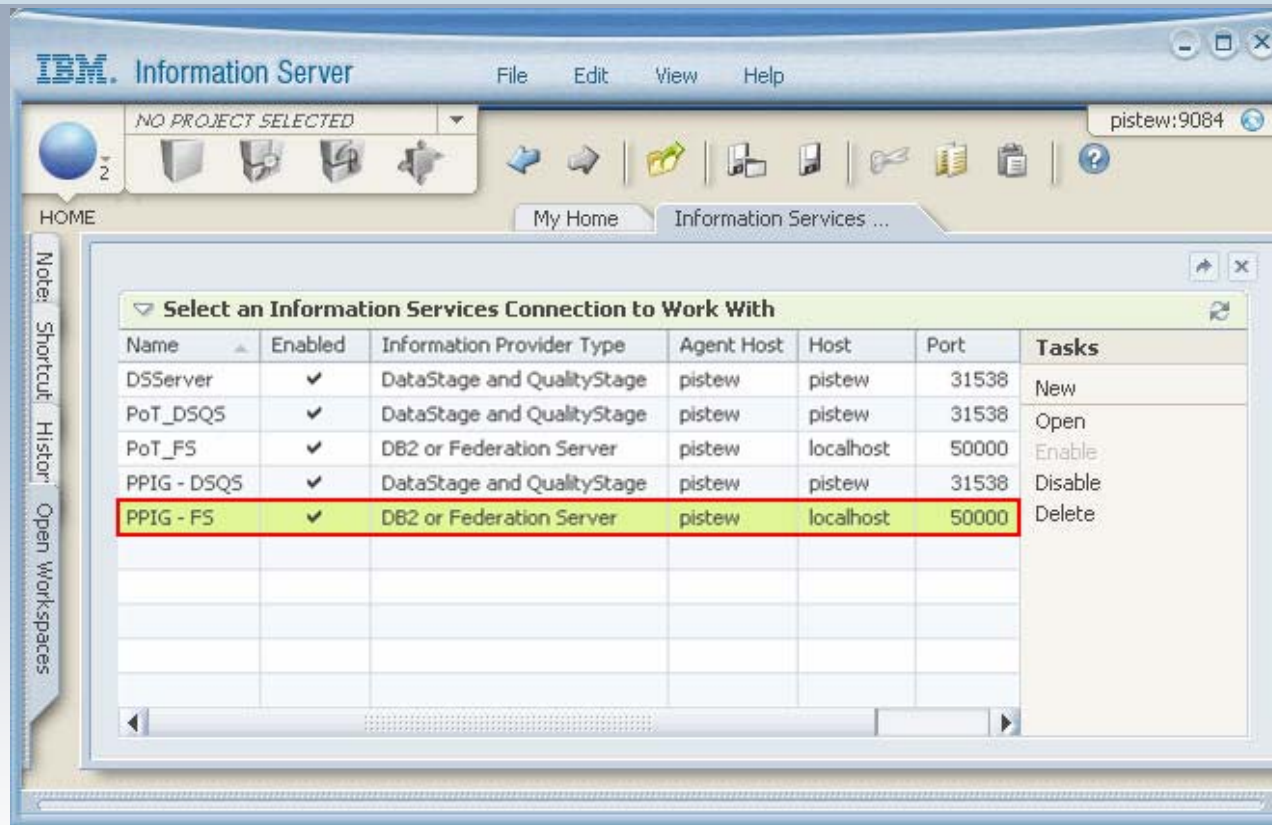
Registering Information Services

IBM Information Server

SOA on your terms and our expertise

Process Design and Deployment
Assembly and Deploy
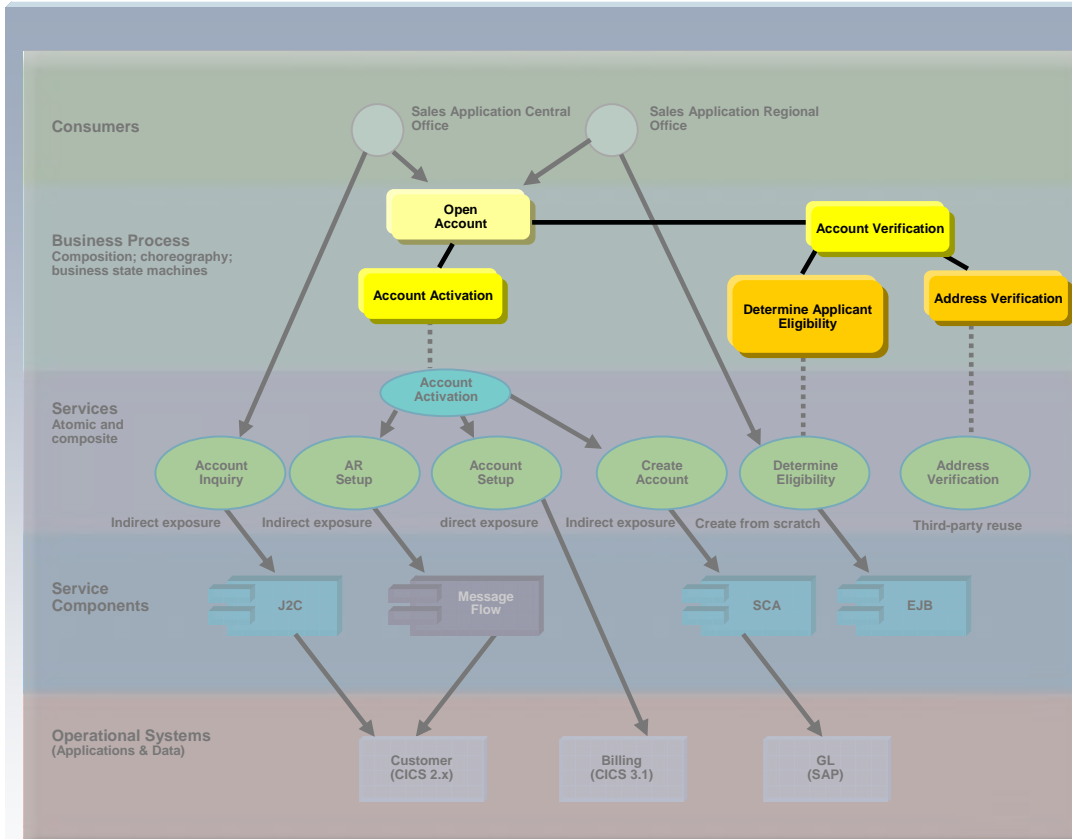
WS-BPEL Process Implementation
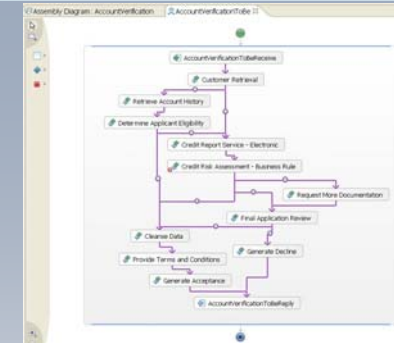
"Account Open"
WS-BPEL Implementation
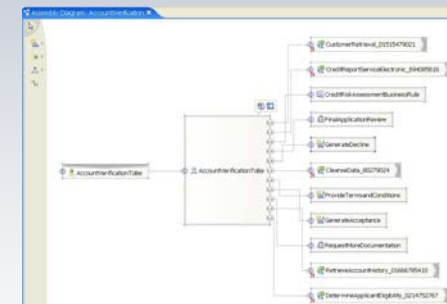
Wiring the Components for the
"Account Open" Process

WebSphere Integration Developer

Process Monitoring and Management
Building BPM Monitoring Components and Dashboards
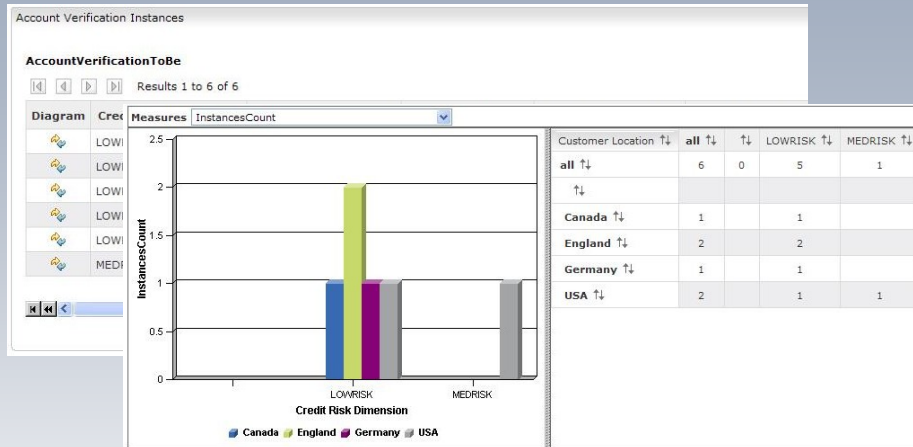
Monitoring Credit Risk

*Building Components to
Monitor Account Opening Duration*

WebSphere Business Monitor

WebSphere Dashboard Framework

SOA on your terms and our expertise

Building User Interaction Services
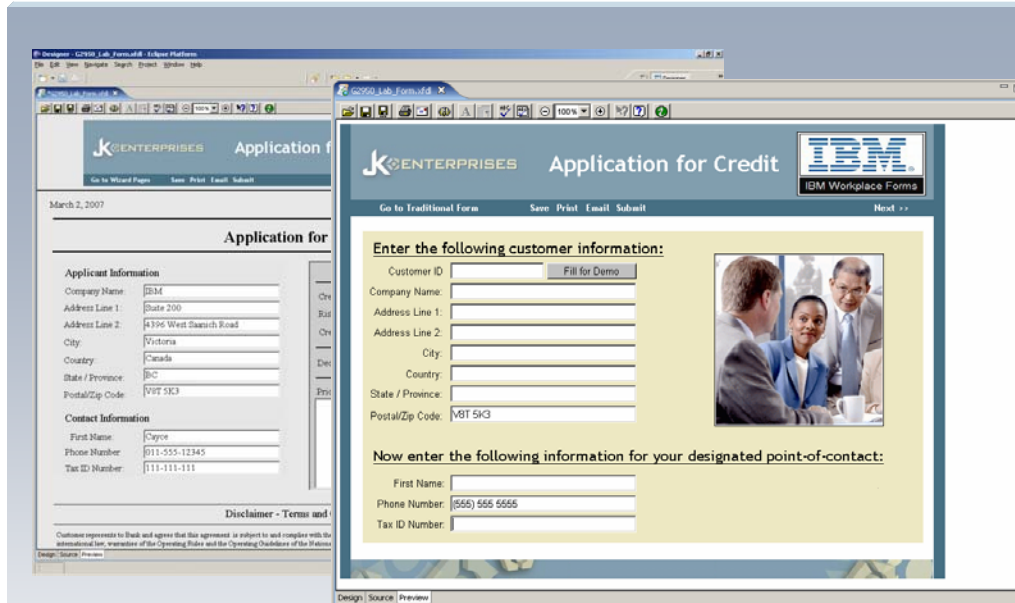
Developing and Deploying the "New Account" Application

Building Role-Specific Portlets and Dashboards

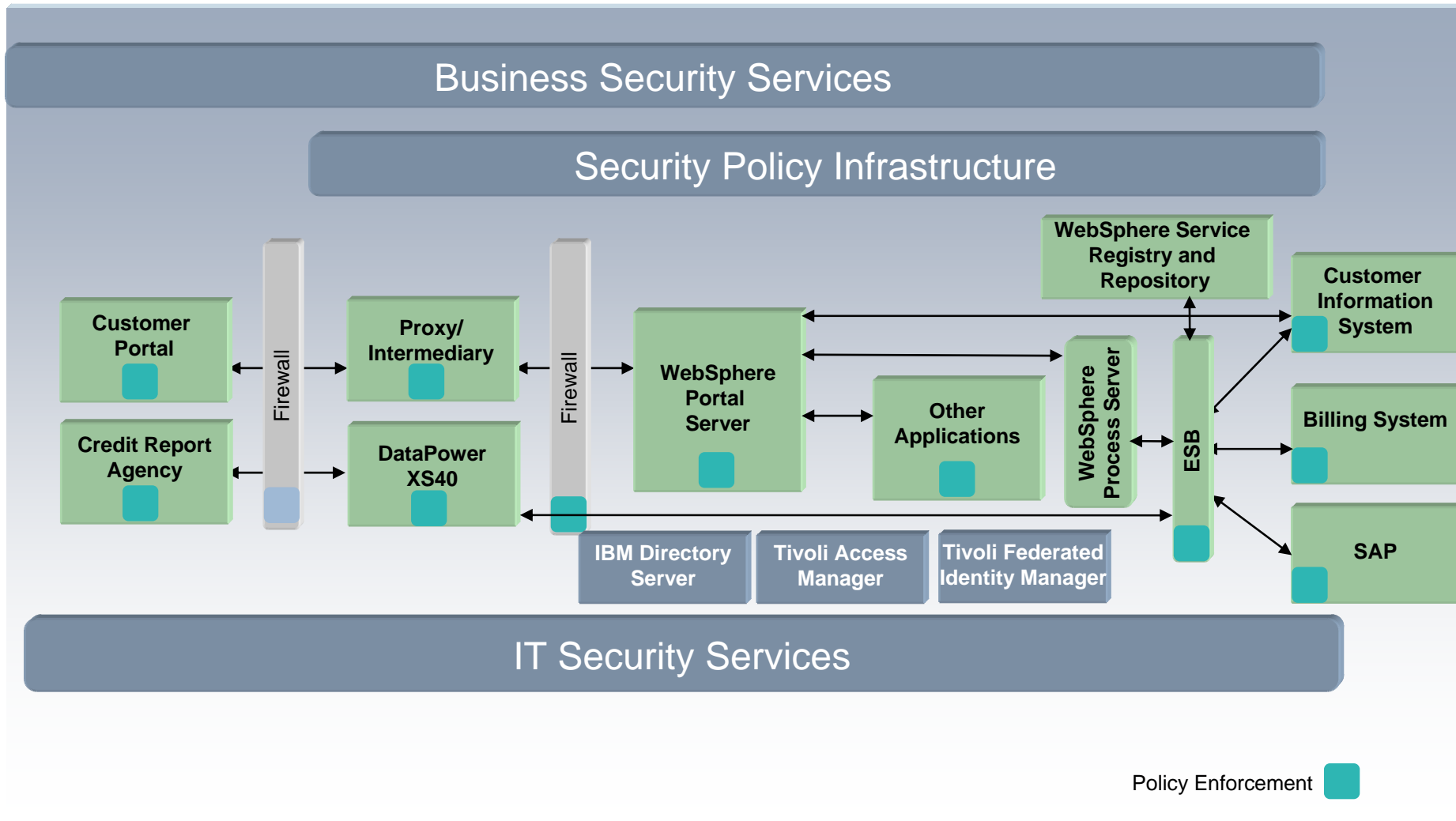**Lotus Forms**

WebSphere Dashboard Framework

WebSphere Portal

SOA on your terms and our expertise

Deploying the Solution Architecture
Implementation Topology for JK Enterprises
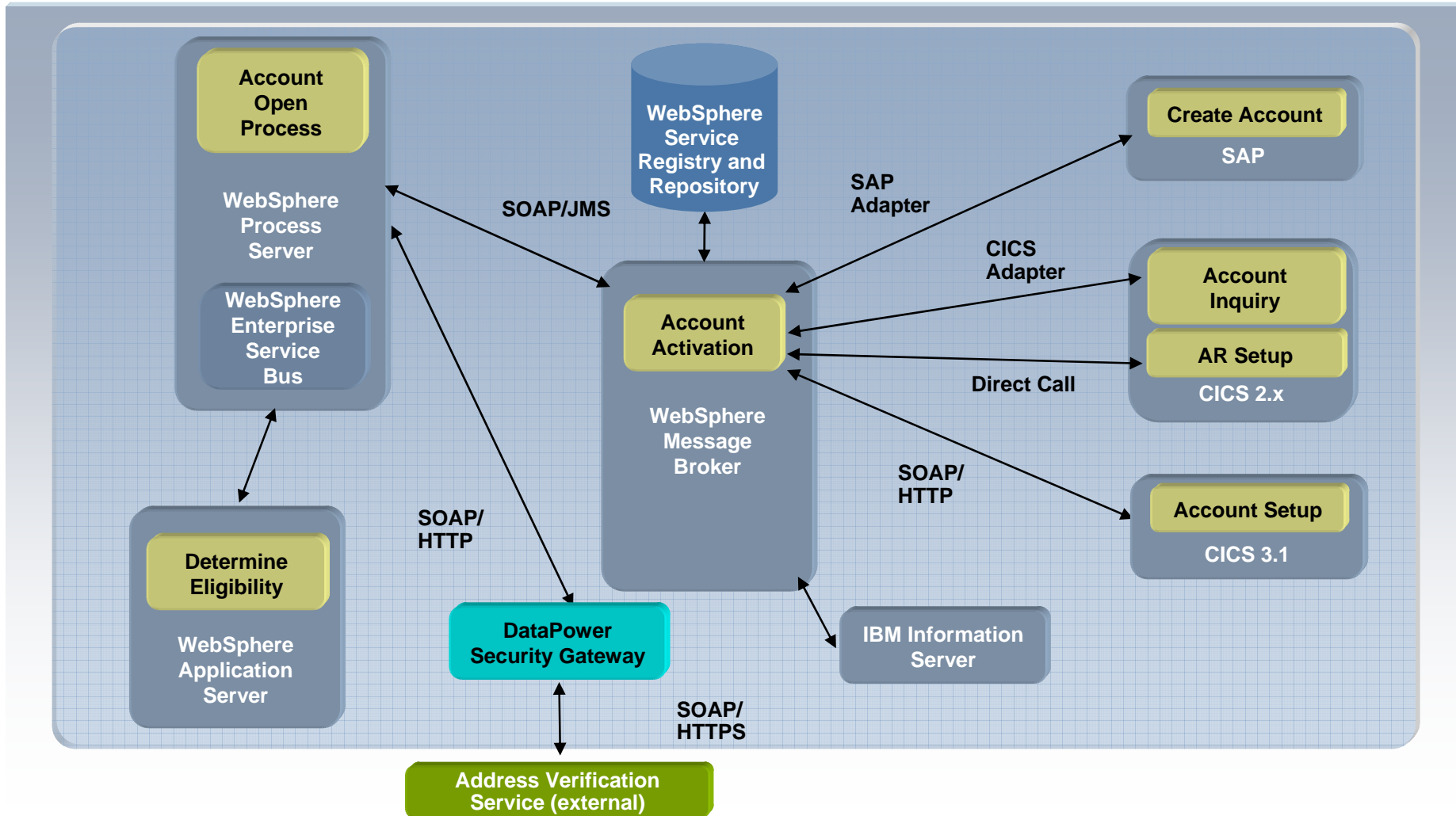
JK Enterprises Security Architecture

Business Security Services

Security Policy Infrastructure

WebSphere Service Registry and Repository

Customer Information System

Customer Portal

Firewall

Proxy/ Intermediary

Firewall

WebSphere Portal Server

Other Applications

WebSphere Process Server

ESB

Credit Report Agency

DataPower XS40

Billing System

IBM Directory Server

Tivoli Access Manager

Tivoli Federated Identity Manager

SAP

IT Security Services

Policy Enforcement

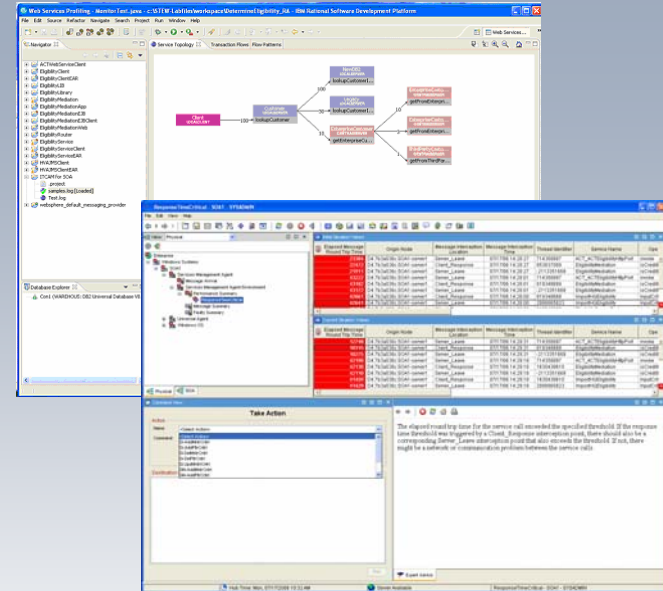*SOA on your terms and our expertise*

Infrastructure Architecture
Composite Application Management

Configuring Service Management Agents

Monitoring Account Opening Performance and Availability

Tivoli Composite Application Manager for SOA

Tivoli Enterprise Portal

*SOA on your terms and our expertise*

Agenda

- Enterprise Architecture

- SOA Business Architecture

- SOA IT Architecture
  - *Application Architecture*
  - *Information Architecture*
  - *Infrastructure Architecture*

- **Getting Started**

SOA on your terms and our expertise

SOA Adoption: Tactical and Strategic Action Combined

SOA Goal

- Market return through transformation: quicker time to production, lower costs, competitive differentiation
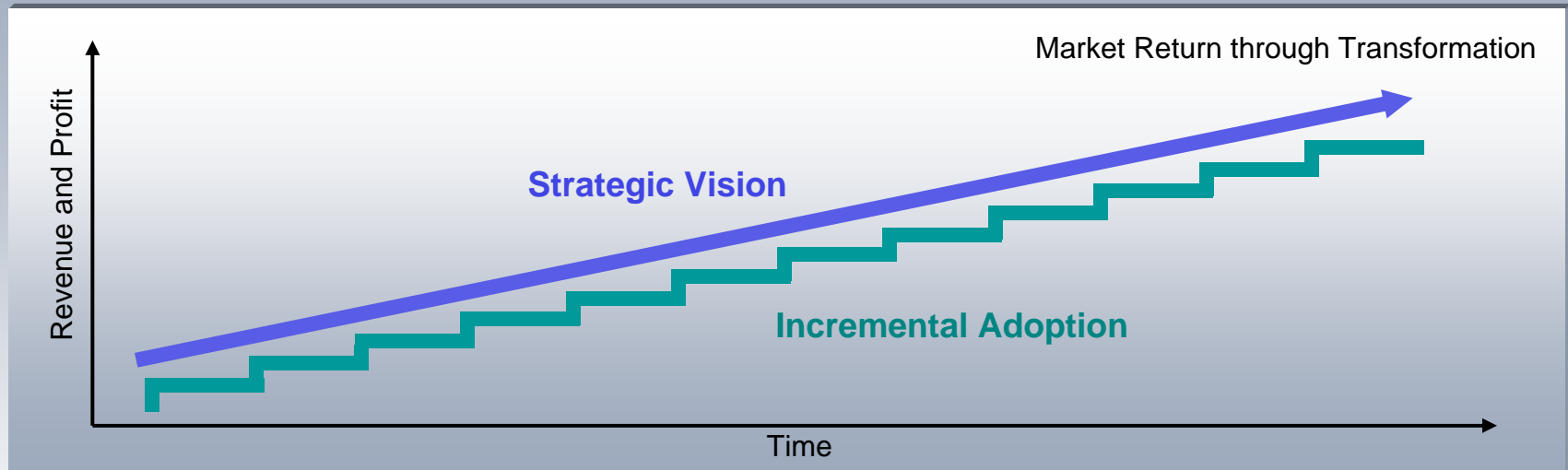
Two Primary Roadmap Perspectives

- **Strategic Vision**
  Business and IT statement of direction which can be used as a guideline for decision making, organizational buy-in, standards adoption

- **Project Plans**
  Implementation projects to meet immediate needs of the current business drivers

SOA on your terms and our expertise

Why IBM?

Trusted, experienced guidance based on 5700 customers*

- Basic to advanced to grow as your needs evolve
- Simplicity & robustness for consumability and confidence
- Pioneering metrics for SOA and agility
- Investment protection through open standards
- End-to-end processes based on industry best practices
- Only vendor across people, process, and information

Smart SOA

**# of Customers using our SOA offerings

Why IBM for SOA?

IBM understands service orientation and your business

Skills

Partners

Know-how & best practices

Infrastructure

Governance

Governance & Best Practices

Expertise in aligning business and IT processes
- 7500+ certified SOA consultants, architects, IT specialists
- Dozens of SOA-enabled business solutions

Thriving ecosystem of partners (ISVs, SIs, Resellers)
- 2500+ partners in SOA community
- 3500+ assets in SOA Business Catalog

Extensive Industry experience and best practices
- Over 4000 customers worldwide
- SOA Entry Points, SOA Reference Architecture, SIMM

Unmatched breadth and depth of products
- Over $1B/yr invested in SOA
- Leadership in open standards & 300+ SOA-related patents

Leadership in Governance & Service Lifecycle Management
- IBM SOA Governance & Management Method that spans the services lifecycle

SOA on your terms and our expertise

Let's Go!
Build on SOA Successes for Greater Business Value

1. Continue to discover the value of SOA
   - Not just doing the same thing a different way
   - SOA is not just about technology, but technology's integration with business insight

2. Get Assessed! SOA Self Assessment
   On-line at **ibm*.com/soa/assessment***

3. Evaluate and select a SOA project

4. Arrange for a SOA Workshop to begin your SOA journey

"...IBM is the leader in the development of SOA intellectual property.... with firm-wide SOA investment of $1 billion, IBM will leverage cutting-edge R&D, leading to quicker SOA value and reusable SOA assets for clients."

*The Forrester Wave™
North American SOA Integration, Q3 2006, September 2006*

SOA on your terms and our expertise

धन्यवाद
Hindi

多謝
Traditional Chinese

ขอบคุณ
Thai

Спасибо
Russian

Gracias
Spanish

شكرا
Arabic

Thank You

Hvala
Slovenian

Grazie
Italian

Danke
German

多谢
Simplified Chinese

Merci
French

Köszönöm
Hungarian

감사합니다
Korean

ありがとうございました
Japanese

SOA on your terms and our expertise

IBM SOA Architect Summit

SOA on your terms and our expertise