Enterprise Architecture II & Architecture-Management

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Agenda

I. Case 3 – Presentations

II. EA Architecture Framework

III. Business Architecture through CBM (Component Business Modeling)

IV. Governance

V. SOA Governance
I. Case 3 – Presentations
II. EA Architecture Framework
III. Business Architecture through CBM (Component Business Modeling)
Greater Flexibility Is Required

From Business Models and the Supporting IT Architecture

Flexible Business Models
- Transformation
- Business Process Outsourcing
- Mergers, Acquisitions & Divestitures

Requires

Flexible IT Infrastructure
- On Demand Operating Environment
- Service Oriented Architecture (SOA)

Composable Processes (CBM)
- Component Business Modeling

Composable Services (SOA)
Best implementations start with business design or a master plan – approach for SOA

**Step 1: Break down your business into components**
- Decide what is strategically important, and what is just operations in the value chain domains
- Analyze the different KPIs attached to these components
- Prioritize and scope your transformation projects

**Step 2: Define a Service Model**
- Identify your services based on your business components
- Specify the services and components accordingly
- *Make SOA realization decisions based on architectural decisions*

**Step 3: Implement a Service Model**
- Develop a service-oriented architecture to support the Componentized Business
- Implement service based scoping policy for projects
- Implement appropriate governance mechanism
A Business Component is a part of an enterprise that has the potential to operate autonomously, for example, as a separate company, or as part of another company.

An Operational Level characterizes the scope of decision making. The three levels used in CBM are direct, control and execute.

- Direct is about strategy, overall direction and policy.
- Control is about monitoring, managing exceptions and tactical decision making.
- Execute is about doing the work.

Columns are Business Competencies, defined as large business areas with characteristic skills and capabilities, for example, product development or supply chain.
The building block of a component business model is a ‘business component’

A component is a business in microcosm. It has activities, resources, applications, infrastructure. It has a governance model. It provides goods and services (business services)

Each business component has differentiated capabilities

Each business component defines and decides on the use of all resources needed to perform the defined activities

Each business component has a governance structure within which it manages its activities

Each business component has business services which form the interfaces to other business components
Deconstruct & Conquer: *The Component Business Model*

**1 2 3 4** First, break down your business into its components

<table>
<thead>
<tr>
<th>Example: Consumer Packaged Goods</th>
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<tbody>
<tr>
<td><strong>Strategy</strong></td>
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<td>Production and Materials Planning</td>
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<td><strong>Supply Chain &amp; Distribution</strong></td>
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<td>Supply Chain Strategy</td>
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<td>Supply Chain Planning</td>
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<td><strong>Business Administration</strong></td>
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<td>Corporate Strategy</td>
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<td>Alliance Management</td>
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<td>Line of Business Planning</td>
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<td>Business Performance Management</td>
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<td>External Market Analysis</td>
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<td>Organization and Process Design</td>
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<td>Legal and Regulatory Compliance</td>
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<td>Indirect Procurement</td>
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<td>Facilities and Equipment Management</td>
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<td>HR Administration</td>
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<tr>
<td>IT Systems and Operations</td>
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*Example: Consumer Packaged Goods*

- **Strategy**
  - Category/Brand Strategy
  - Category/Brand Planning
- **Tactics**
  - Brand P&L Management
  - Matching Supply and Demand
  - Marketing Development & Effectiveness
  - Product Ideation
- **Execution**
  - Concept/Product Testing
  - Product Development
  - Product Management
  - Marketing Execution
  - Consumer Service
  - Product Directory

**Customer Relationship**

- Customer Relationship Strategy
- Customer Relationship Planning

**Manufacturing**

- Manufacturing Strategy
- Supplier Relationship Management
- Production and Materials Planning

**Supply Chain & Distribution**

- Supply Chain Strategy
- Supply Chain Planning
- Distribution Oversight
  - Inbound Logistics
  - Outbound Logistics

**Business Administration**

- Corporate Strategy
- Corporate Planning
- Alliance Management
- Line of Business Planning
- Business Performance Management
- External Market Analysis
- Organization and Process Design
- Legal and Regulatory Compliance
- Treasury and Risk Management
- Accounting and GL
- Indirect Procurement
- Facilities and Equipment Management
- HR Administration
- IT Systems and Operations
Deconstruct & Conquer: *The Component Business Model*

1. 2. 3. 4. Next, decide what’s differentiating and what is simply operating.
Deconstruct & Conquer: *The Component Business Model*

1. 2. 3. 4. Then, analyze costs

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### Example: Consumer Packaged Goods

<table>
<thead>
<tr>
<th>Financial View</th>
<th>Strategy</th>
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<td>Value-Added Services</td>
<td>Product Directory</td>
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### Business Administration

- Corporate Strategy
- Corporate Planning
- Alliance Management
- Line of Business Planning
- Business Performance Management
- External Market Analysis
- Organization and Process Design
- Legal and Regulatory Compliance
- Treasury and Risk Management
- Accounting and GL
- Indirect Procurement
- Facilities and Equipment Management
- HR Administration
- IT Systems and Operations

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Then, analyze costs:

**High capital area**

**High cost area**

**High cost & capital area**

**Example: Consumer Packaged Goods**

- Concept/Product Testing
- Product Development
- Product Management
- Marketing Execution
- Consumer Service
- Product Directory

**Manufacturing**

- Manufacturing Strategy
- Supplier Relationship Management
- Production and Materials Planning
- Supplier Control
- Make Products
- Assemble/Pkg. Products
- Plant Inventory Management
- Manufacturing Procurement
- Distribution Center Operations
- Transportation Resources
- En Route Inventory Management

**Supply Chain & Distribution**

- Supply Chain Strategy
- Supply Chain Planning
- Inbound Logistics
- Outbound Logistics

**Business Administration**

- Corporate Strategy
- Corporate Planning
- Alliance Management
- Line of Business Planning
- Business Performance Management
- External Market Analysis
- Organization and Process Design
- Legal and Regulatory Compliance
- Treasury and Risk Management
- Accounting and GL
- Indirect Procurement
- Facilities and Equipment Management
- HR Administration
- IT Systems and Operations
Finally, prioritize your transformation initiatives.

### Deconstruct & Conquer: *The Component Business Model*

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III. Governance
What is Governance?

Establishing chains of responsibility, authority and communication to empower people (decision rights)

Establishing measurement, policy and control mechanisms to enable people to carry out their roles and responsibilities

- Corporate Governance
- IT Governance
- EA Governance
- SOA Governance
Recap: Enterprise Architecture provides the “city plan” for business and IT “building blocks”.

As an integral part of the strategic planning process, the EA is the linkage between the business strategy, IT strategy and IT implementation. EA guides investment, cost reduction and design decisions to support the goal of optimizing return on IT investments (ROI).

The Enterprise Architecture defines an environment in which infrastructure and solutions can be built for both known and unforeseen future requirements.
The **practice and orientation** to **managed and control architecture** at an enterprise-wide level.

- Does not operate in isolation, but within a hierarchy of governance structures (e.g. Corporate Governance, Information Technology (IT) Governance, etc.)
Enterprise Architecture and Gap Analysis & Transition
Committees for ensuring Enterprise Architecture

Enterprise

Architecture

Business & Technical Solutions (Projects)

 Deployable Unit

"Solution Life Cycle"

ARB
Architecture Review Board

ACRT
Architecture Compliance Review Team

Governance

Gap Analysis

Transition Plan

Enterprise Strategy

IT Strategy

Enterprise wide focus

Solutions focus
Types of Engagement and their Design Authorities

• Ideally, the sequence shown should be followed, with all IT Projects ultimately deriving from a written Business Strategy.
Organization Model for Architecture Governance
EA Governance – Overview of the boards/committees

Architecture Management

Executive Review Board
- Identify Business Requirements
- Ensure Business and IT are strategically aligned
- Review and Approve IT Initiatives & Projects
- Review and Approve Architecture Funding
- Sponsor and Champion Architecture
- Approve R&D Plan
- Monitor Progress

IT Steering Committee
- Sponsor and Champion Architecture
- Own and Support Architecture Vision and Guiding Principles
- Ensure Architecture Compliance
- Review, Approve/Deny Architecture Changes/Exceptions/Appeals
- Ensure Architecture Vitality and Review Emerging Technologies
- Communicate Architecture to Stakeholders

Architecture Review Board
- Champion Architecture
- Review Projects for Compliance with Standards
- Provide Architecture Guidance to the Stakeholders
- Maintain Architecture Standards and Processes
- Recommend Architecture Improvements

Architecture Compliance Review Team
- Comply with Architecture & Provide Feedback to ARB
- Locally Sponsor and Champion Architecture
- Support Conformance to Architecture
- Submit Requests for Architecture Changes and Exceptions

Architecture Stakeholders
- Comply with Architecture & Provide Feedback to ARB
- Locally Sponsor and Champion Architecture
- Support Conformance to Architecture
- Submit Requests for Architecture Changes and Exceptions
Example Architecture Organizational Model

- Business Units and Business Innovation Teams
- Management Committee
- Technology Briefings
- Operations Committee
- Architecture Management Council (AMC)
- Delivery Architecture Review Board (DARB)
- Solution Delivery Projects

Architecture Blueprint

- Direction and vitality
- Architectural guidance and models
- Project Architects

- Business direction and opportunities
- Escalation of issues
- IT opportunities
- Operations issues
- IT directions

Selected issues and opportunities

Selected project issues, questions, deviations, opportunities

Task forces for selected subjects
Integrated Transition Plan

Application Development / Tools
- Standardize IT purchase process
- Implement project review process
- Continue selection of standard tools to support appl. models
- Complete set of standard development tools and processes

Application Models / Standards
- Identify existing standards
- Select middleware approach
- Select hardware, software and development components
- Complete standard set of guidelines and standards

Business Productivity
- Standard e-mail, corporate intranet
- Localized collaboration and electronic document mgmt
- Corporate wide workflow, data warehouse fully available

Enterprise Systems Management
- User / storage mgmt on host and servers
- SW distribution, centralized LAN/Data/System/Security mgmt
- Complete, centralized mgmt of host, servers, and PCs

Infrastructure
- Upgrade LAN
- Upgrade desktop PCs
- 3270 replacement
- Server consolidation
- Maintain consistent environment
- Incorporate new IT as necessary

Skills
- Training / Skills Development / Education

Example
A Roadmap can be created for key Architecture Building Blocks (ABB) – Example Operating Systems

**Current**

**Baseline Environment**
- OS/390, USS 390, OS/400,
  - AIX, Solaris, Digital Unix,
  - Win95, Win98, 2000, NT, Novell
- OS/2, DOS, MacOS, PC Unix

**Retirement Targets**
- DOS, win95, win98
- Novell

**Sunset Targets**
- OS/400
- MacOS
- OS/2, Win NT, 2000
- Non-Solaris flavors of Unix

**Migration**

**Tactical Deployment**
- zOS
- Solaris
- Win 2000
- Win XP

**Future**

**Strategic Direction**
- zOS
- Solaris
- Win XP, 2003

**Preferred**
- zOS
- Solaris
- Windows

**Emerging**
- Linux
- Autonomic
- Virtualization
- Integration
IV. SOA Governance
What is SOA Governance?

SOA Governance?

Extension of IT Governance focused on the lifecycle of services to ensure the business value of SOA

SOA Governance is a catalyst for improving overall IT Governance
Why SOA Governance Matters

- Realize business benefits of SOA
  - Business process flexibility
  - Improved time to market

- Mitigate business risk and regain control
  - Maintaining quality of service
  - Ensuring consistency of service

- Improved team effectiveness
  - Measuring the right things
  - Communicating clearly between business and IT
Enterprise Architecture and SOA Governance

- Ensures Alignment
- Ensures Vitality
- Ensures Compliance
SOA Governance Life Cycle Addresses Key Questions

How do we govern and manage the Life Cycle of services?

What standards do we need to establish and when?

What processes do we need to identify, develop, deploy and manage services?

How do we govern and manage our SOA Identification, development and deployment approach?

What metrics and key performance indicators will we use?

How does the registry and repository get used? What controls are necessary?

What is our SOA Vision and Strategy?

What can I reuse from my existing IT Governance Model?

How do we measure our model and the effectiveness of services?

Who manages the Services Repository? Who uses it?
SOA Governance Lifecycle – How to establish?

Plan the Governance Need
- Document and validate business strategy for SOA and IT
- Assess current IT and SOA capabilities
- Define/Refine SOA vision and strategy
- Review current Governance capabilities and arrangements
- Layout governance plan

Define the Governance Approach
- Define/modify governance processes
- Design policies and enforcement mechanisms
- Identify success factors, metrics
- Identify owners and funding model
- Charter/refine SOA Center of Excellence
- Design governance IT infrastructure

Monitor and Manage the Governance Processes
- Monitor compliance with policies
- Monitor compliance with governance arrangements
- Monitor IT effectiveness metrics

Enable the Governance Model Incrementally
- Deploy governance mechanisms
- Deploy governance IT infrastructure
- Educate and deploy on expected behaviors and practices
- Deploy policies
SOA Governance Considerations – What is required?
Processes, Roles and Organization
Defining the Governance Solution at JKE

Execute the “JKE SOA Governance Project”

- Identify SOA Business and IT Principles
- Determine Existing Governance Structure
- Define CoE Structure
- Create the SOA Governance Framework
  - Roles
  - Processes
  - Policies
  - Metrics
  - Quality Gates
- Implement Tools and Infrastructure
  - WebSphere
  - Lotus
  - Rational
  - Tivoli
- Refine Operational Environment
Interaction Between the Lifecycles

Service Lifecycle

- **Policies**
  - quality gates
  - controls
  - metrics
  - standards

  are **defined** in the Governance lifecycle (for different aspects of Governance)...

  …and they are **enforced** in the service lifecycle

  metrics are captured to improve governance process
The Governance Framework (Extensions to Development Processes)

- All the “elements” that we need to add to make a process well-governed

non-governed process

well-governed process
Services must be compliant with the existing reference architecture

Implement Service that failed Litmus test

Services should be reused instead of created whenever possible

Services must be compliant with the existing reference architecture

new roles

new activities

exception procedure

human decision

policy

registry lookup

quality gate

review
Example – Enforcing Service Reuse Policy

- During the “Identify Services” activities, the SOA Architect implements the Service Reuse policy searching for existing services.

- At the Validate Service Design quality gate the policy is enforced.

**Policy**
1. Services should be reused instead of created whenever possible.

**Quality Gate**
The SOA Architect implements the **Compliance with the Reference Architecture** policy during all the activities in the Service Modeling phase.

At the **Validate Service Design** quality gate the policy is enforced with a **manual review** of the service model.

**Policy** 2: Services must be compliant with the existing reference architecture.

**Quality Gate** 4: Validate Service Design, manual enforcement during development.
Governance at Development Time – Enforcing Policies of Services Life Cycle

Ensure Compliance and Define Policies

1. Service state transitions are defined based on governance solution
2. Validate Service Ownership
3. Registry Lookup to enforce reuse of existing services
4. Validate Service Design for Standards Compliance
5. Publish Service to repository after Litmus test is successful
6. Add a Policy for Dynamic Binding
Main Capabilities of Service Registry and Repository

- **Publish**
- **Find**
- **Enrich**
- **Manage**
- **Govern**

**Encourage Reuse**
Find and reuse services for building blocks for new composite applications.

**Enhance Connectivity**
Enable dynamic and efficient interactions between services at runtime.

**Enable Governance**
Govern services throughout the service lifecycle

**Help optimize service performance**
Enable enforcement of policies. Impact analysis