Unifying IT Vision Through Enterprise Architecture

A model for Strategic Alignment

Northeast Ohio Information Technology & Enterprise Architects (NEO-ITEA)

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Abstract

To develop a unified vision of IT activities and investments, it is essential that IT be aligned with the business at the strategic level. Such strategic alignment requires multi-year IT visioning and planning while being responsive to on-going business and operational needs. We outline a model to bridge multi-year strategic planning and execution with existing processes for short-term asset management, project planning and solution delivery. Its iterative nature allows for adjusting to changing business needs as well as the ever-evolving technology landscape. The use of standard enterprise architecture roadmap activities and processes, provides a common vision that drives alignment of key IT capabilities and assets with business strategies. We provide details of the required architecture governance and examples of roadmaps.
Problem Statement

“In spite of the unequivocal recognition of the need for Business - IT Alignment, the corporate IT departments continue to operate thru the silos of Enterprise Architecture, Application Development and Operations. In order to become a true business enabler, IT must not only deliver services fast but also ensure smooth and cost-effective operations. This requires a holistic approach to designing, delivering and managing IT services across the service lifecycle and mandates systematic integration of processes and tools across Enterprise Architecture, Application Development, and IT Operations.”

Integrate 2010 Conference Statement

● Despite the recognition for business-IT alignment, does it in fact happen at a strategic level?

● Are planning and investment decisions (including skills) for core IT services and capabilities synchronized and driven by unified strategy, or do they occur in silos?
  ● For example, are planning activities for SOA capability coordinated with those for testing services and other core application system assets, and do any of the plans line up with strategic business needs?

● How do we ensure that core IT services planning is synchronized and aligned with strategy to achieve long-term business – IT alignment while meeting short-term business needs?
The Elusive Goal of Alignment

Strategies are not clear enough to directly act upon

Multiple interpretations of business priorities

Business – IT alignment may be (mis)defined or limited to delivering solutions for various business priorities and needs

Governance is limited to aligning individual initiatives with individual IT solutions

Build IT solutions driven by multiple priorities rather than building IT capabilities

IT initiatives deliver separate solutions in piecemeal fashion often uncoordinated and misaligned with each other
Planning for the New Business-IT Reality

- Can no longer treat IT systems and disciplines as silos
- IT environments have become complex, highly integrated and interdependent
- No longer able to deal with individual systems or solutions by themselves
- Changes to one part of the environment impacts many others
- Skills need to cross system boundaries and IT disciplines
- Systems and capabilities continue to evolve, changing over several years
- IT planning is comparable to city planning
Link Strategy to Planning and Execution in a Holistic Manner

- Adopt an enterprise approach to plan and prioritize in alignment with strategy.

- Utilize enterprise architecture processes to transform business strategies and needs into actionable plans.

- Focus on key business and IT capabilities instead of individual solutions.
  - Business Capability: Describes what the business must be able to do at a specific level of maturity to meet specific goals and objectives. Describes business needs at a more granular level in terms of “the ability to…”.
  - IT Capability: Describes cross-cutting skills, technologies and processes that IT must have at a specific level of maturity to enable multiple business solutions. An IT capability is broad and not specific to any one business solution. Examples include portal, business intelligence, user computing, enterprise service bus, workflow, content management, security, etc.

- Plan development and maturing of IT capabilities including skills in a coordinated fashion to meet strategic needs.

- Implement governance and metrics to ensure alignment and adaptability for plans that span multiple years.
In Line With the TOGAF ADM

The Open Group Architecture Framework (TOGAF)
Architecture Development Method (ADM)

- TOGAF v 9

Governance and Metrics: Ensure projects and initiatives are building architectures in alignment with roadmaps

Execution: Manage interfaces with planning and execution of projects & initiatives

Roadmaps: Current state, target state, intermediate stages
A roadmap is a visual representation of a transition from the as-is architecture to the envisioned to-be architecture.

To be a useful tool for more tactical planning and budgeting processes, it shows important milestones along the route and the dependencies between them.

A good roadmap provides the information required for fast and efficient decision making, allowing you to assess your progress along the "driving" route and identify possible problems.
Key Attributes of a Successful Enterprise Roadmap

1. Strategy-Driven Technology Gap Identification
   - Identifies gaps in current technology architecture based on articulated business strategies and future capabilities

2. Decision Triggers and Milestones
   - Highlights key business and technology decision points, alternatives, and factors to be taken into account when making investment decisions

3. Continuous Revision Mechanisms
   - Embeds into governance process ongoing revision and maintenance

4. Clear Linkage to Business Objectives
   - Connects to line-of-business and enterprise-level technology objectives

5. Visible Ties to Enterprise Architecture
   - Illustrates relationships between roadmap and the enterprise architecture to provide link to the broader picture

6. Transparency of Cost Implications
   - Outlines cost requirements for current and future projects

7. Input into Project Plans and Migration Timelines
   - Provides forward insight into future phases of planned projects to spot interdependencies across the portfolio

8. Inventory of Current and Target Environments
   - Lays out current and target state of the application and technology portfolios

9. Explicit Representation of Technology Interdependencies
   - Highlights links between elements of the current and planned IT architectures

Source: Enterprise Architecture Executive Council research
Business capability roadmaps identify the current state, desired end state and interim states of business capabilities for one or more business functions. The boundaries of the business capability roadmaps can be defined using industry standard component business models.

IT Capability roadmaps identify the current and desired maturity level, for a given IT capability along with a series of interim states that transition from current to desired over increasing stages of maturity. It identifies the people, process and other technology dependencies required for each transitional state.

An IT capability roadmap builds consensus about a set of needs and the technologies required to satisfy those needs; assists in forecasting technology developments; and, establishes a framework to plan and coordinate technology developments.
Creating Effective IT Capability Roadmaps

- Focus on strategic IT capabilities like: Portal, SOA, Enterprise Content Management, etc…

- Select a standard maturity model and assess your IT capabilities based on the selected model.

- Identify current state based on your maturity model.

- Identify future state based on your business and asset roadmaps

- Identify key IT capabilities that will be built at each maturity level

- Identify key business capabilities and benefits at each maturity level

- Identify implications on skills and existing processes

- Involve and get buy-in from your Leadership Team and key stakeholders.

- Expect to spend 5% creating the roadmap and 95% communicating it to your organization.
<table>
<thead>
<tr>
<th></th>
<th>Basic</th>
<th>Standardized</th>
<th>Advanced</th>
<th>Dynamic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SOA maturity</strong></td>
<td>SOA focused on Simple Quick Win Projects</td>
<td>SOA Applied to Existing Portfolio Projects</td>
<td>SOA Focused on Business Process Automation and Improvement</td>
<td>SOA Quantitatively Managed Monitoring Business Processes for Business Process Automation</td>
</tr>
</tbody>
</table>
| **Process**     | Delivery process structured around applications, projects and LOB | - Delivery process structured around delivery of services  
- Adoption of RUP SOA | - Business Process Modeling  
- Complete lifecycle governance for services, processes, and business rules  
- Process to capture NFRs and SLAs | - Automated governance processes  
- Charge back process |
| **People**      | - Development groups siloed by department       | - People aligned with SOA roles and responsibilities | - Promotion of process-centric skills in IT communities  
- Initial formation of knowledge centers/ SOA center of excellence | - SOA center of excellence established  
- Process owners are empowered to drive optimization of business processes |
| **Technologies**| - Basic service infrastructure; support for core WS standards wsdl, soap, xml  
- Security, logging and auditing policies in code rather than using a gateway solution | - Initial project level use of ESB and BPEL for service integration and orchestration | BPM, MDA, BAM                               | BAM, BPEL, BPM, BRMS |

- BPM, MDA, BAM
- BAM, BPEL, BPM, BRMS
### SOA Roadmap – Technology View

<table>
<thead>
<tr>
<th>Maturity Level</th>
<th>Basic</th>
<th>Standardized</th>
<th>Advanced</th>
<th>Dynamic</th>
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</thead>
</table>
| IT Capability  | - Services Boundaries  
- Basic Security  
- Basic Governance | - Enterprise Security  
- Enterprise Governance  
- Service Discoverability | - Advanced Monitoring  
- Process Modeling  
- Process Management  
- Policy Management | - Composable business processes  
- Self Service  
- Single Sign On  
- Rule Driven Policies |
| Technologies & Frameworks | - Enterprise Models  
- Application Server to support basic service infrastructure and tools with support for core WS standards wsdl, soap, xml  
- Security, logging and auditing policies captured in code rather than using a gateway Solution  
- Application Server | - Enterprise Service Bus  
- Application Server  
- SOA Testing Tool  
- Service Registry and Repository  
- Reusable Asset Manager  
- Access Manager  
- Identity Manager | - Process Server  
- Advanced Enterprise Service  
- Model Driven Architecture | - Portal  
- Business Activity Monitoring tools,  
- Process Server  
- Business Rule Manager |
<table>
<thead>
<tr>
<th>Maturity</th>
<th>Level I</th>
<th>Level II</th>
<th>Level III</th>
<th>Level IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web Applications</td>
<td>- Custom Security (Legacy App)</td>
<td>- Custom Security (Legacy App)</td>
<td>- JEE Security</td>
<td>- JEE Security</td>
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<tr>
<td></td>
<td></td>
<td>- JEE Security</td>
<td></td>
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</tr>
<tr>
<td>LDAP Directories</td>
<td>- Sun One</td>
<td>- Sun One</td>
<td>- Single LDAP (Active Directory)</td>
<td>Single LDAP Directory</td>
</tr>
<tr>
<td></td>
<td>- Active Directory</td>
<td>- Active Directory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Services</td>
<td>Not secured. Deployed in trusted zone</td>
<td>Not secured. Deployed in trusted zone</td>
<td>- Support Role propagation through JEE framework (limited to distributed services)</td>
<td>- WS-Security for mainframe services - WS Context</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- WS Security (Encryption, Signature) - WS Context</td>
<td></td>
</tr>
<tr>
<td>Mainframe Client</td>
<td>ACF2</td>
<td>ACF2</td>
<td>ACF2</td>
<td>- Enable WS-Security for mainframe consumers - Enable SSL</td>
</tr>
<tr>
<td></td>
<td>- Weblogic</td>
<td>- Weblogic</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>- Tomcat</td>
<td>- Tomcat</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- MQ Security</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduced Sign On</td>
<td>Custom implementation</td>
<td>Custom implementation - LTPA</td>
<td>- LTPA - JEE Security - SAML</td>
<td>- Portal - Access Manager (SSO)</td>
</tr>
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</tbody>
</table>
How do we ensure that core IT services planning is synchronized and aligned with strategy to achieve long-term business – IT alignment while meeting short-term business needs?

- **Architecture Governance:**
  - The mechanism, including essential change processes, by which enterprise architectures are managed and controlled at an enterprise-wide level. [after TOGAF Version 9]

- **Metrics:**
  - Specific descriptions defining the ideal target values, prescribing the measurement processes, and the interpretation of the assessment. [after COBIT 4.1]
To drive, support, and ensure IT inter-discipline alignment and integration:

- Build Architecture Governance top-down from business to IT
  - Favor proactive governance over reactive

- Build Metrics top-down from business to IT
  - Utilize the fewest Metrics necessary to verify and validate ‘Success’
  - Remember, you can always improve!

- Identify the value exchanged at each interface
  - Business-IT interfaces
  - IT inter-discipline interfaces
A Governance Structure for Roadmaps

Enterprise Architecture Executive Council – 10-Step Roadmapping Process

1. Determine Ownership
   - Roles and responsibilities
   - Define the cadence of activities

2. Establish Metrics
   - Define the quantitative measures of roadmapping success

3. Understand Business Objectives
   - Capture business goals to understand future needs

4. Find Gaps in Current State
   - Understand current state architecture
   - Identify gaps in capabilities

5. Project Planning
   - Check Cross-stack Impact
     - Map cross-stack impact of projects
   - Build in Event Triggers
     - Plan roadmap adaptation for future business events
   - Refresh Post-Project
     - Amend the roadmap when projects are completed

6. Roadmap Maintenance

7. Capabilities Analysis

8. Governance

9. Map Projects to Timeline
   - Array projects across three-year time horizon

10. Prioritize Projects
    - Filter projects by business value and urgency

11. Identify Required Solutions
    - Set IT specifications to meet business goals

Execution and Results

**Architecture Governance**
Milestone Reviews – Issues - Exceptions

**Metrics**
Ideal – Measurement - Assessment

**Execution & Realization**

- **Strategic**
  - Business Capability Roadmaps
  - IT Asset Portfolio Roadmap
  - IT Capability Roadmaps

- **Tactical**
  - Technical Approach
  - IT Portfolio Planning
  - Project Start Architecture
  - Portfolio Projects
  - Incremental IT Advance

- **Roadmap Milestone**
  - Individual IT Asset Roadmaps
  - IT Asset Planning

**Example:**
A new/improved IT Capability
Multi-Level Governance

Level 4 – IT Steering Committee
- Architecture Issue Arbitration
- Architecture Decision (Exception or Compliance)
  - Architecture Issue Escalation Communication, Reporting

Level 3 – IT Leadership Team
- Executive Oversight and Sponsorship
- Architecture Issue Arbitration
  - Architecture Decision (Exception or Compliance)
  - Architecture Issue Escalation Communication, Reporting

Level 2 – Architecture Review Board (ARB)
- Administration
  - SAG Metrics and Reporting
  - Architecture Review Meeting Administration
  - L1 Governance Monitoring
  - Architecture Decision (Exception or Compliance)
    - Reviewed Solution Architecture

- Governance
  - Target Architecture Review
  - Architecture Issue Resolution and Exception Management
  - Gate Sign-Off
  - Architecture Issue Elevation and Escalation
    - Solution Architecture for Review

Level 1 – Embedded in Planning and Delivery Process
- IT Strategy and EA Architecture Alignment (Project Start Architecture)
- Architecturally Significant Work Product Creation and Review
- Architecture Issue Resolution, Escalation, or Elevation
- Architectural Risk Mitigation
- Technical Guidance and Enablement

Coordination
- Portfolio Planning
- IT Capability Planning and Roadmaps

Coordination
- Domain Standards and Governance Alignment
- Technical Impact and Trends Communication
- Cross-Project Impact
- Harvest Reference Architectures
Conclusions

- Despite the recognition for business-IT alignment, does it in fact happen at a strategic level?
  - Use Enterprise Architecture processes and frameworks to build linkages between business strategies and IT execution

- Are planning and investment decisions (including skills) for core IT services and capabilities synchronized and driven by unified strategy, or do they occur in silos?
  - Use roadmaps to capture, plan, and coordinate the strategic IT initiatives planned over a multi-year horizon in a holistic manner in alignment business needs and to ensure focus on the right business and IT capabilities.

- How do we ensure that core IT services planning is synchronized and aligned with strategy to achieve long-term business – IT alignment while meeting short-term business needs?
  - Use governance and metrics to ensure that projects and other initiatives are executing the roadmaps and getting the intended results.
Thank You!