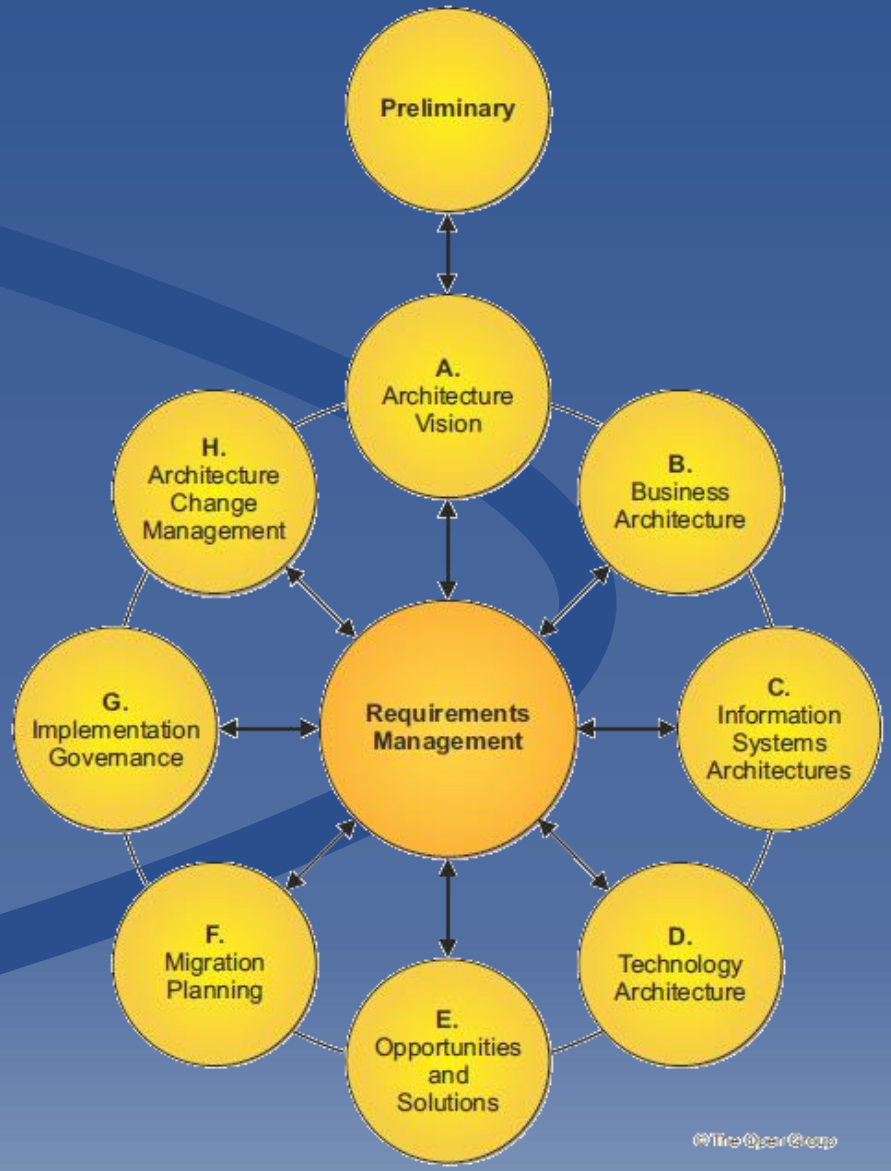
TOGAF 10

Summary & Lecture Notes

D. Vanderbist 18/05/2020



Introduction & Core Concepts

Introduction

TOGAF = The Open Group Architecture Framework

TAFIM = Technical Architecture Framework for Information Management (1995) by DoD

DoD = Department of Defense

EA = Enterprise Architecture

Enterprise = a collection with a common goal/purpose

- EA applied to entire Enterprise or parts of it

- EA :
  - To optimize processes
    - Integrated environment
    - Responsive to change
    - Supporting the business strategy
  - To Balance:
    - Business transformation
    - Operational efficiency
  - Having an integrated strategy
  - Having Explainability:
    - Data privacy requires process to be documented and understood by untrained users

Introduction

EA Benefits:

- Strategic decisions taking
- Effective and efficient business operations
- Effective and efficient digital transformation
- Better ROI
- Better Procurement

EA Drivers:

- Business Driver
- Technology Driver
- M&A
- Technical debt

EA Stakeholders:

- Requirements
  - Identify
  - Trace & Address
  - Trade-off – Balance

EA Framework:

- Architectural Framework = Foundational Framework to create other architectures from
  - Processes
  - Standardization: reduce risk = standard process & approval
  - Best practices
  - Adaptable = specific uses cases
- Bounderless Information Flow = access to integrated information to support business process requirements
- Through the change process
  - support decisions process
  - Not after the change = only documentation

Standard

TOGAF library:

- Fundamental Content
- Serries Guides

Foundation:

- ADM = Architecture Development Method
- ABB = Architecture Building Blocks
- SBB = Solution Building Blocks

Series Guides:

- O-AA: Open Agile Architecture
- DPBOK: Digital Practioner BOK
- IT4IT
- Archimate
- MSA: Micro Services Architecture

Core Concepts

TOGAF:

- EA Framework
- Acceptance, production, use, maintenance of EA
- Iterative Process Model
- Best Practices
- Reusable Assets

ISO Architecture Definition:

- Concepts & Principles = part of a system
- System in environment = context
- Elements / Relationships of the system
- Design principles
- Evolution

TOGAF Architecture Definition

- Structure: Components & Inter-relationships
- Principles & Guidelines
- Governance: Design & Evolution over Time

Core Concepts

Business Architecture:

- Organization
- Strategy
- Governance
- Processes

Data Architecture:

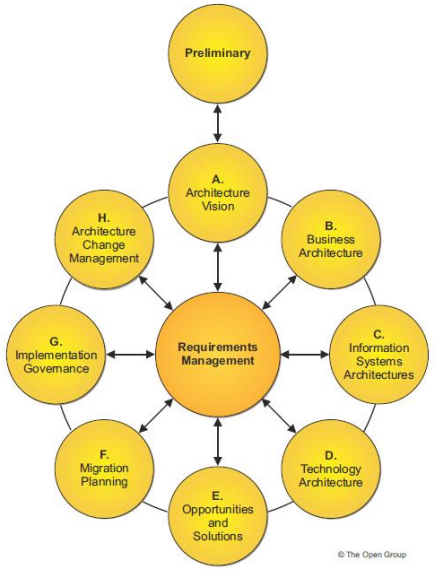
- Logic al
- Physical

Application Architecture:

- Blueprint
- Link with Processes

Technology Architecture:

- SW/HW capabilities to supper business/data/application architecture



ADM Phases:

- Preliminary: preparation and initial activities
- A: Architecture Vision: scope, stakeholders and approval (buy-in)
- B: Business Architecture
- C: Information Systems Architecture
- D: Technology Architecture
- E: Opportunities & Solutions: initial implementation planning
- F: Migration Planning: Baseline to Target
- G: Implementation Governance: Oversight over the implementation
- H: Architecture Change Management: manage change
- Requirements Management

Core Concepts

EA Services:

- Customer centric
  - Enterprise Support
  - Design Support
  - Development Support
  - Requirements Elicitation
- Internal Centric:
  - Architecture Planning
  - Architecture Practice Development

EA Results:

- Deliverables = contractually specified work product , formally reviewed, approved and singed-off by stakeholders
- Artifact = work product that describes an aspect of the architecture
- Building block = re-usable component, combined to deliver architecture and solutions
  - ABB (contained in SBB's)
  - SBB
- Work products:
  - Catalogs
  - Matrices
  - Diagrams

Core Concepts

Abstraction:

Divide problem area in smaller problems areas that are easier to model => easier to solve

- Angle = view
- Level of detail

- Contextual:
  - To understand the environment and context
- Conceptual: understand the problem
  - What = requirements
  - What is necessary to resolve requirements
- Logical:
  - How: business, data, application, technology services
  - Logical component = { services }
- Physical:
  - Physical components to implement logical components

Core Concepts

Principles:

- General guidelines/rules
- Enduring: seldom changed

Enterprise principles:

- Decision making
- Hierarchical: Enterprise -> Subsidiary principles

Architecture principles:

- Architectural work related
- Linked to business objectives & key architecture drivers

Interoperability:

- The ability to share information and services
- Business interoperability: process sharing
- Information interoperability: information sharing
- Technical interoperability: resource sharing

EAI:

- Presentation: same look & feel
- Information: same data
- Application: same components & apps
- Infrastructure: same infrastructure

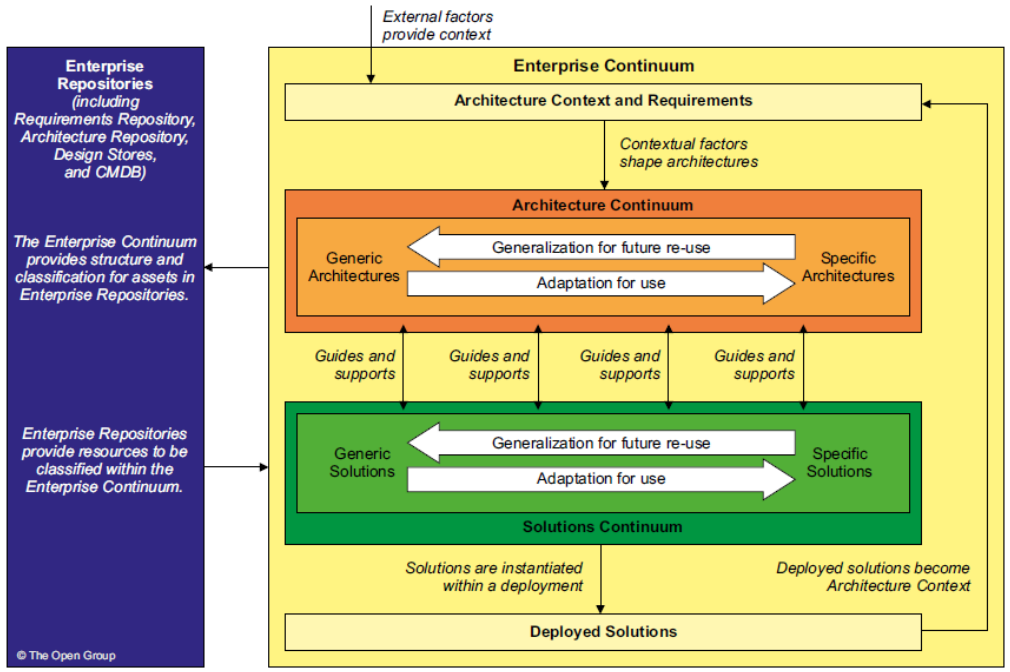
Core Concepts

Enterprise Continuum:

- Leverage/Specialize generic solutions to support individual organization
- Foundation Architecture = generic
- Organization Architecture = specific

Blocks:

- Enterprise Repository
- Architecture Context & Requirements
- Architecture Continuum
- Solutions Continuum
- Deployed Solutions

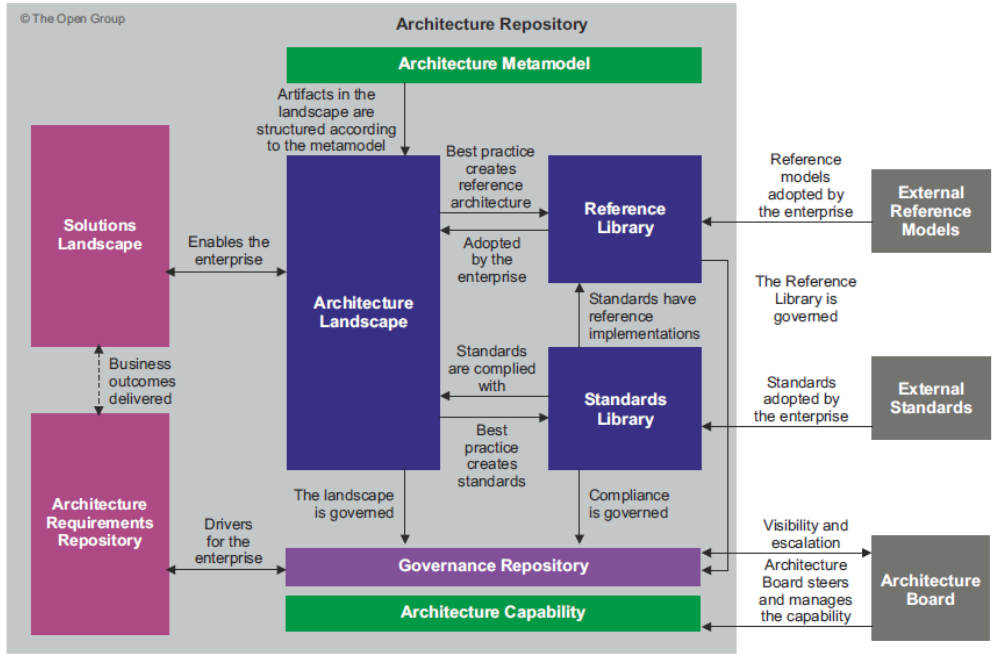


Core Concepts

Architecture Repository:

Store output created by the ADM

- Architecture Metamodel:
  - information on the AF applied to local context
- Architecture Capability:
  - Governance of the Architecture Repository
- Architecture Landscape:
  - Assets deployed in the enterprise at a certain moment in time
- Library:
  - Standards
  - Reference = templates
- Governance Repository:
  - Governance activities across the enterprise
- Architecture Requirements Repository:
  - All requirements agreed by the Architecture Board
- Solutions landscape:
  - Building blocks deploy in the enterprise
  - SBB part of the landscape



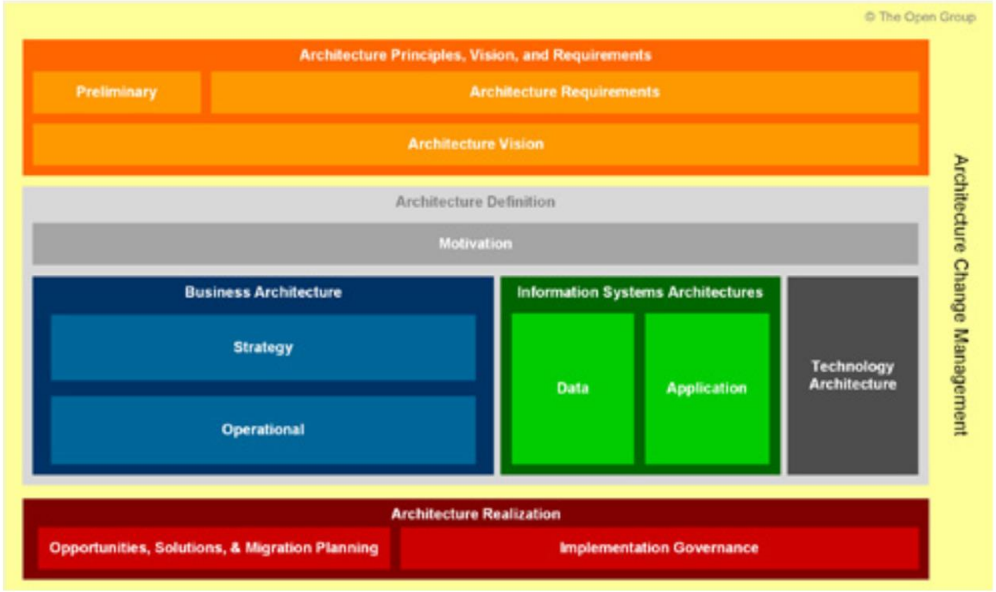
Core Concepts

Lifecycle:

- Inputs
- Outputs
- Steps

Content Framework

- Application Repository: stores Artifacts and Works Products
- Content Framework: describes Artifacts and Building blocks = categorization
- Mapping of Architectural FW on Repository



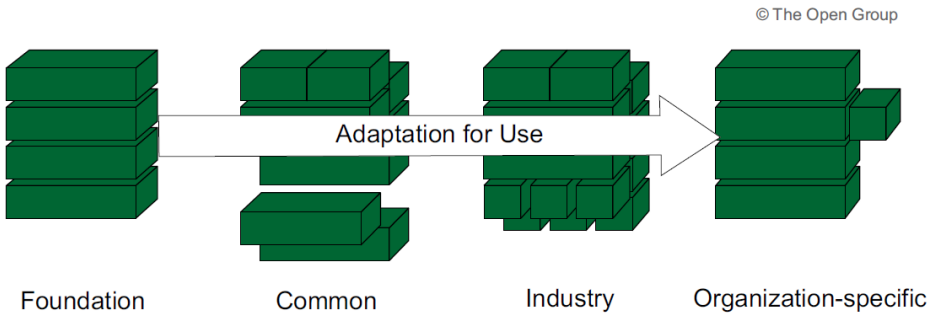
- Principles, Vision & Requirements
  - Preliminary (P)
  - Vision (A)
  - Requirements (R)
- Architectural Definition:
  - Business Architecture: Strat & Operation (B)
  - Information Systems Architecture: Data & Application (C)
  - Technology Architecture (D)
- Architecture Realization
  - Opportunities, Solutions & Migration Planning (E, F)
  - Implementation Governance (G)
- Architecture Change Management (H)

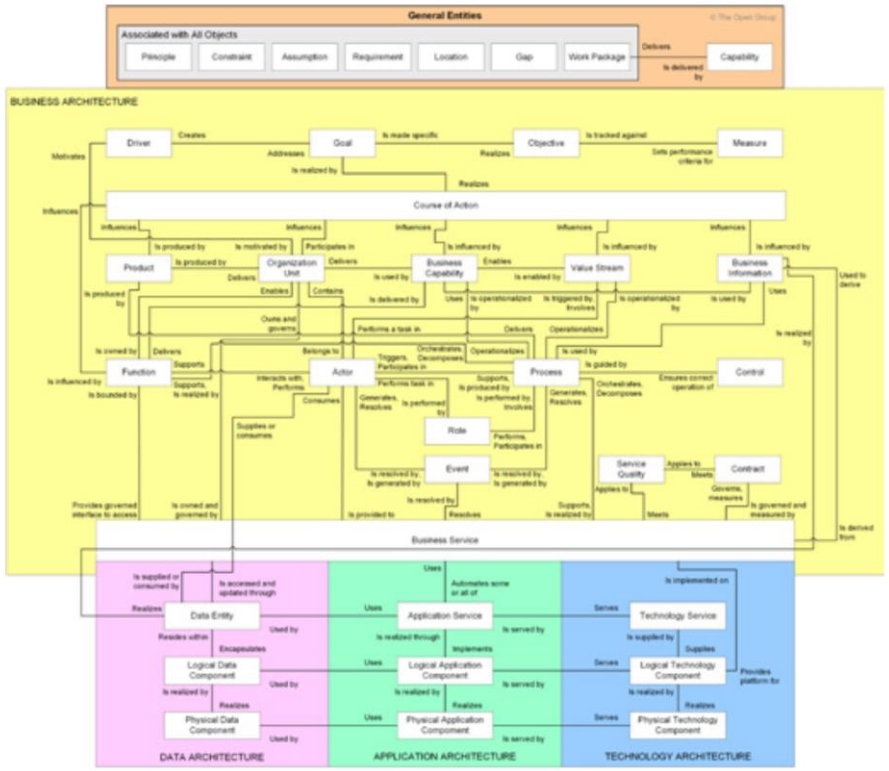
Core Concepts

TOGAF does prescribes:

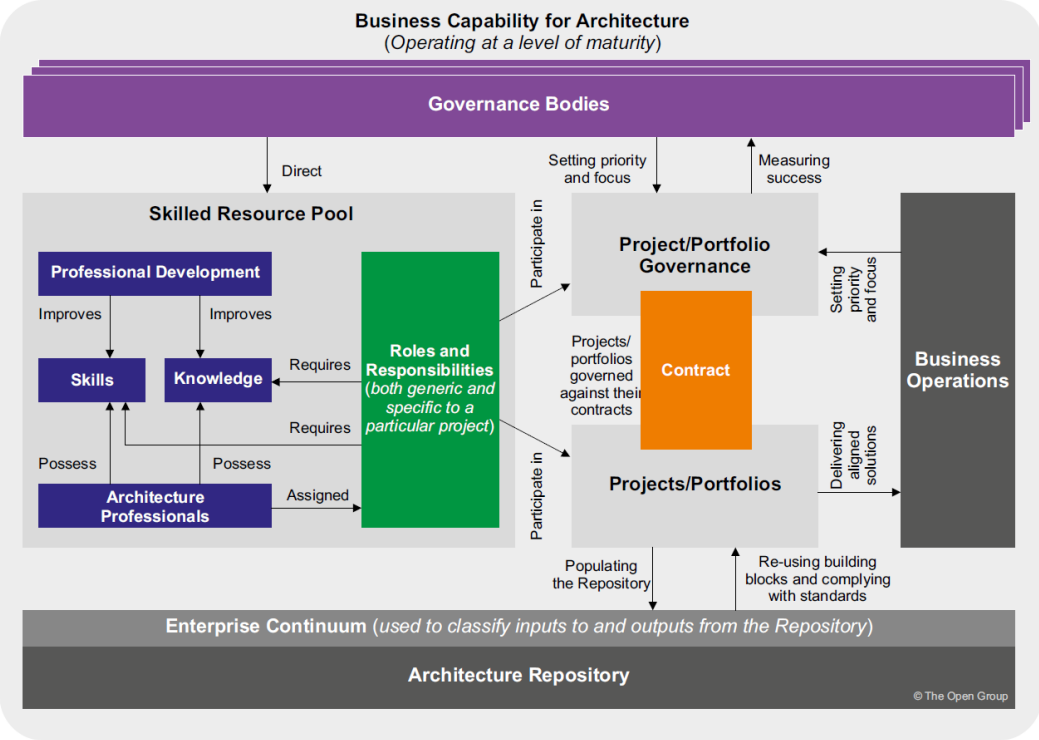
- Modelling notation:
  - Archimate
  - BPMN
  - UML

Metamodel:





Core Concepts



Business Capabilities for Architecture:

- Governance Bodies
- Resource Pool:
  - Roles & Responsibilities
- Project/Portfolio Management
- Business Operations
- Enterprise Continuum
  - Repository

Architecture Capability:

- Run EA like any other business
- Governance = X-management -> financial management
- Benefits:
  - Transparency
  - Risk & Opportunity Management
  - Re-use

Core Concepts

TOGAF:

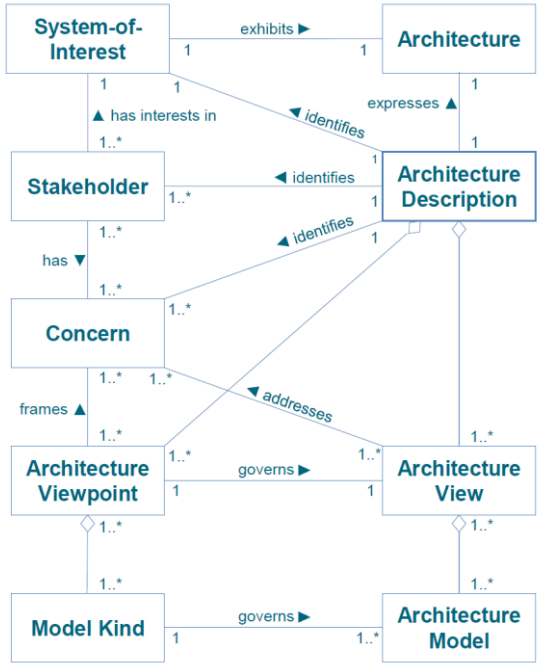
- On its own = generic deliverables
- In combination = specific deliverables of another FW
  - ITIL
  - CMMI
  - COBIT
  - PRINCE
  - PMBOK
  - MSP

+

- TOGAF LIB:
  - ADM
  - IT4IT

Viewpoints

- Extensions of the Architecture Content Metamodel
- Communicate with Stakeholders
- Focus on Stakeholder concerns



Core Concepts

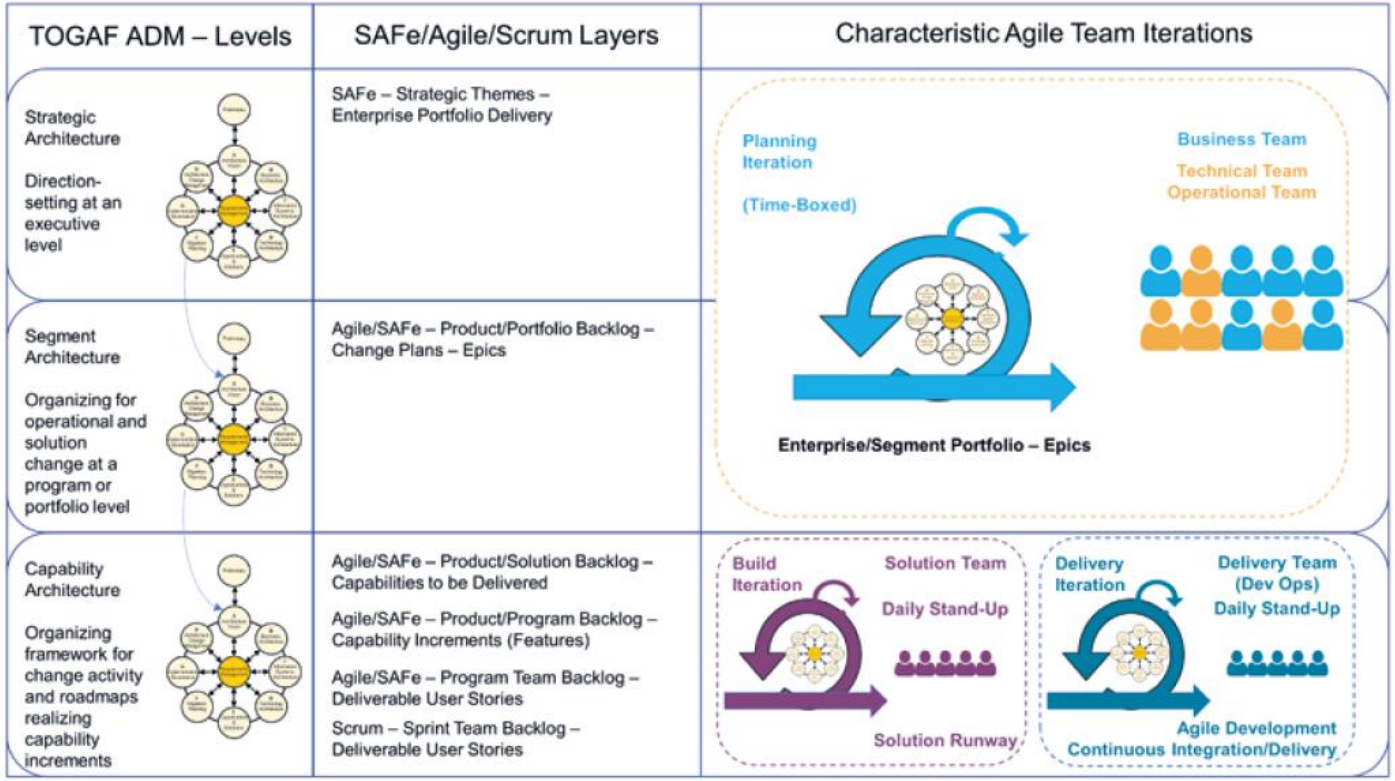
Agility

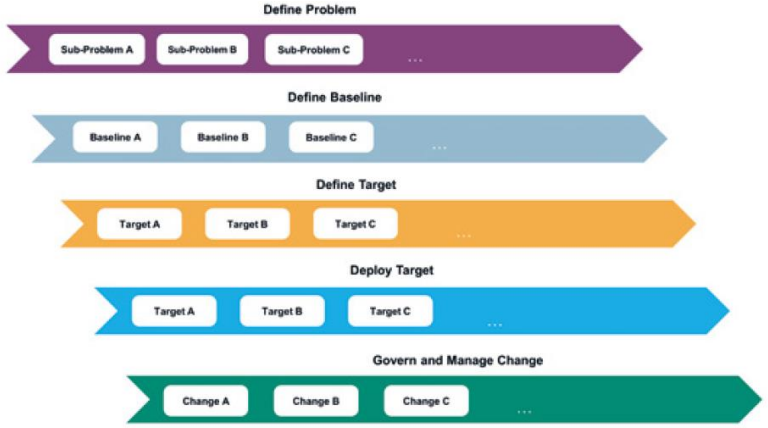
- React better to change
  - > Agile Software Concept of Agility
  - = Support continuous change
- Multiple Architectural Initiatives
  - Partitions = WBS of Architecture Initiatives
  - Levels = Levels of granularity

Risk Management:

- Operational Risk Taxonomy
- Operational Risk Analysis
  - Initial Risk Level
  - Residual Risk Level

TOGAF – Agile Mapping





Definitions

- Abstraction: summarized or generalized descriptions
- Actor: initiates or interacts with activities
- Application Architecture: interaction of application to provide key business capabilities
- Application Component: modular & replaceable
- Application platform: collection of technology components
- Application services: discrete behavior of an application
- Architecture: properties of a systems & structure of components
- Architecture domain: architectural area to be considered = business, data, application or technology
- Architecture Level: level of granularity
- Architecture Model: architecture applied to a concrete use case
- Architecture View: representation of a system from the perspective of a related set of concerns
- Architecture Viewpoint: a specification of conventions for a particular kind of Architecture View
- Baseline: specification that was formally reviewed and greed upon
- Business Model: a model describing how an enterprise creates, delivers and captures value
- Capability: an ability of an organization, person or system

Definitions

- Capability Increment: a discrete portion of a capability that delivers a specific value, when all increments are completed the capability is realized
- Concern: in interest in a system from one or more stakeholders
- EA Service: an EA capability that delivers an EA functionality
- GAP: a statement of difference between two states
- Logical: implementation independent
- Objective: an SMART organizational aim
- Requirement: a statement of need
- Roadmap: an abstract plan for a business or technology change
- Service Oriented Architecture: SOA, on architecture that supports service orientation
- Strategic Architecture: a formal summarized description of an architecture for operational and change activities
- Target Architecture: future state of the architecture
- Transition Architecture: a formal description of one state of the architecture at a point in time
- Value Stream: end-to-end collection of activities that create an overall result

Architecture Development Model (ADM)

Introduction

Enterprise Continuum

- Enterprise Repository
- Architecture Context & Requirements
- Architecture Continuum
- Solutions Continuum
- Deployed Solutions

… uses the Architecture Repository

- Reference Architecture
- Models
- Patterns = industry standards/models

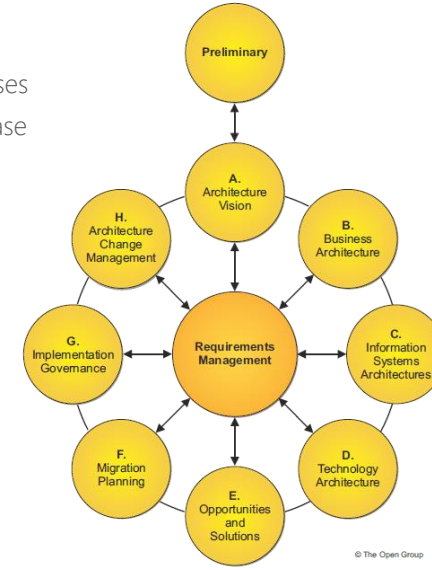
for max reuse and uses

- Architectural Source Material

EA Governance process determines how it gets into the repository

ADM cycles:

- From specific to Specific Architecture for the snapshot of the ADM cycle
- ADM Iterations:
  - Whole process
  - Between phases
  - In Phases
- Phases:
  - Each phase consist of detailed steps
  - Continuous requirements management in // of all phases
  - Output of one phase may-be modified by another phase
- Iteration:
  - Breadth
  - Depth
  - Time Period
  - Domain = Architectural Asset
- Version Management:
  - Version numbers
  - Documents: draft => accepted
- Foundation Architecture: Overall Enterprise Concerns



Introduction

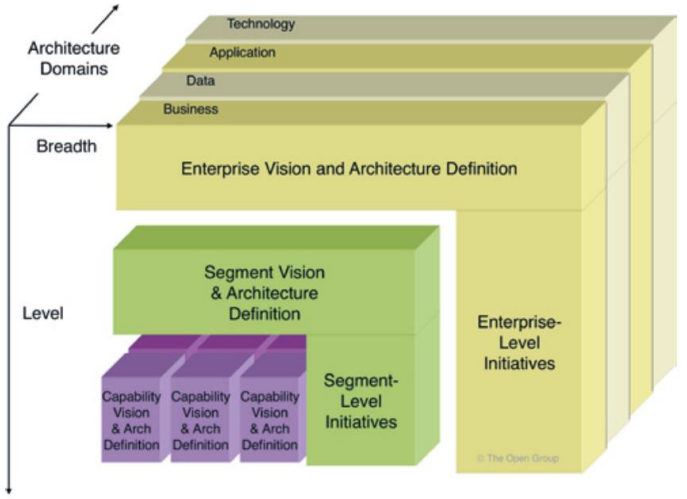
- Different:
  - Geographies
  - Economic Sector
- Adapt
  - Integrate with other FW's
  - Order of phases
- Governance:
  - Done by Architecture Board
  - Repository
    - Reference Data: EA Continuum
    - Status: Process Status
    - Audit Info: Actions / Decisions
- Scoping:
  - Scope to avoid duplicate/conflicting activities
  - Breadth:
    - Integration FW: stand-alone architecture project + publish-subscribe model
    - a federation of EA's
  - Depth:
    - Level of granularity; avoid unnecessary details
    - Sufficient detail for its purpose
  - Time Period:
    - As-Is = baseline
    - Transitive = incremental
    - Target = evolutive
  - Architecture Domains: business, data, application, technology

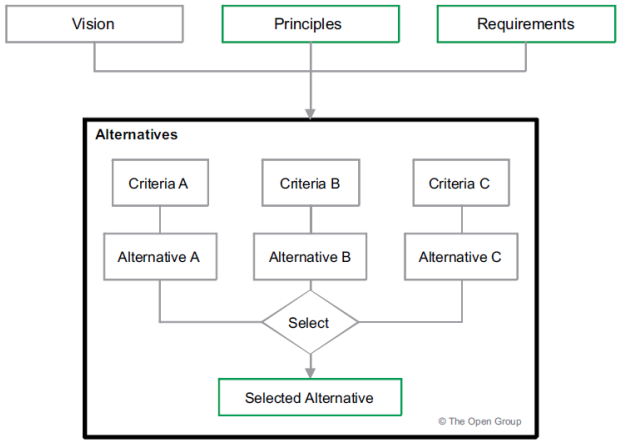
Architecture Domains:

- Purpose of the change: select domains that are affected
  - Business
  - Data
  - Application
  - Technology
- Risk: lack of consistency

Alternative architectures:

- Trade-off Analysis





Architecture Alternative Trade-Offs

Alternative Architecture:

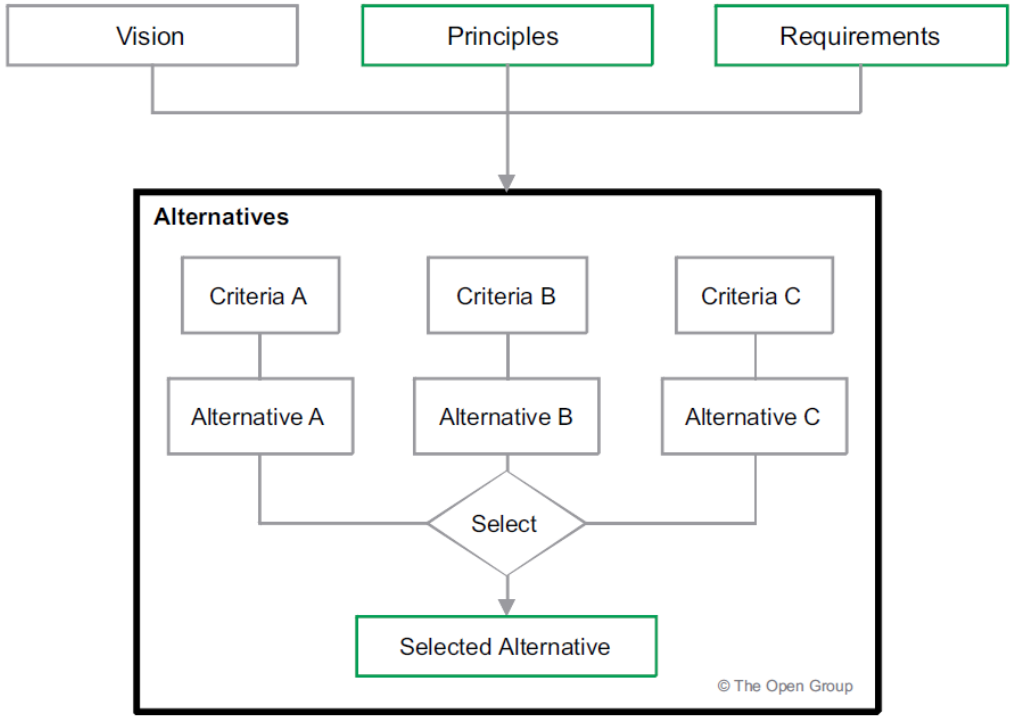
- Trade-off Analysis = compare alternatives
- Target Architecture = selected alternative

Criteria:

- Flexible
- Time
- Costs
- ROI
- Adherence
- Delivery Methods

Steps:

1. Define Criteria
2. Describe Alternative
3. Gap analysis: Baseline <-> Alternative
4. Impact Alternative:
    - Existing Architectures = EA in other states
    - Planned Implementation Projects = other EA projects
    - Enterprise Risk
5. Choose Alternative



Alternatives:

- Hidden Values
- Hidden Costs

Preliminary Phase

New EA:

- FW's
- Principles

Objectives:

- EA Capabilities: Determine & Establish
- Can be revisited during Architecture Vision phase

Inputs:

- TOGAF + other Libraries
- Non-Arch:
  - Board Strategy
  - Business plans
  - Governance FW's
  - Legal FW's
- Arch:
  - EA Organizational Model
  - Existing Architecture FW

Output:

- EA governance model
- EA trailered FW

Adapt ADM to organizational context =

- Organizational Specific FW
- Interoperability between EA FW's and Business FW's

Steps:

1. Scope the Enterprise Organization
2. Decide Governance and Support FW's
3. Define EA Team
4. Architectural Principles
5. Adapt TOGAF
6. Plan for Tools & Techniques

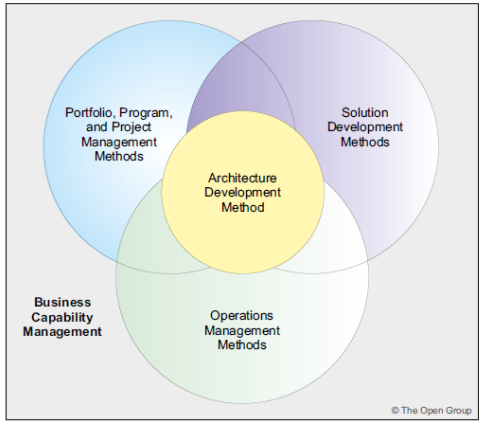
Preliminary Phase

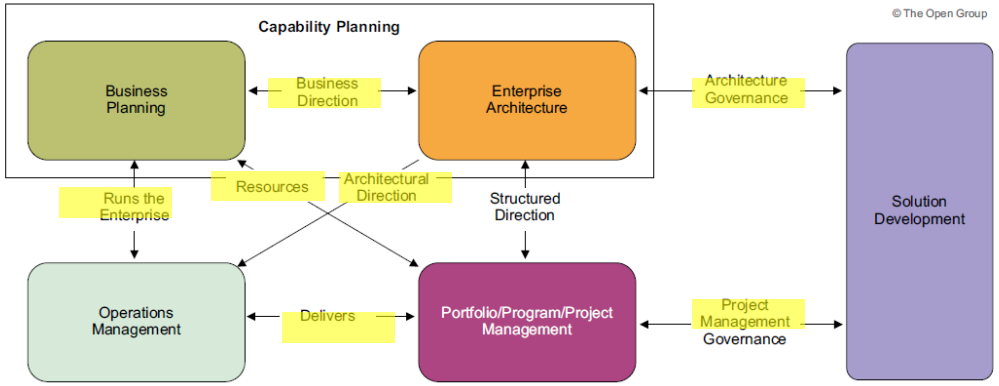
1. Scope the Enterprise Organization:

- Organizational Context: core units involved
- Define Enterprise:
  - Enterprise Scope
  - Stakeholders
  - Sponsors
- Organizational Context:
  - Culture
  - Stakeholders
  - Processes
  - Budgets
  - Plans
  - Skills & Capabilities
  - Baseline Architecture Landscape
- Business Requirements behind the Architecture Work

2. Decide Governance and FW's:

- Governance:
  - How things added to repository
  - Process
  - Decisions
- Interoperability between EA and FW's used by the Business
  - Architecture Touchpoints
- FW's:
  - Business Capability Framework = business value
    - Portfolio/Program/Project Management = change
    - Operations Management = activities
    - Solution Development Management : systems
  - Architecture Development
- Relating FW's:
  - Business Planning initial direction
  - EA structured direction
- Capability Maturity Model:
  - Factors required to run a capability





Preliminary Phase

3. Define EA Team:

- Roles & Responsibilities
- Portfolio Management

4. Architectural Principles:

- Organizational Context => Business Principles
- Business Principles
- Architecture Principles

5. Adapt TOGAF:

- Tailoring:
  - Terminology
  - Content
  - Process

6. Plan for Tools & Techniques:

- Tools:
  - Level of formality
  - Level of maturity
- Single tool vs N-tools:
  - one license / one size fits all vs.
  - N licenses / best of breads

Architecture Principles

Principle:

- Rules/Guidelines
- Enduring
- Supportive to fulfill a mission

Enterprise Principles:

- Basis for decision making
- Harmonize the way

Architecture Principles:

- Govern Architecture Process
- Develop/Maintain/Use Architecture
- Use of IT Resource & Assents

Components:

- Name
  - Essence
  - No ambiguity
- Statement:
  - Fundamental Rule
- Rational:
  - Business benefit in business terminology
  - Relationships with other principles
- Implications:
  - Requirements on IT / Business
    - Cost/Benefit
    - Resources
    - Activities

Architecture Principles

Influenced:

- Internally = strategy & plan
- External Constraints
- Current Systems & Technology
- Emerging Technology

Qualities:

- Robust
- Stable
- Complete
- Consistent

Types:

- Business Principles
- Data Principles
- Application Principles
- Technology Principles

Applying:

- Decisions
- Evaluation Criteria
- Functional Requirements
- Portfolio
- Business Value
- Key: Tasks/Resources/Cots
- Assessment

Competing Principles:

- Choose
- Document Decision & Rationale

Architecture Principles

Business Principles:

- Primacy of Principles
- Maximize Enterprise Benefit
- Information Management is Everybody's Business
- Business Continuity
  - Reliability
  - Recoverability = test recovery procedure
- Common Use of Application
  - No duplication: data consistency & resource waste
- Service Orientation
- Compliance with Law
- IT Responsibility
- Protection of IP

Data Principles:

- Data is an asset
  - Decision making requires accurate/timely data
  - Data ownership => Data stewardship
    - Responsible for the day-to-day quality
      - Accessible
      - Usable
      - Safe
      - Trusted
- Dats is shared
  - Service sharing
    - One location & Service Integration
  - Data sharing
    - Multiple locations & Data Duplication
- Data is easily accessible
  - Data CRUD
- Data Trustee
  - Accuracy of the Data
  - Currency of the Data
- Common Vocabulary and Data Definitions
- Data Security

Architecture Principles

Application Principles:

- Technology Independence
- Ease-Of-Use

Technology Principles:

- Requirements-Based Change:
    - IT change is an opportunity
    - Business change is a requirements
- Responsive Change Management
- Control Technical Diversity
- Interoperability
    - Data
    - Applications
    - Technology

A: Architecture Vision

Objectives:

- Create Vision = high-level aspirations
- Approve Vision

Inputs:

- Non-Arch:
  - Business principles, goals, drivers

Output:

- Approved State of Architecture Work (SAW)

Steps:

1. Architecture Project = create project = container
2. Stakeholder Identification = concerns & requirements
3. Business goals, drives, constraints
4. Capabilities evaluation & readiness
5. Define Scope
6. Architecture Principles
7. Define Architecture Vision
   1. Target Architecture Value
   2. Change Management = risk & activities
   3. SAW = Statement of Architecture Work

A: Architecture Vision

1. Architecture Project = create project = container
    - 1 ADM cycle = 1 project following the enterprise project management FW
2. Stakeholder Identification = concerns & requirements
    - Stakeholder Map: power / interest
    - Stakeholders:
        - Corporate Functions = CxO's
        - End-Users
        - Project organization
        - Systems Operations
        - External: Suppliers / Regulatory Bodies
    - Who?
        - Has Concerns
        - Not interest in architecture
        - Decisions Maker:
            - Timing
            - Trade-offs
            - Status
            - Budget
            - Compliance
            - Confidence
    - Identify:
        - Candidate components
        - Scope boundaries
        - Concerns
    - Communicate
        - Viewpoints
        - Views
3. Business goals, drives, constraints
4. Capabilities evaluation & readiness
    - Enterprise Capabilities = business capabilities
        - Business architecture
    - EA = architecture capabilities
        - ADM execution
            - Skills = people
            - Processes
            - Tools = technology
    - Baseline & Target Capabilities
    - Value Chain Diagrams
    - Readiness: quantify the readiness to change
5. Define Scope = what is in/out the Architecture effort
    - Breadth
    - Depth
    - Domain
    - Time
    - Assets
    - Partitioning

A: Architecture Vision

6. Architecture Principles
   - Business Principles
   - Architecture Principles
7. Define Architecture Vision
   - Develop Vision = will guide other phases
     - Policy Development
     - Strategic Decisions
   - High-level view:
     - Baseline & target
   - Business Model
     - How to drive value
       - Business capabilities
       - Values Streams
       - Organizational Maps
     - Opportunities of emerging technologies & vision
   - Business scenario's => business requirements
     - Problem
     - Environment
     - Objectives
     - Actions: human & computer
     - Roles & responsibilities
     - Refine

1. Target Architecture Value
   - Business case
     - Value
     - KPI's
     - Risks
2. Change Management = risk & activities
   - Risk levels:
     - Catastrophic
     - Critical
     - Marginal
     - Negligible
   - Risk:
     - Risk mitigation
     - Initial risk => Residual risk
3. SAW = Statement of Architecture Work
   - SAW = WBS
   - Define performance metrics for ADM cycle

Stake Holder Management

Stakeholders:

- Shape Architecture
- Win Resources
- Give Bette Understanding
- Anticipate Reactions
- Resolve Confliction Objectives

Approach:

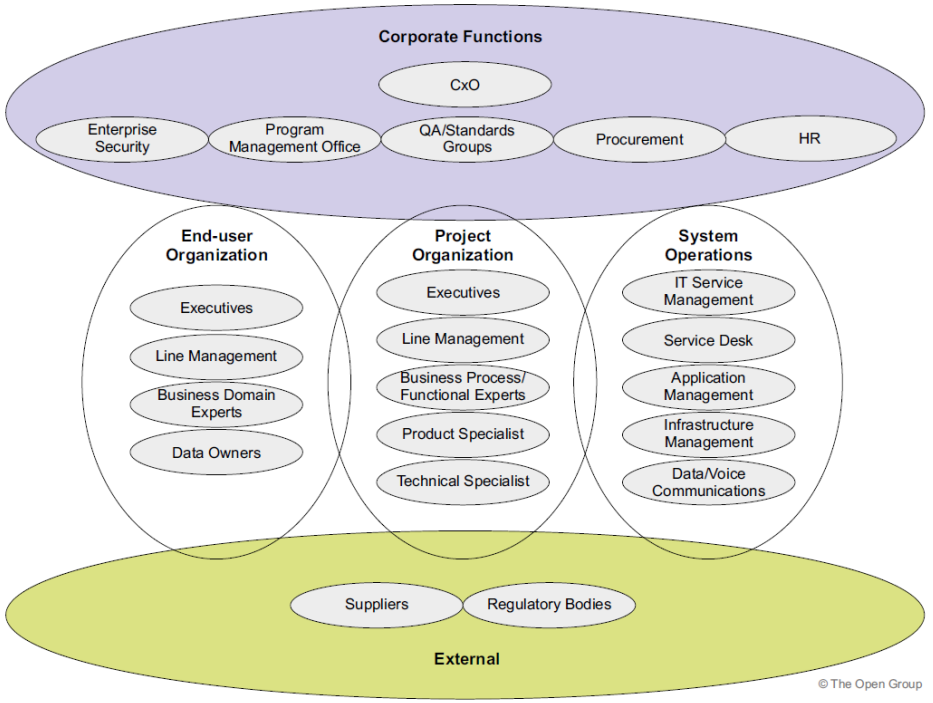
- Stakeholder
- Concern
- View
- Viewpoint

Stakeholder Management Process:

1. Identify Stakeholders
2. Classify Stakeholders
3. Determine Management
4. Tailor Deliverables

Stake Holder Management

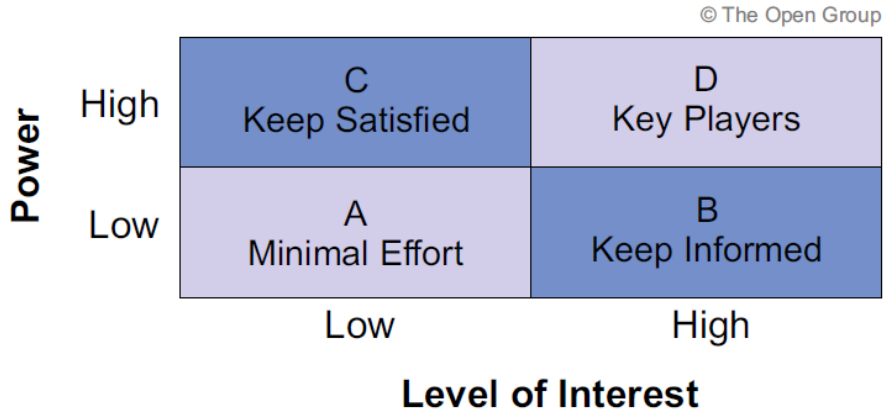
1. Identify Stakeholders
    - Who is
        - Affected
        - Has influence over
        - Power over
        - Interest in Success/Failure
    - Who
        - Controls
        - Designs
        - Decides
        - Procures
    - Analysis
        - Corporate Functions
        - End-User Organization
        - Project Organization
        - System Operations
        - External



Stake Holder Management

2. Classify Stakeholder Positions:
   - L M H
   - Ability to disrupt
   - Current / Required Understanding
   - Current / Required Commitment
   - Required Support
3. Determine Management
   - Power
   - Interest
   - Influence:
     - Keep Satisfied = CxO's
     - Keep Informed = Supporting Functions
     - Key Players = Experts Process / Data / Technology / Security

Stakeholder Group	Stakeholder	Ability to Disrupt Change	Current Under-standing	Required Under-standing	Current Commit-ment	Required Commit-ment	Required Support
CIO	John Smith	H	M	H	L	M	H
CFO	Jeff Brown	M	M	M	L	M	M



Architecture Patterns

Pattern

- Idea useful in a certain context
- Probably also useful in other contexts

Building Blocks vs Patterns

- Building Blocks
  - Proven
  - What you use
- Pattern
  - Promise
  - How you use building blocks
    - When
    - Why
    - Trade-offs

EA vs Software Architecture:

- Software Architecture Pattern =
  - high-level design pattern
  - Structural organization
  - Design Pattern = component decomposition
  - Idiom = programming code

Pattern:

- Name
- Problem
- Context = pre-condition
- Forces/Constraints = how does it affect the outcomes / goals = *-abilities
- Solution
- Resulting Context = post-condition
- Examples
- Rational = how it solves forces/constants and achieves objectives/goals
- Related Patterns
- Known Issues

Business Transformation Readiness

Readiness Factors:

1. Determine
2. Present = Maturity Model
3. Assess
4. Assess Risks

1. Determine
   - Examples:
     - Vision
     - Desire
     - Need
     - Business Case
     - Funding
     - Sponsorship & Leadership
     - Governance
     - Accountability
     - Execution Model
     - IT Capacity to Execute
     - Enterprise Capacity to Execute
     - Ability to Implement & Operate
2. Present = Maturity Model
3. Assess
4. Assess Risks

Business Transformation Readiness

2. Present = Maturity Model
    - Current Maturity Level
    - Target Maturity Level
    - Maturity Level
        - Description
        - Level: L -> H
            - Not Defined
            - Ad Hoc
            - Repeatable
            - Defined
            - Managed
            - Optimized

Business Transformation Readiness Assessment - Maturity Model					
Factor 2: Need for Enterprise Information Architecture			Class	Organizational Context	
			BTEP Readiness Factor	YES	
Definition	There is recognition by the organization that information is a strategic corporate asset requiring stewardship. There is also recognition that the data is not universally understandable, of requisite quality, and accessible.				
Maturity Model Levels					
0 Not defined	1 *Ad Hoc*	2 Repeatable	3 Defined	4 Managed	5 Optimized
Information is not recognized as an asset. There is no clear stewardship of data.	Data Management (DM) concepts are intuitively understood and practiced on an *ad hoc* basis. Stewardship of the data is informal. Data is recognized by certain internal experts and senior management as being of strategic importance to the organization. Focus is primarily on technically managing redundant data at the applications level.	Many parts of the organization value information/data as a strategic asset. Internal DM experts maintain clear lines of responsibility and stewardship of the data, organized along lines of business and at all senior levels. Staff put into practice DM principles and standards in their daily activities.	Data is recognized as a strategic asset in most parts of the organization, and throughout most levels from operations to senior management. Resources are committed to ensuring strong stewardship of data at the lower management and information expert levels.	Data is recognized as a strategic asset in all parts of the organization, and throughout most levels from operations to senior management. Resources are committed to ensuring strong stewardship of data at the senior management and information expert levels.	Data is treated in all levels throughout the organization as a strategic asset to be exploited and re-used. Data products and services are strongly integrated with the management practice of the organization. All staff are empowered and equipped to take stewardship of information, and are seen as "knowledge workers".
				Recommended Target State	

Business Transformation Readiness

3. Assess
    - Vision
        - Target State of Factor
    - Rating
        - Importance of Factor
            - Urgency
            - Readiness Status: Low -> High
                - Low
                - Fair
                - Acceptable
                - Good
                - High
            - Difficulty to Fix
    - Risks & Actions
        - Action = Implementation/Migration Plan
        - Risk = Risk Mitigation

Business Factor Assessment Summary				
Ser	**Readiness Factor**	**Urgency**	**Readiness Status**	**Degree of Difficulty to Fix**
1	Vision			
2	Desire/willingness/resolve			
3	Need			
4	Business case			
5	Funding			
6	Sponsorship and leadership			
7	Governance			
8	Accountability			
9	Workable approach and execution model			
10	IT capacity to execute			
11	Departmental capacity to execute			
12	Ability to implement and operate			

Goals

Importance / Accessibility (Obtainability)

Goal Catalog:

- Name
- Description
- Kind: goals / objective
- Global: enterprise / local
- Type: qualitative / quantitative
- Required level of satisfaction: evaluated / firm
- Unit of measurement
- Target Value
- Current Value
- Problems: obstacles
- Source: origin of goal

B: Business Architecture

Objectives:

- Target Business Architecture
  - Operate: business goals
  - Respond: strategic driver in Architecture Vison
  - Follow: SAW & Stakeholder Concerns
- Roadmap:
  - Gaps
  - Baseline => Target

Inputs:

- Non-Arch:
  - Request for Architecture Work
- Arch:
  - EA Organizational Model
  - Architecture FW
  - Architecture Vision

Outputs:

- Draft Architecture Definition
- Draft Architecture Requirements Specification
- Business Services/Products

EA for:

- New Business
- Existing Business

Steps:

1. Select: model, viewpoints and tools
2. Baseline
3. Target
4. Gap Analysis
5. Candidate Roadmap
6. Resolve Impacts
7. Stakeholder Approval
8. Finalize Business Architecture
9. Update Architecture Definition document

B: Business Architecture

1. Select: model, viewpoints and tools
    - Select from Architecture Repository
    - Identify appropriate tools & techniques
        - Catalogs
        - Matrices
        - Diagrams
    - Techniques:
        - Business Capability Mapping
        - Information Mapping
        - Organization Mapping = Org. Structure
        - Process Modelling
        - Use-Case Analysis
        - Value Stream Mapping
    - Business Scenarios:
        - Business Requirements => Technical Requirements

- Business Model:
    - Missing Business Capabilities
    - New Values Streams
    - Changes to organizational units
- Business Capabilities Map:
    - Heat map each capability of business
        - Effectiveness
        - Performance
        - Value
- Value Stream:
    - Stages in value streams => Business Capabilities

B: Business Architecture

- Organizational Mapping:
  - Organizational Units + hierarchical structure + relationships
- Information Maps
  - Domains = Major information Entities
  - Relationships between entities
- Modeling:
  - Activity Models: BPMN
    - BPMN
    - ICOMS =
      - Input
      - Controls
      - Output
      - Mechanism/Resources
  - Use-Case Models
  - Logical Data Model: Class Diagram

Gap Analysis

Gap

- Shortfall between Baseline and Target Architecture

Type of Gaps

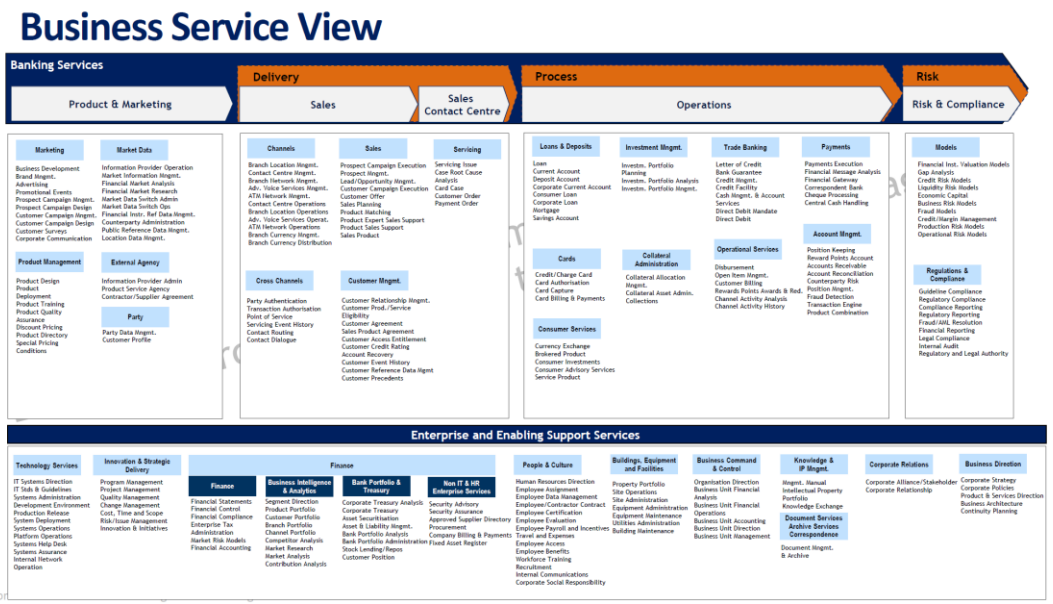
- Business Domain Gaps
- Data Domain Gaps
- Application Impacted
- Technology Impacted

Managing Gaps:

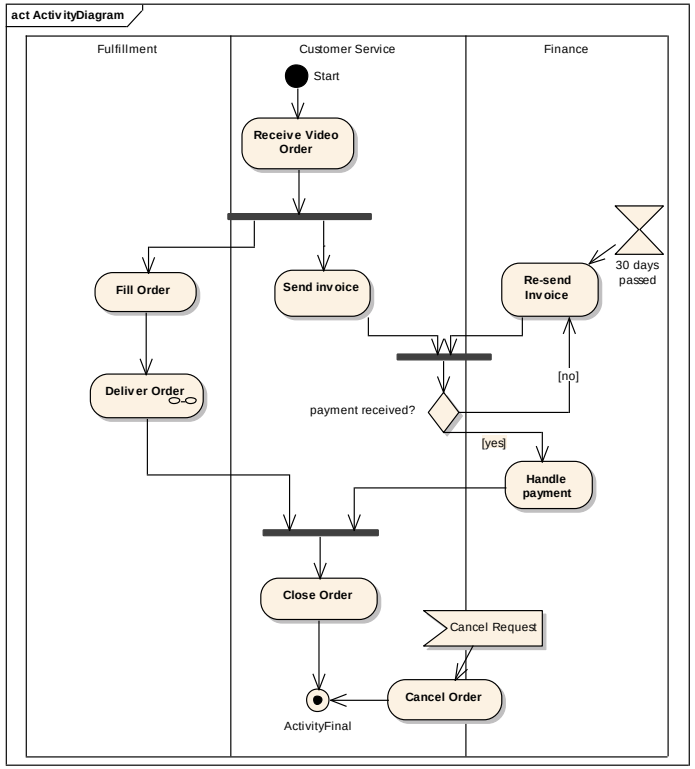
- ABB Matrix
- Baseline vs Target ABB:
  - New Services
  - Eliminated Services
  - Included/Matched Services

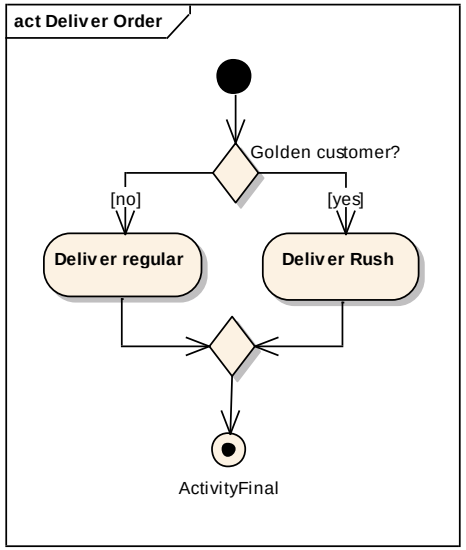
Target Architecture → / Baseline Architecture ↓	Video Conferencing Services	Enhanced Telephony Services	Mailing List Services	Eliminated Services ↓
Broadcast Services				Intentionally eliminated
Video Conferencing Services	Included			
Enhanced Telephony Services		Potential match		
Shared Screen Services				Unintentionally excluded - a gap in Target Architecture
New →		Gap: Enhanced services to be developed or produced	Gap: To be developed or produced	

Business Services



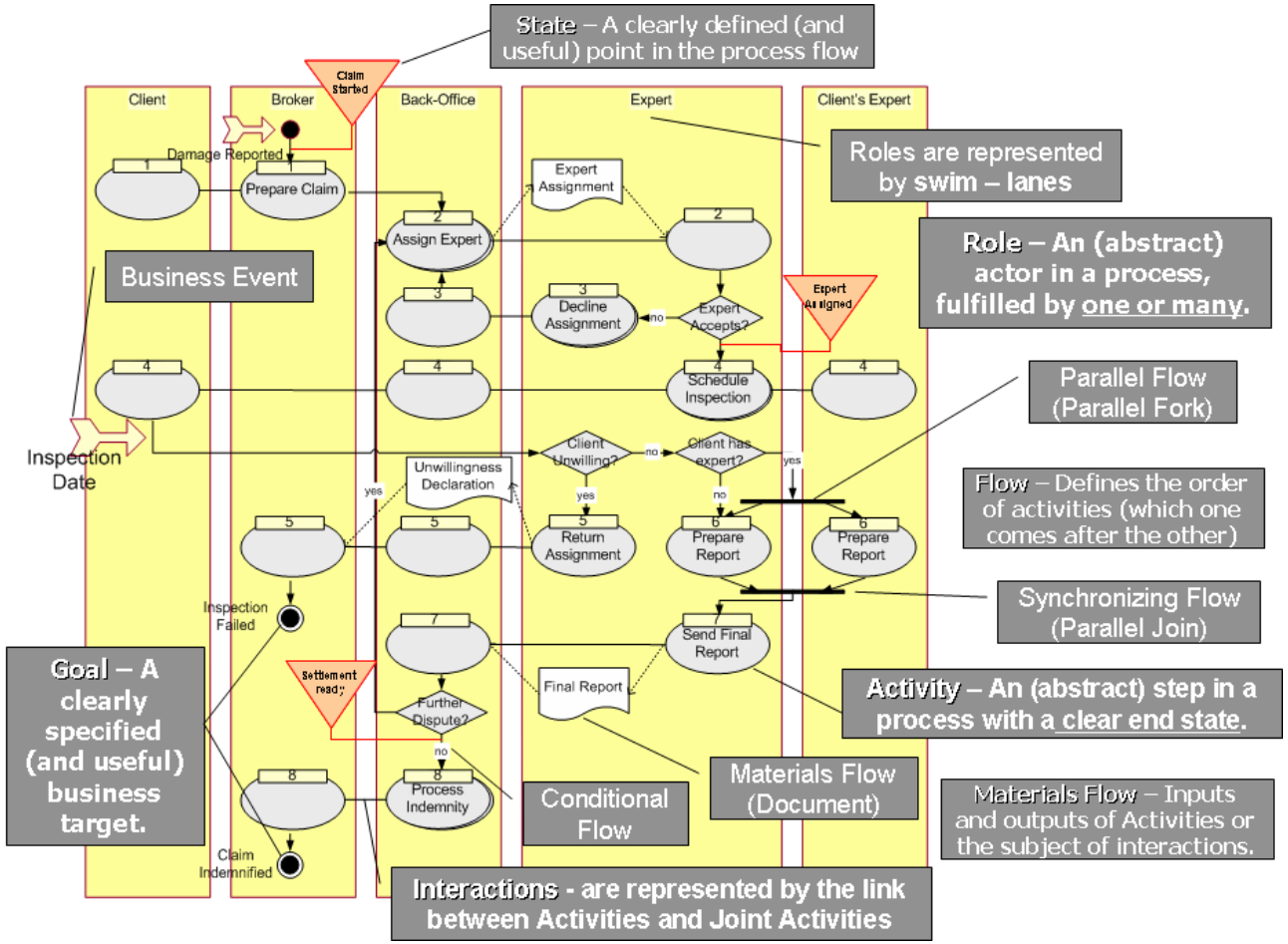
Activity Diagram

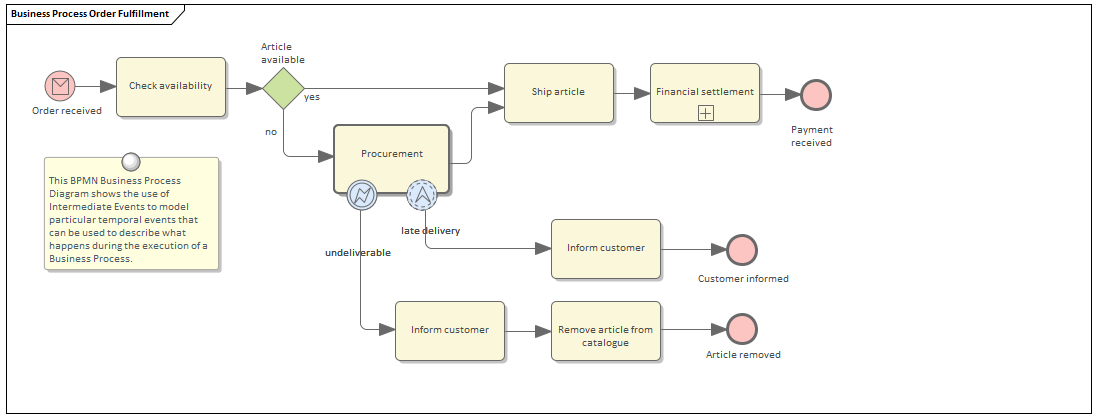




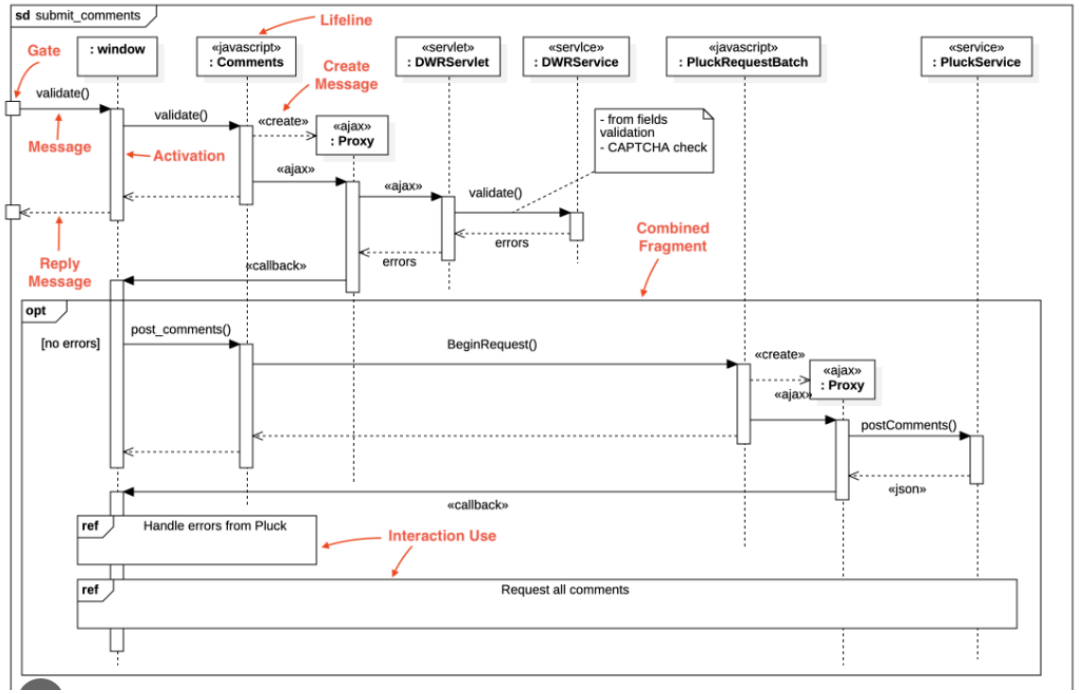
Role	Swimlane	Fulfillment / Customer Service	
Activity	Activity	Receive Video Order	
	Structured activity	Deliver Order	Double clicking on this node will bring you to the activity diagram of this structured activity
Decision	Decision node	Golden customer? [no] [yes]	
Trigger	Receive	30 days passed; Cancel Request	You can have trigger based on time or based on receiving a signal.
Start	Initial	Start	
End	Final	ActivityFinal	
	Fork		
	Join		

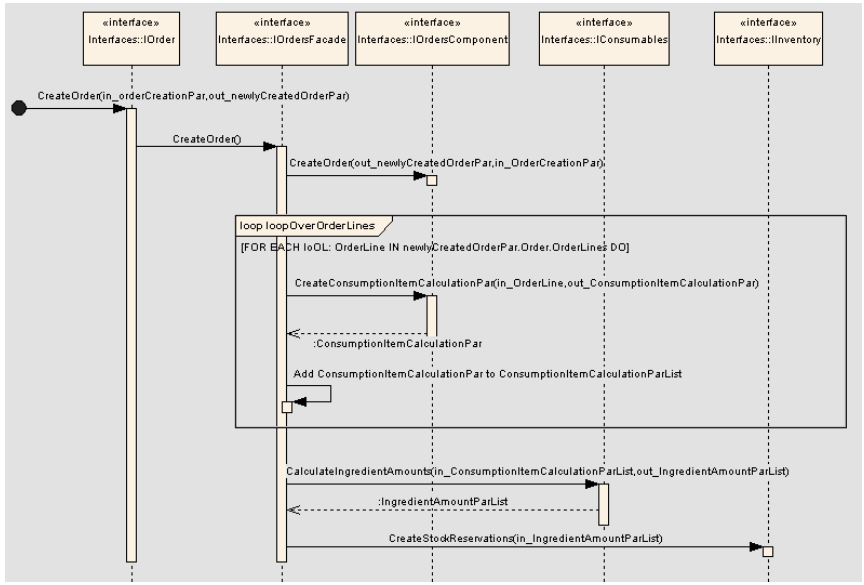
Process Model

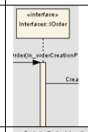
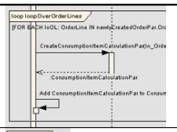
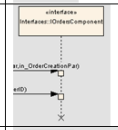
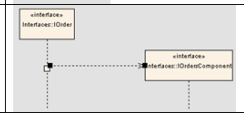




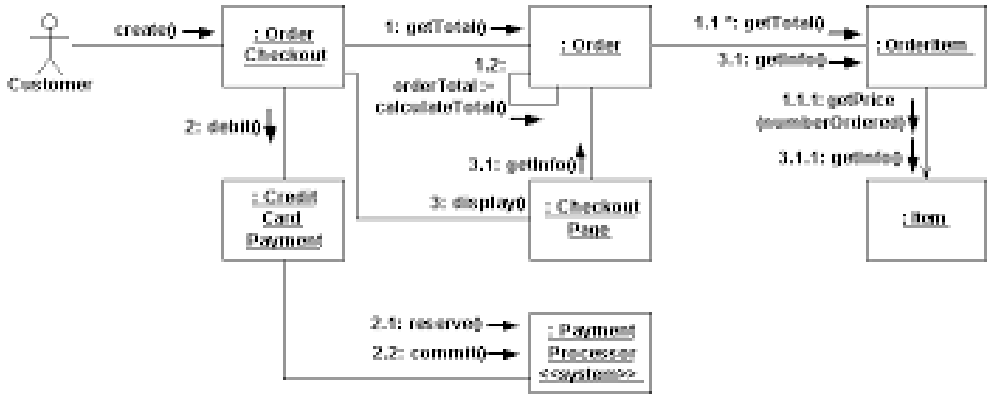
Sequence Diagram





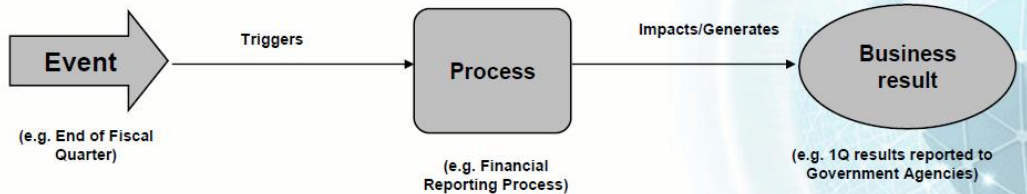
EA Element	Visualization	Comment
End Point		Often used as Start Point
Lifeline		
Message		Can be synchronous or assynchronous
Return Message		Set "*is return*" to TRUE
Fragments		Several types of fragments exists: loop, opt, alt, … Select the type in the *combined fragment* dialog box
Self Message		
Delete (lifecycle)		Select Control Flow Type → Lifecycle = "delete"
Create (lifecycle)		Select Control Flow Type → Lifecycle = "new"

Collaboration Diagram



Event Diagram

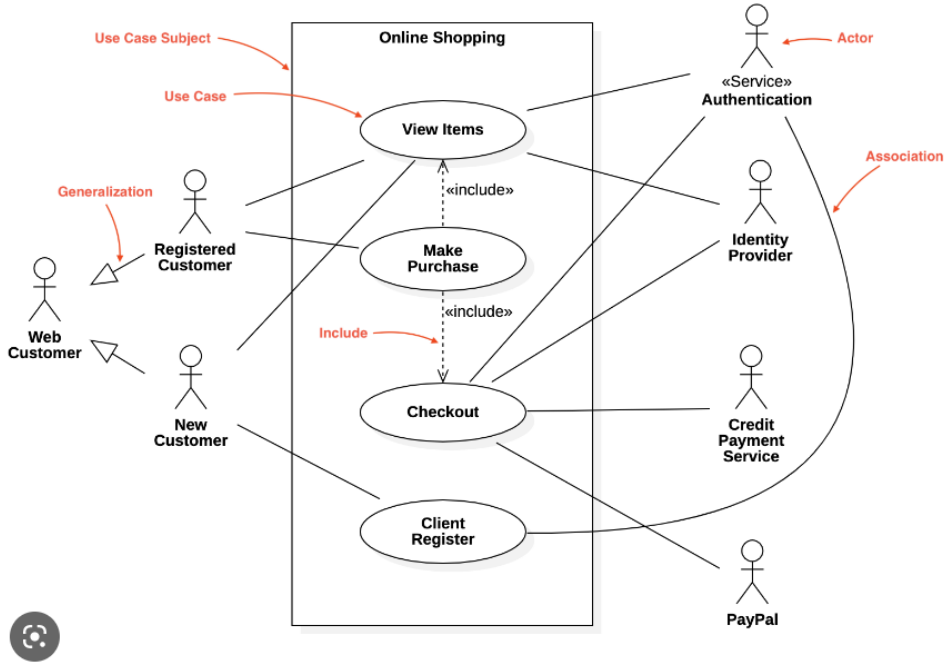
Example Events Diagram

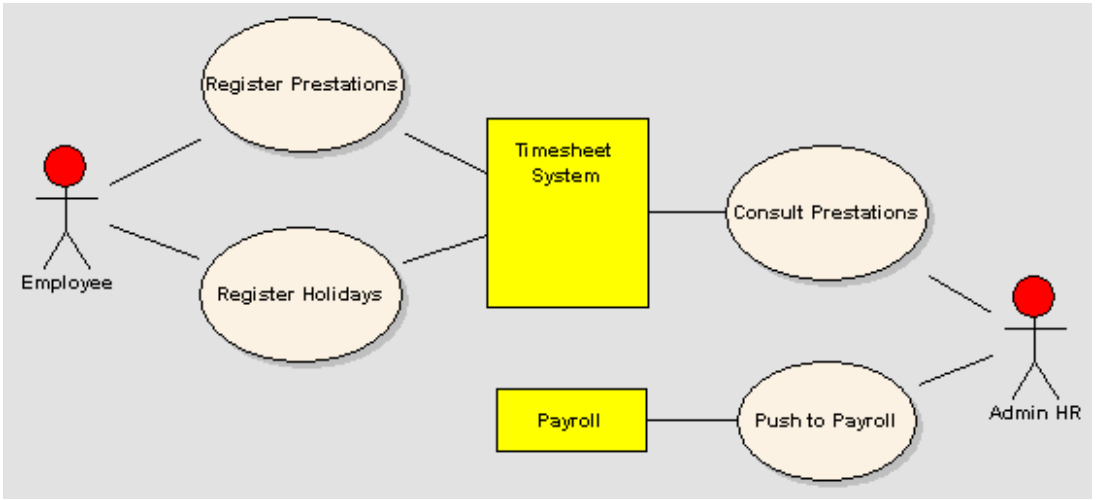


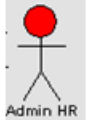
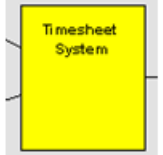
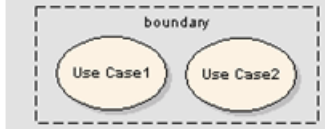
Example Events Matrix

EVENT	PROCESS TRIGGERED	BUSINESS RESULT(S)
Customer submits sales order	Sales order processing ▪ Create & save sales order ▪ Generate acknowledgement ▪ Confirm receipt of customer order ▪ Begin order fulfillment activities	▪ Sales order captured in order book
Customer submits request for custom product	Custom product configuration ▪ Capture requirements from customer ▪ Define custom specifications ▪ Price custom configuration ▪ Negotiate with customer ▪ Secure approval from customer regarding configuration and price	▪ Custom product configured ▪ Customer contract signed
End of quarter	Financial reporting process	▪ Financial report generated

Use Case Diagram





Use case		
Actor		
Part		
Associate		
Include		Not advisable to use in AE projects
Boundary		To group certain elements together

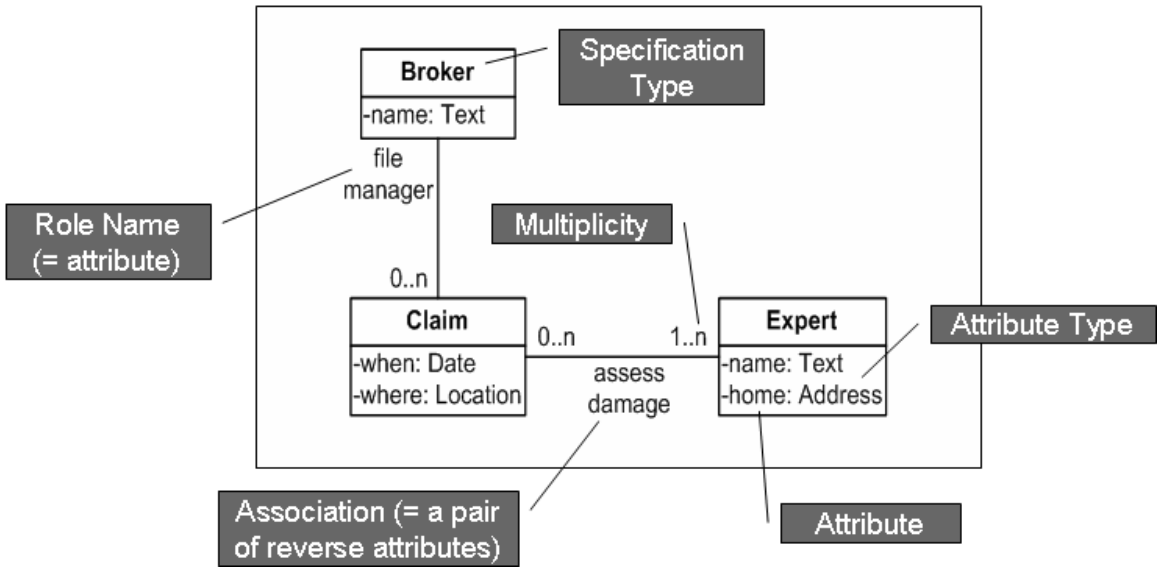
ACTOR/Role RACI

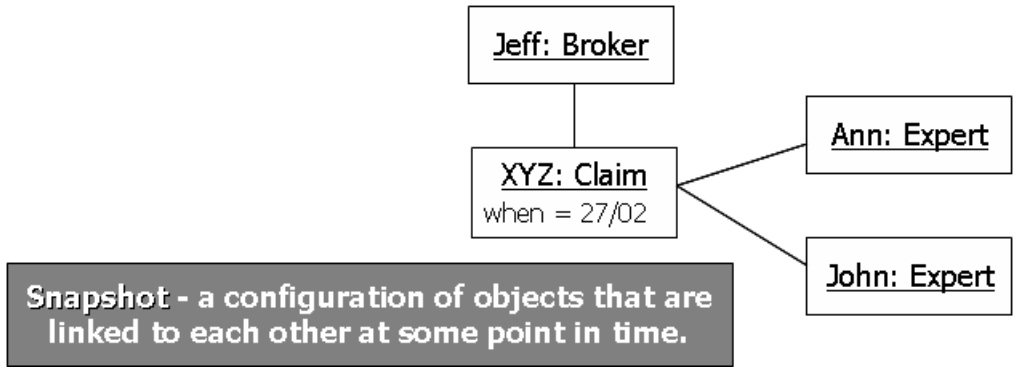
Actor/role Matrix

- This matrix show which actors perform which roles, supporting definition of security and skills requirements.

	Office of CIO Actors		Steering Group Actors			Business Unit Actors			Strategy and Architecture Actors					Infrastructure Implementation Actors				
R = Responsible for carrying out the role A = Accountable for actors carrying out the role C = Consulted in carrying out the role I = Informed in carrying out the role	CIO	Enterprise Architect	Enterprise Design Authority	Technical Design Authority	IT Management Forum	Business Unit Head	Business Unit Service Owner	Business Unit Application Architect	Head of Strategy and Architecture	Infrastructure Strategist	Infrastructure Solution Architect	Architecture Configuration Mgr	Enterprise Infrastructure Architect	Head of Implementation	Infrastructure Designer	IT Operations	Project Manager	External Vendors / Suppliers
Strategy Lifecycle Roles																		
Architecture Refresh	I	R	A	I	C	C	R	C	C	C	I	I	R	I		C		C
Architecture Roadmap	I	C	A	I	R	C	C	I	C	R	I	I	R	C		C	I	C
Benefits Assessment	I	I	I	I	I	I	I		I	I	R		R	I		C	A	
Change Management		C		I	A	I	I	I	R	I	I	I	R	R		C		
Framework Refresh		C	C	C	C	C	I	C	A	I	I	I	R	C		C	I	
Project Lifecycle Roles																		
Solution Architecture Vision	I	I	I	A	I	I	C	C	I	I	R	I	C			C	R	
Logical Solution Architecture				A	I	I	C	C	I	I	R	I	C		C	C	R	
Physical Solution Architecture				A	I	I	C	C	I	I	R	I	C		R	C	R	
Design Governance				A	I	I	C	C	I	I	R	I	C		R	C	C	
Architecture Configuration Management				C					I	I	R	R	R				A	

Information Model – Logical Data Model





C: Information Systems Architecture

Objectives:

- Target Information Systems Architecture in line with
  - Architecture Vision
  - Business Architecture
- Contains:
  - Data Architecture
  - Application Architecture
- Roadmap

- Packaged Solutions
  - Like CRM/ERP
  - Often combine data & application architecture and technology architecture

C: Information Systems Architecture – Data Architecture

Objectives:

- Target Data Architecture in line with
  - Architecture Vision
  - Business Architecture
- Roadmap

Inputs:

- Arch:
  - Data Principles
  - Data Architecture Requirements Specifications
  - Business Architecture Components
  - Architecture Roadmap

Outputs:

- Draft Architecture Definition
- Draft Architecture Requirements Specification

Steps:

1. Select: model, viewpoints and tools
2. Baseline
3. Target
4. Gap Analysis
5. Candidate Roadmap
6. Resolve Impacts
7. Stakeholder Approval
8. Finalize Business Architecture
9. Update Architecture Definition document

C: Information Systems Architecture – Data Architecture

1. Select: model, viewpoints and tools
    - Data:
        - Time Dimension = real-time, event driven
        - Location Dimension = business process
    - Data Type:
        - Enterprise Level Data
        - Local-Level Data = personal DB's & Spreadsheets
    - Modelling:
        - ER-Diagram
        - Class Diagram
    - Data Architecture:
        - Creation
        - Distribution
        - Migration
        - Security
        - Archiving … of Data
    - Date Entity => Logical Data Component => Physicial Data Component
        - Data Entities = ER
        - Logical Data = ER + Attributes
        - Physical Data = Table definition model
    - Data Structure:
        - Data in Rest
        - Data in Motion = Transit
        - Data in Use
        - Open Data
    - Data Migration:
        - ETL
        - ELT

9. Update Architecture Definition document
    - Business Data Model
    - Logical Data Model
    - Data Management Process Model
    - Data Entity/Business Function Matrix
        - Which BU owns/stores data
    - Data Interoperability Requirements

C: Information Systems Architecture – Application Architecture

Objectives:

- Target Data Architecture in line with
  - Architecture Vision
  - Business Architecture
- Roadmap

Inputs:

- Arch:
  - Application Principles
  - Data Architecture Requirements Specifications
  - Business and Data Architecture Components

Outputs:

- Draft Architecture Definition
- Draft Architecture Requirements Specification

Steps:

1. Select: model, viewpoints and tools
2. Baseline
3. Target
4. Gap Analysis
5. Candidate Roadmap
6. Resolve Impacts
7. Stakeholder Approval
8. Finalize Business Architecture
9. Update Architecture Definition document

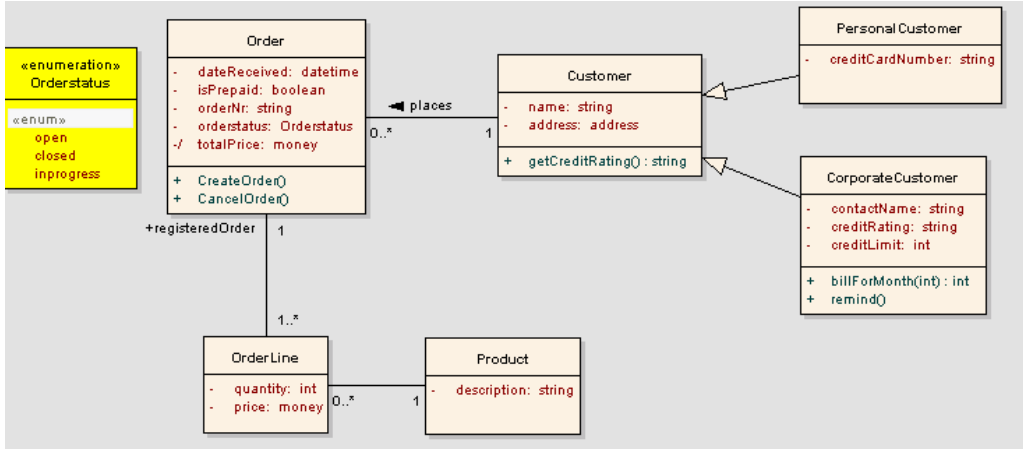
C: Information Systems Architecture – Data Architecture

1. Select: model, viewpoints and tools
   - MDA = Model Driven Architecture
     - Platform independent description of business logic
   - Application Portfolio => Applications => Application Components
     - Logical Applications
     - Physical Applications
   - Logical Application Component -> Physical Application Component => Application Service
     - Generic Business Models
     - Application Models
   - Requirements:
     - Mapping Business Services => Application
     - User & Organizational dependencies on Applications
   - COTS:
     - Configuration
     - Modules
     - Application Services
   - Custom:
     - Modules
     - Sub-Systems

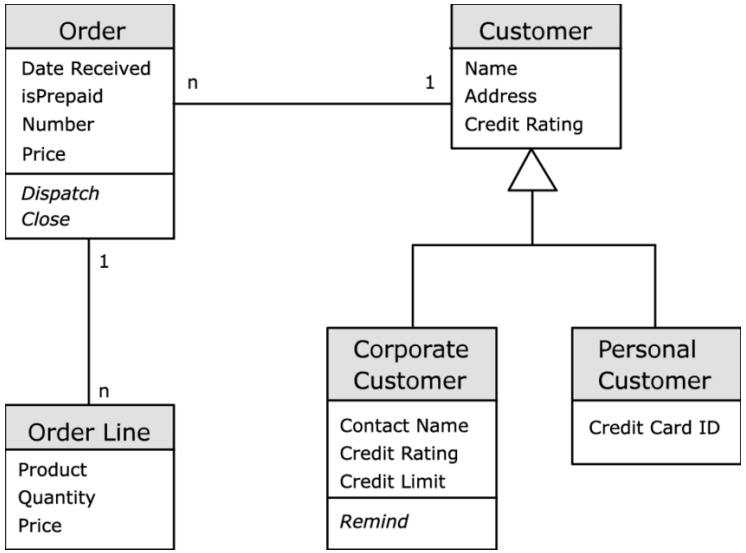
2. Baseline
   - Application Portfolio Catalog

9. Update Architecture Definition document
   - Business Data Model
   - Logical Data Model
   - Data Management Process Model
   - Data Entity/Business Function Matrix
     - Which BU owns/stores data
   - Data Interoperability Requirements

Class Diagram

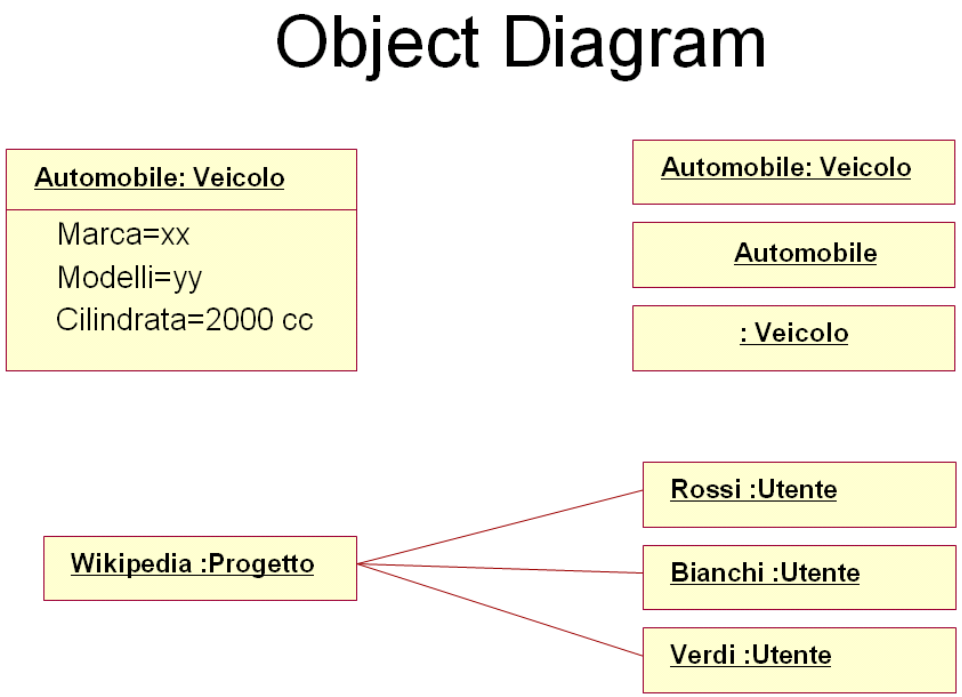


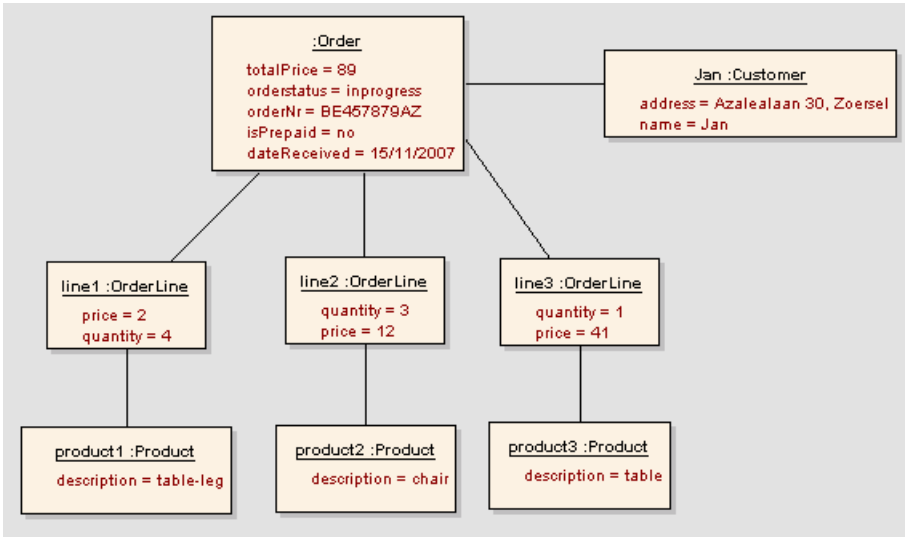
EA Element	Visualization	Comment
Class		
Interface		
Enumeration		
Associate		
Generalize		



Association class		
Compose		
Aggregate		
Attribute		
Operation		Not always drawn on class level
Object		When you paste a class to a diagram as an instance of that class

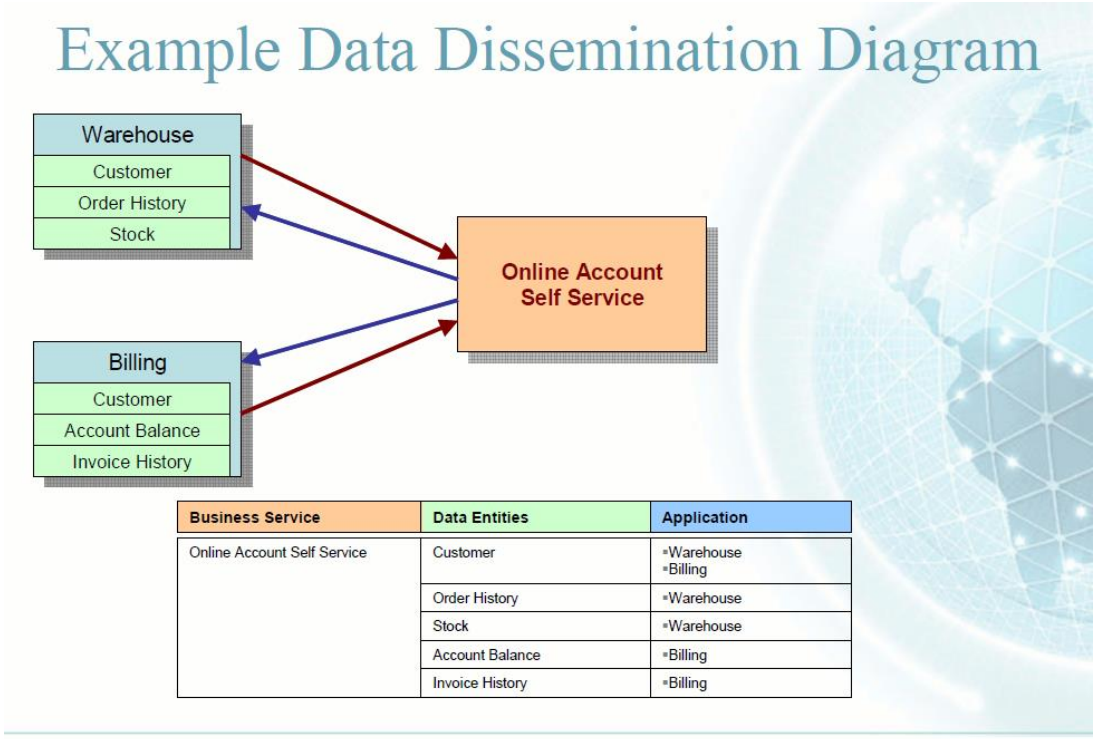
Object Diagram





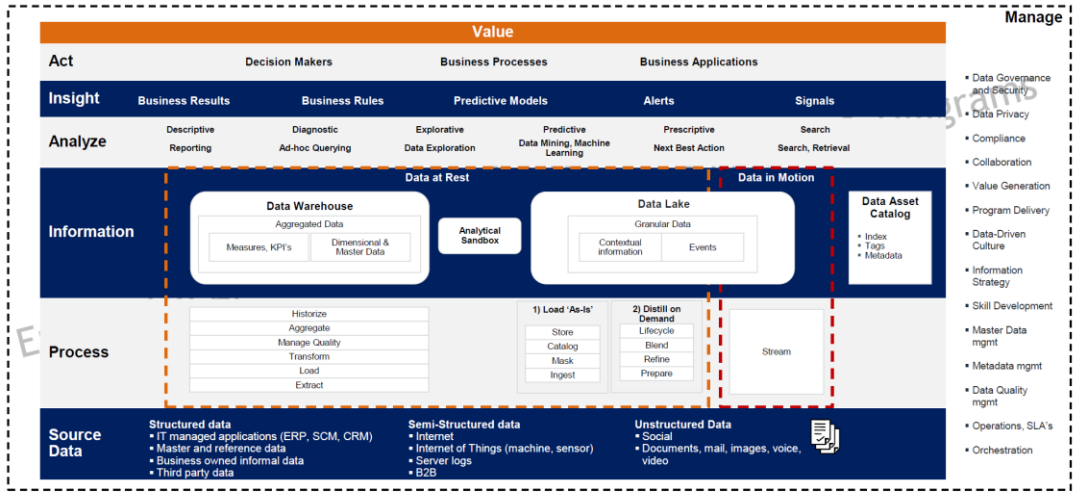
EA Element	Visualization	Comment
Object	Jan :Customer address = Azalealaan 30, Zoersel name = Jan	
Association	line3 :OrderLine quantity = 1 price = 41 product3 :Product description = table	No multiplicity is shown here →comes from the class diagram

Data Dissemination Diagram



Business Service	Data Entities	Application
Online Account Self Service	Customer	▪Warehouse ▪Billing
	Order History	▪Warehouse
	Stock	▪Warehouse
	Account Balance	▪Billing
	Invoice History	▪Billing

Information Requirements



Interoperability Requirements

Interoperability

- Ability to share:
  - Information = data
  - Services

Types:

- Business Interoperability = process
- Information Interoperability = information
- Technical Interoperability = services
- EAI
  - Presentation = look & feel
  - Information = share information
  - Application = functionality / workflow
  - Technical = methods / services

Operation Model:

- Standardization = data
- Integration = processes
- SMART definition

Degree:

1. Unstructured Data Exchange
2. Structured Data Exchange
3. Seamless Sharing of Dara
4. Seamless Sharing of Information

A. Formal Message

B. Common Data

C. Complete Data

D. Real-Time Information

SBB vs COTS:

- COTS have own embedded business processes:
- changing embedded processes: work > benefit

Interoperability Requirements

Phase B: Inter-stakeholder Information Interoperability Requirements (Using degrees of information interoperability)							
Stakeholders	A	B	C	D	E	F	G
A		2	3	2	3	3	3
B	2		3	2	3	2	2
C	3	3		2	2	2	3
D	2	2	2		3	3	3
E	4	4	2	3		3	3
F	4	4	2	3	3		2
G	2	2	3	3	3	3	

Phase C: Inter-system Interoperability Requirements							
	System A	System B	System C	System D	System E	System F	System G
System A		2A	3D	2B	3A	3A	3B
System B	2E		3F	2C	3A	2B	2C
System C	3E	3F		2B	2A	2A	3B
System D	2B	2B	2B		3A	3A	3B
System E	4A	4B	2B	3A		3B	3B
System F	4A	4A	2B	3B	3A		2D
System G	2B	2B	3A	3A	3B	3B	

Stakeholder Requires from Stakeholder

D: Technology Architecture

Objectives:

- Target Data Architecture in line with
  - Architecture Vision
  - Business Architecture
  - Data Architecture
  - Application Architecture
- Roadmap

Inputs:

- Arch:
  - Technology Principles
  - Data Architecture Requirements Specifications
  - Business, Data and Application Architecture Components

Outputs:

- Technology Components linked with Information Systems
- Technology Stack
- Environments & Locations
- Processing Load & Distribution
- Physical: network, HW, SW
- Draft Architecture Definition

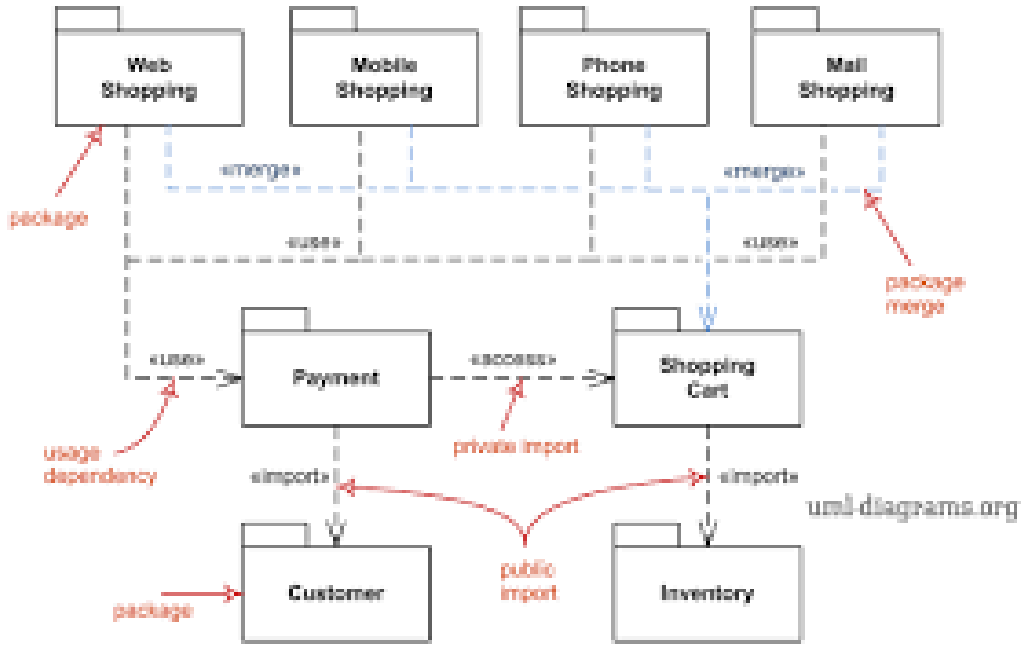
Steps:

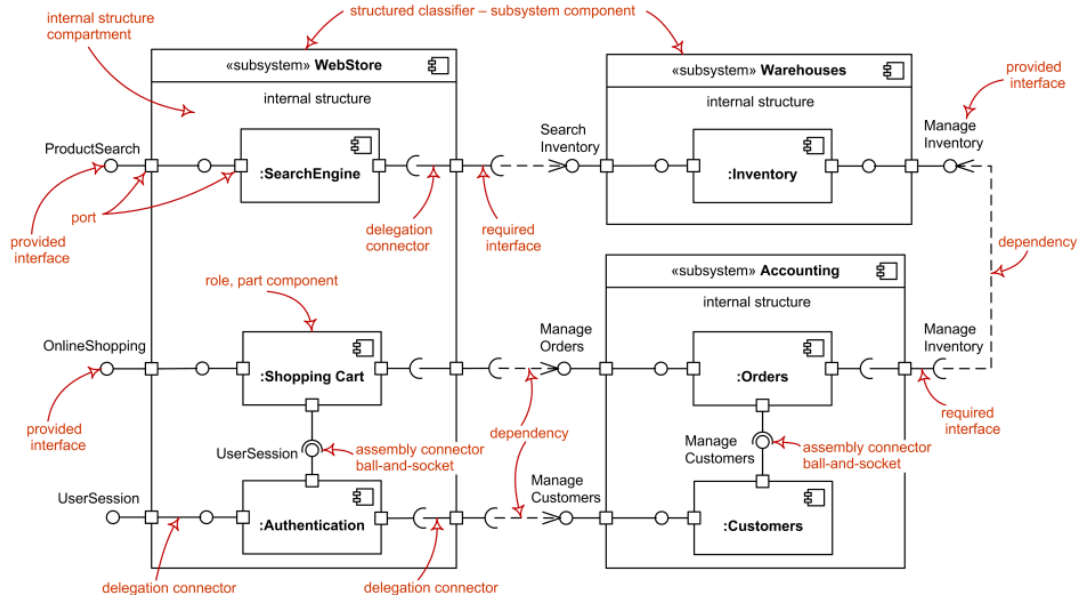
1. Select: model, viewpoints and tools
2. Baseline
3. Target
4. Gap Analysis
5. Candidate Roadmap
6. Resolve Impacts
7. Stakeholder Approval
8. Finalize Business Architecture
9. Update Architecture Definition document

D: Technology Architecture

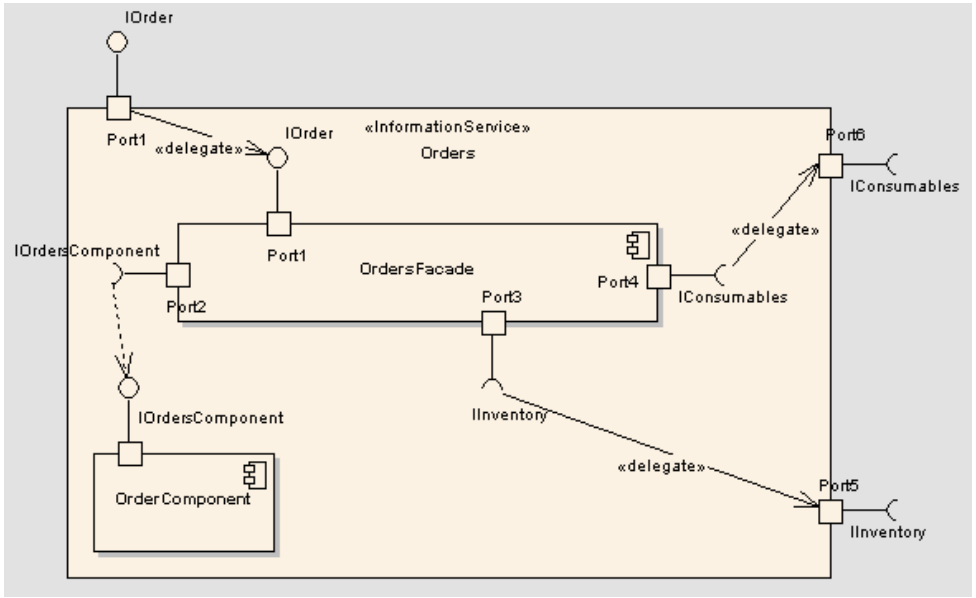
1. Select: model, viewpoints and tools
   - Technology Services Taxonomy
   - Physical inventory of deployed technology
     - Sizing & Costs
     - Capacity Planning
     - Governance
   - Configuration of components
   - Abilities:
     - Performance
     - Maintainability
     - Location & Latency
     - Availability
   - Emerging Technologies: drivers for change
   - Product Selection Process
     - Extend Product list: find existing products meeting requirements
   - Technology Stack Diagram
     - HW
     - OS
     - Infrastructure
     - Packaged Applications
   - Technology Service => Logical Technology Component => Physical Technology Component
     - Logical diagram: HW & SW
     - Physical diagram: communication infrastructure
   - Repository:
     - Common Systems Architecture
2. Baseline
   - Technology Portfolio Catalog
   - Technology Reference Model = TRM
3. Target
   - Architectural Building Blocks = ABB's
9. Update Architecture Definition document
   - Business Data Model
   - Logical Data Model
   - Data Management Process Model
   - Data Entity/Business Function Matrix
     - Which BU owns/stores data
   - Data Interoperability Requirements

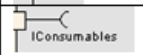
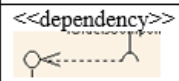
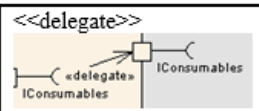
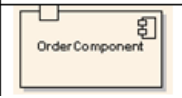
Package Diagram





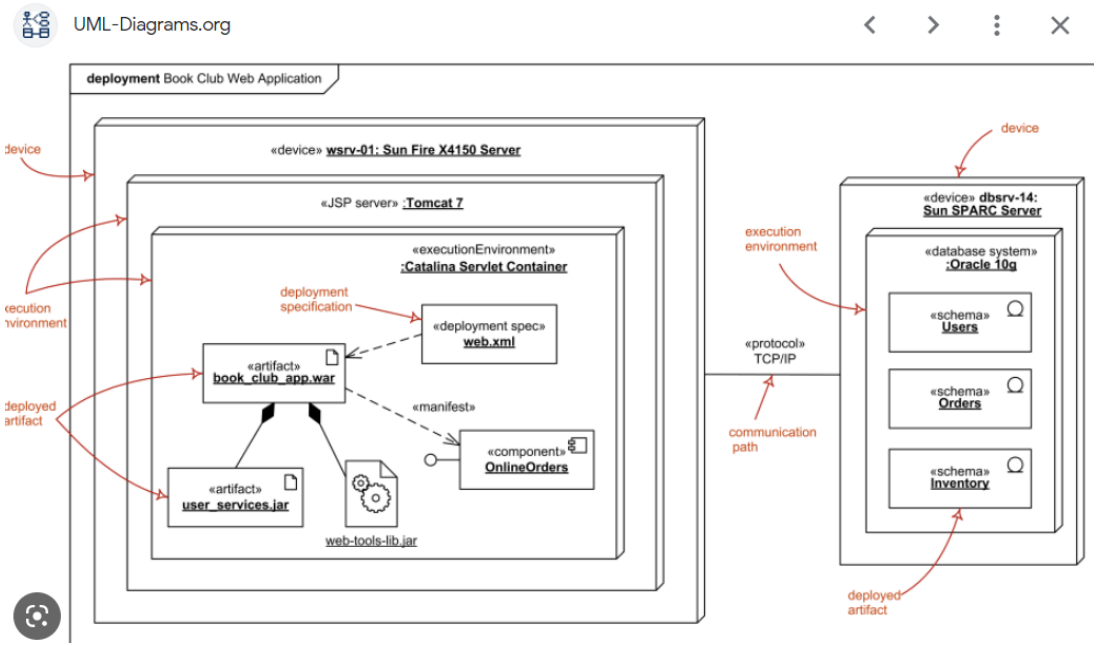
Package Diagram

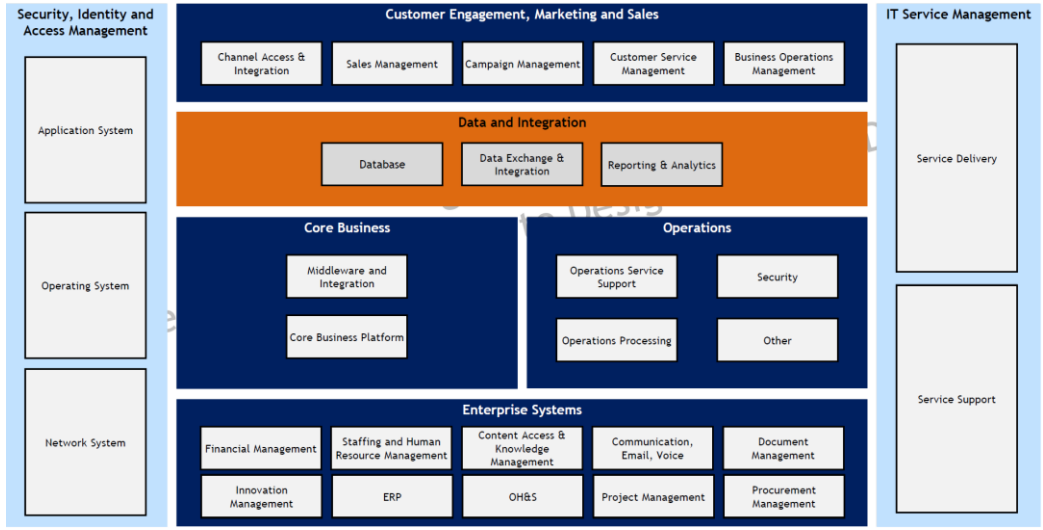


Part		
Port		See Note!
Interface		
Provided Interface		See Note!
Required Interface		See Note!
Connector		*Dependency* = from required interface to provided interface
		*Delegate* = from required (provided) interface to required (provided) interface
Component		From the component toolbox

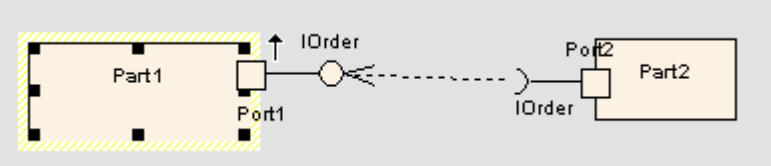
Deployment Diagram

H-Model
- SoInteraction
- SoIntelligence
- SoRef
- SoRe
- Cross Functional
- Operations





Interface Diagram



Interface	«interface» Interface2 or Interface2	
Operations	«interface» IOrder CancelOrder() CreateOrder() UpdateOrder()	
Required interface	IOrder	
Provided Interface	IOrder	

E: Opportunities & Solutions

Objectives:

- Initial version of complete Architecture Roadmap
  - Combine Gap Analysis
    - Business (B)
    - Data/Apps (C)
    - Technology (D)
  - Incremental Approach
- Target Architecture
  - Select Solution Building Blocks
  - Using Architecture Building Blocks

Inputs:

- Arch:
  - Architecture Vision
  - Draft Architecture Requirements Specification
  - Candidate Architecture Roadmap

Outputs:

- Implementation Portfolio
- Work Package Portfolio
- Transition Architectures
- Implementation & Migration Strategy

Steps:

1. Corporate Change Attributes
2. Business Constraints
3. Consolidate Gap Analysis
4. Consolidate Requirements
5. Consolidate Interoperability Requirements
6. Dependencies
7. Risk & Readiness
8. Migration and Implementation Strategy
9. Major Work Packages
10. Transition Architecture
11. Roadmap

E: Opportunities & Solutions

1. Corporate Change Attributes
   - Implementation Factor Catalog: how to migration => in line with corporate culture
   - Repository of implementation & migration decisions
2. Business Constraints
3. Consolidate Gap Analysis
   - SBB to address the gaps and associated ABB
4. Consolidate Requirements
5. Consolidate Interoperability Requirements
   - Interoperability
     - SBB
     - COTS
     - 3rd Party
   - Transform & Translate between SBB's
6. Dependencies
7. Risk & Readiness
8. Migration and Implementation Strategy
   - Implementation Strategy
     - Greenfield
     - Revolutionary
     - Evolutionary
   - Implementation Methodology:
     - Quick Win
     - Achievable Targets
     - Value Chain Method
9. Major Work Packages
   - Gaps – Solution – Dependency Matrix
   - Current System Classification
     - Mainstream = part of the current system
     - Contain = soon to be replaced
     - Replace = to be replaced in the planning horizon
     - Transition
10. Transition Architecture
    - Baseline Architecture => Target Architecture
      N transition Architectures
11. Roadmap
    - Work Packages = set of actions
    - Planning = time frame

F: Migration Planning

Objectives:

- From
  - Implementation & Migration **Strategy**
  - Roadmap
- To
  - Integration & Migration **Plan**
- Stakeholders understand Work Packages
  - Costs
  - Benefits = Value

Inputs:

- Arch:
  - Business Planning
  - Portfolio/Program/Project Management
  - Change Requests for ongoing Projects/Programs

Outputs:

- Project Charter
- Final Architecture Definition
- Final Architecture Requirements Specification
- Final Roadmap

Steps:

1. Management FW Interactions
2. Business Value of Work Packages
3. Estimate Resources/Timings/Vehicle
4. Project Planning: priority & risk
5. Confirm Roadmap
6. Complete Plan
7. Complete ADM cycle & lessons Learned

F: Migration Planning

Steps:

1. Management FW Interactions
    - Coordination => Enterprise Continuum
        - Business Planning
        - EA
        - Product/Portfolio Management
        - Operations Management
2. Business Value of Work Packages
    - Criteria
        - Performance
        - ROI
        - Business Value
        - Critical Success Factors (CSF's)
        - Measure of Effectiveness (MOE)
        - Strategic Fit
    - Work Packages => Implementation Projects
3. Estimate Resources/Timings/Vehicle
    - Costs:
        - Capital = create a capability
        - Operations = operate a capability
        - Maintenance = sustain a capability
4. Project Planning: priority & risk
    - Prioritization:
        - Business Value
        - Risk Mitigation
5. Confirm Roadmap
    - Transition Architecture State Evolution Table
6. Complete Plan
7. Complete ADM cycle & lessons Learned

Migration Planning Techniques

5 Techniques:

1. Factor Catalog
2. Gaps-Solutions-Dependencies Matrix
3. Architecture Definition Increments Table
4. Transition Architecture State Evolution Table
5. Business Value Assessment

Implementation Factor Catalog		
Factor	**Description**	**Deduction**
<Name of Factor>	<Description of Factor>	<Impact on Migration Plan>
Change in Technology	Shut down the message centers, saving 700 personnel, and have them replaced by email.	• Need for personnel training, re-assignment • Email has major personnel savings and should be given priority
Consolidation of Services		
Introduction of New Customer Service		

1. Factor Catalog = RI^2A^2D

- Factor
- Description
- Deduction

Factors:

- Risks
- Issues
- Impacts
- Assumptions
- Actions
- Dependencies

Migration Planning Techniques

2. Gaps-Solutions-Dependencies Matrix

Architecture:

- Business
- Application
- Information

Consolidated Gaps, Solutions, and Dependencies Matrix				
No.	**Architecture**	**Gap**	**Potential Solutions**	**Dependencies**
1	Business	New Order Processing Process	Use COTS software tool process Implement custom solution	Drives applications (2)
2	Application	New Order Processing Application	COTS software tool X Develop in-house	
3	Information	Consolidated Customer Information Base	Use COTS customer base Develop customer data mart	

3. Architecture Definition Increments Table

- Transition Architecture 1 .. N
- Project 1 .. N

Architecture Definition - Project Objectives by Increment (Example Only)				
	April 2018/2019	**April 2019/2020**	**April 2020/2021**	
Project	**Transition Architecture 1: Preparation**	**Transition Architecture 2: Initial Operational Capability**	**Transition Architecture 3: Benefits**	**Comments**
Enterprise e-Services Capability	Training and Business Process	e-Licensing Capability	e-Employment Benefits	
IT e-Forms	Design and Build			
IT e-Information Environment	Design and Build Information Environment	Client Common Data Web Content Design and Build	Enterprise Common Data Component Management Design and Build	
. . .	. . .	. . .	. . .	. . .

Migration Planning Techniques

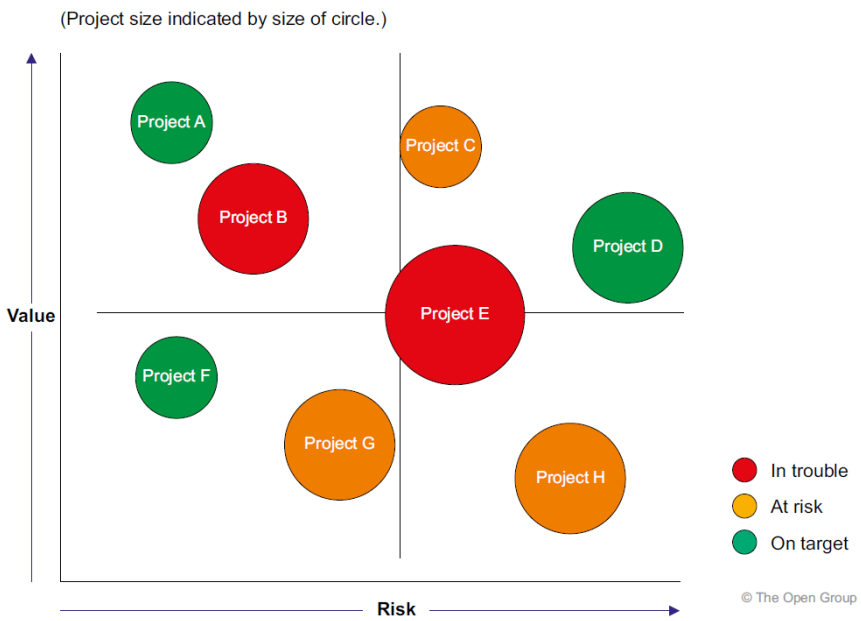
4. Transition Architecture State Evolution Table

- Transition Architecture: 1 .. N
- Subdomain / Service: 1 .. N

Architectural State using the Technical Reference Model				
Sub-Domain	**Service**	**Transition Architecture 1**	**Transition Architecture 2**	**Transition Architecture 3**
Infrastructure Applications	Information Exchange Services	Solution System A (replace)	Solution System B-1 (transition)	Solution System B-2 (new)
	Data Management Services	Solution System D (retain)	Solution System D (retain)	Solution System D (retain)
. . .	. . .	. . .	. . .	. . .

5. Business Value Assessment

- Value:
  - Contribution to result
  - Strategic Alignment
  - Competitive Position
- Risk
  - Size
  - Complexity
- Project
  - Size



G: Implementation Governance

Objectives:

- Ensure Conformance:
  - Implementation Projects
  - Target Architecture
- Manage Architecture Change Requests

Inputs:

- Arch:
  - Architecture Governance FW
  - Implementation Governance FW
  - Architecture Contract

Outputs:

- Architecture Contract
- Compliance Assessment
- CR
- Deployed Solutions

- Incremental Development Process
  - Deliver Value bit by bit
  - Phased Deployment Schedule

Steps:

1. Scope & Priorities
2. Resource Identification
3. Solution Development Guidance
4. Compliance Reviews
5. IT & Business Operations Implementation
6. Post-Implementation Review

G: Implementation Governance

1. Scope & Priorities
    - Gap-Analysis Report
2. Resource Identification
    - System Development Methods
    - EA Dev => Modelling Language => Solution Dev
3. Solution Development Guidance
    - Architecture Contract
4. Compliance Reviews
5. IT & Business Operations Implementation
    - Deploy solution
    - Publish Architectures in Repository
6. Post-Implementation Review

Architecture Contract

- Solution Summary
  - Concepts Diagram = how problem is solved
  - Stakeholder catalog
  - Risk Catalog
  - Gap Catalog
- Specification Summary:
  - Implementation Strategy = approved
  - Architecture Specification
  - Control = risks
- Architecture Description Summary:
  - Business Architecture
  - Information Architecture
  - Application Architecture
  - Infrastructure Architecture
  - Security Architecture

H: Implementation Governance

Objectives:

- Ensure
  - Development Cycle Followed
  - Architecture Governance Executed
  - EA Capabilities meet Requirements

Inputs

- Non-Arch
  - Request for Architecture Work
- Arch:
  - CR's
    - New Technology
    - Technology withdrawal
    - Cost Reduction
    - Standardization

Steps:

1. Value Realization Process
2. Monitoring Tool Deployment
3. Risk Management
4. Architecture Change Management
5. Change Requirement to meet Performance Targets
6. Governance Process
7. Implement Change Process

H: Implementation Governance

1. Value Realization Process
2. Monitoring Tool Deployment
    - Baseline Architecture Changes
        - Technology Change
        - Business Change
3. Risk Management
4. Architecture Change Management
    - Manage Changes
        - Internal Triggers = govern request
        - External Triggers:
            - New development in tech
            - Changes in business environment
5. Change Requirement to meet Performance Targets
    - Capacity Management
        - Growth / Decline of Business
        - Change in the operational Context
            - Scaling
            - Solution Architecture = different options based on capacity requirements
6. Governance Process
    - Change Management
        - Conditions triggering EA change after deployment
        - Conditions to trigger an ADM cycle
7. Implement Change Process
    - Changes:
        - Top-down = strategic
        - Bottom-Up = enhance capabilities
        - Feedback of current ADM iterations = experienced based
    - Architecture Board
        - Manage Change Requests
        - Type of Change:
            - Simplification
            - Incremental Change
            - Re-Architecting
        - CR or ADM Cycle?
            - Two or more stakeholder request
            - Two or more stakeholder impacted

Architecture Requirements Management

Objectives:

- Requirements
  - Identify & Manage
  - Use / Make Available
    in ADM phases

Inputs

- Non-Arch
  - Request for Architecture Work
- Arch:
  - CR's
    - New Technology
    - Technology withdrawal
    - Cost Reduction
    - Standardization

Outputs:

- Requirement Impact Assessment
- Architecture Requirement Specification

Requirement:

- Changes
  - ADM = A => H CRUD on requirements
  - Requirement Management = Manage Approved Requirements
- Types:
  - Functional
  - Non-Functional
  - Domain
- Source:
  - Business Scenarios

Steps:

1. Document Requirements: Architecture Requirement Specifications in Requirements Repository
2. Baseline Requirements
3. Monitor Requirements
4. Identify New & Change Requirements + Conflict & Impact Identified
5. Assess impact of change: Current phase + previous phases & CR/ADM cycles
6. Implement Requirement/Change
7. Update Requirement Repository
8. Asses Gap Analysis: in baseline but not in target, not in baseline but in target = requirements not eliminated by accident

Risk Management

Risk Management:

- Trace Risks during Transformation
- Initial Level = before risk mitigation actions
- Residual = after risk mitigation actions

1. Classification
2. Identification
3. Assessment
4. Migration & Residual Risk
5. Risk Monitoring

Corporate Risk Impact Assessment					
	Frequency				
Effect	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	E	H	H	M
Critical	E	H	H	M	L
Marginal	H	M	M	L	L
Negligible	M	L	L	L	L

1. Classification
   - Type of impact => Type of Governance
     - Schedule impact = time
     - Budget impact = costs
2. Identification
   - CMM = Capability Maturity Models
     - Risk of not achieving target state
3. Assessment
   - Effect:
     - Catastrophic
     - Critical
     - Marginal
     - Negligeable
   - Frequency:
     - Frequent
     - Likely
     - Occasional
     - Seldom
     - Unlikely
   - Impact
     - Extra High
     - High
     - Medium
     - Low

Risk Management

4. Migration & Residual Risk
    - Mitigation = Action
    - Not mitigated = residual risk
5. Risk Monitoring

Risk ID	Risk	Preliminary Risk			Mitigation	Residual Risk		
		Effect	Frequency	Impact		Effect	Frequency	Impact

Adapting ADM

Adapting ADM

Different Architecture Styles:

- Don’t adapt TOGAF it is a FW
- Adapt using TOGAF’s Metamodel
  - Notation
  - Modules
  - ViewPoint
  - Tools

ADM Iterations:

- 1 Project = 1 ADM Cycle
- Different Project = Different ADM Cycles
- 1 Project = Triggers ADM Cycle of Another Project

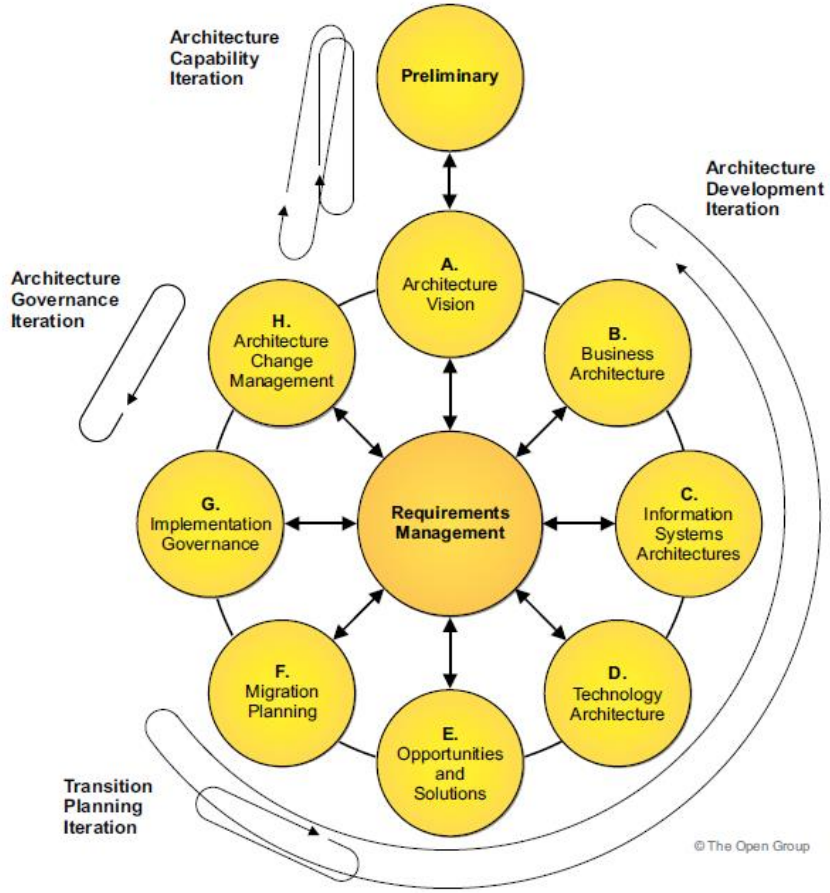
Projects:

- Concurrent ADM Phases
- Cycle of N phases
- Return to Update N-x phases

Changes:

- ADM Cycle
- Project CR

Adapting ADM



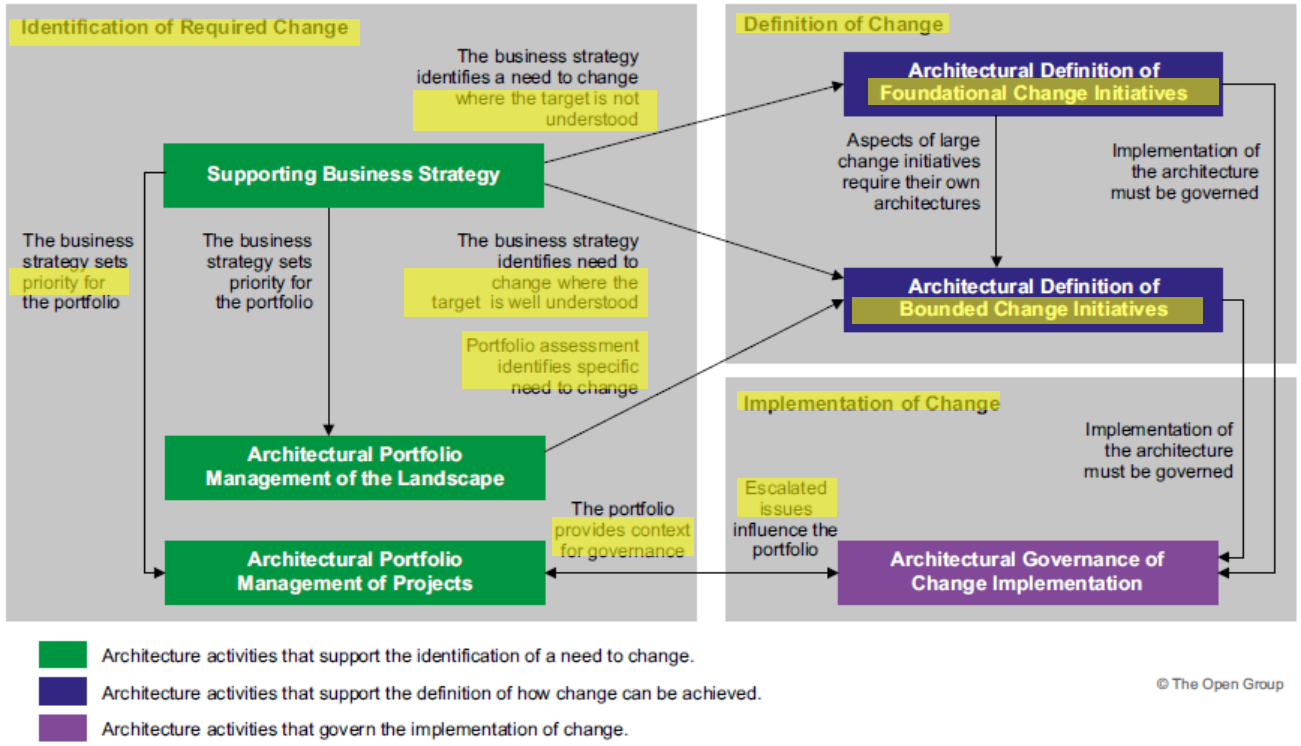
ADM Iterations

- Architecture Capability
  - Preliminary <-> Visions <-> Change Management
- Architecture Development
  - Vision <-> Migration Planning
- Transitions Planning
  - Opportunities/Solutions <-> Migration Planning
- Architecture Governance:
  - Implementation Governance <-> Change Management

Adapting ADM

ADM Iterations

- Changes:
  - Identify
    - Business Strategy = retain alignment
      - Cycles:
        - Architecture Capability
        - Architecture Development (Baseline First)
    - Portfolio Management Landscape = IT Portfolio performance
      - Cycles:
        - Architecture Capability
        - Architecture Development (Baseline First)
    - Portfolio Management Project = decisions on project priority and funding
      - Cycles:
        - Transition Planning
        - Architecture Governance
  - Define:
    - Foundational Changes
      - Cycles
        - Architecture Capability
        - Architecture Development (Baseline First)
        - Transition Planning
    - Bounded Changes
      - Cycles
        - Architecture Capability
        - Architecture Development (Target First)
        - Transition Planning
  - Implement
    - Governance of the Change Implementation
      - Cycles:
        - Architecture Governance



Baseline <-> Target

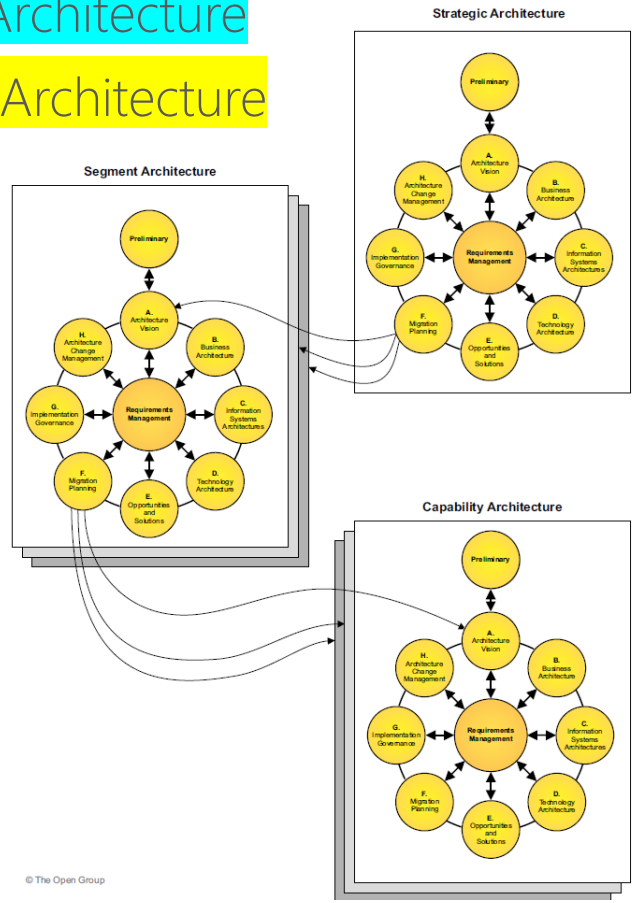
-> Base Line First = if baseline is not agreed/understood

<- Target First = if baseline is agreed/understood

Adapting ADM

Iterations Between ADM-cycles:

- Strategic Architecture
- Segment Architecture
- Capability Architecture



		Architecture Development			Transition Planning		Architecture Governance	
TOGAF Phase		Iteration 1	Iteration 2	Iteration *n*	Iteration 1	Iteration *n*	Iteration 1	Iteration *n*
Preliminary		Informal	Informal	Informal				Light
Architecture Vision		Informal	Informal	Informal	Informal	Informal		Light
Business Architecture	Baseline	Core	Light	Core	Informal	Informal		Light
	Target	Informal	Core	Core	Informal	Informal		Light
Application Architecture	Baseline	Core	Light	Core	Informal	Informal		Light
	Target	Informal	Core	Core	Informal	Informal		Light
Data Architecture	Baseline	Core	Light	Core	Informal	Informal		Light
	Target	Informal	Core	Core	Informal	Informal		Light
Technology Architecture	Baseline	Core	Light	Core	Informal	Informal		Light
	Target	Informal	Core	Core	Informal	Informal		Light
Opportunities and Solutions		Light	Light	Light	Core	Core	Informal	Informal
Migration Planning		Light	Light	Light	Core	Core	Informal	Informal
Implementation Governance					Informal	Informal	Core	Core
Change Management		Informal	Informal	Informal	Informal	Informal	Core	Core

1. Core
2. Light
3. Informal

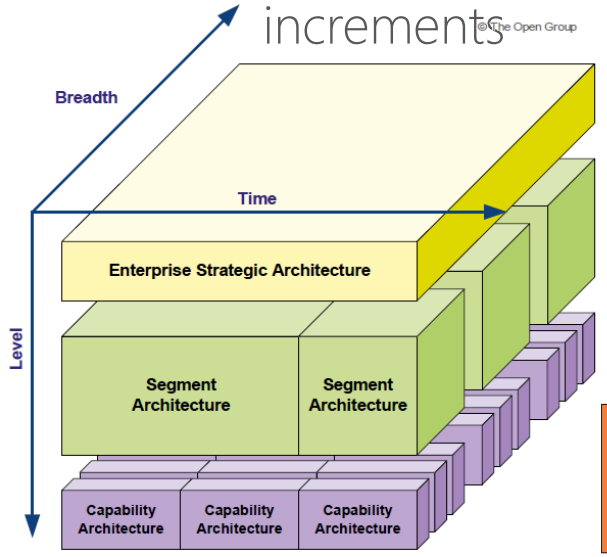
Core: primary focus activity for the iteration
Light: secondary focus activity for the iteration
Informal: potential activity for the iteration, not formally mentioned in the method

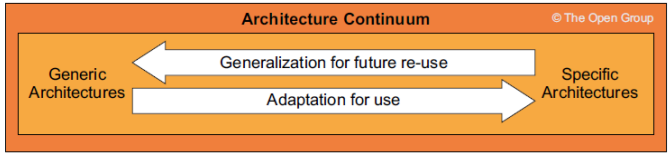
		Architecture Development			Transition Planning		Architecture Governance	
TOGAF Phase		Iteration 1	Iteration 2	Iteration *n*	Iteration 1	Iteration *n*	Iteration 1	Iteration *n*
Preliminary		Informal	Informal	Informal				Light
Architecture Vision		Informal	Informal	Informal	Informal	Informal		Light
Business Architecture	Baseline	Informal	Core	Core	Informal	Informal		Light
	Target	Core	Light	Core	Informal	Informal		Light
Application Architecture	Baseline	Informal	Core	Core	Informal	Informal		Light
	Target	Core	Light	Core	Informal	Informal		Light
Data Architecture	Baseline	Informal	Core	Core	Informal	Informal		Light
	Target	Core	Light	Core	Informal	Informal		Light
Technology Architecture	Baseline	Informal	Core	Core	Informal	Informal		Light
	Target	Core	Light	Core	Informal	Informal		Light
Opportunities and Solutions		Light	Light	Light	Core	Core	Informal	Informal
Migration Planning		Light	Light	Light	Core	Core	Informal	Informal
Implementation Governance					Informal	Informal	Core	Core
Change Management		Informal	Informal	Informal	Informal	Informal	Core	Core

Core: primary focus activity for the iteration
Light: secondary focus activity for the iteration
Informal: potential activity for the iteration, not formally mentioned in the method

Adapting ADM

- Strategic Architecture = corporate / executive level
- Segment Architecture = program/portfolio level
- Capability Architecture = capacity increments





- Breath
- Depth
- Time
- Domain or Recency

Recency:

- State of the ADM process: draft/developed -> approved -> deployed
- EA ages of time

Adapting ADM

Architecture Partitioning

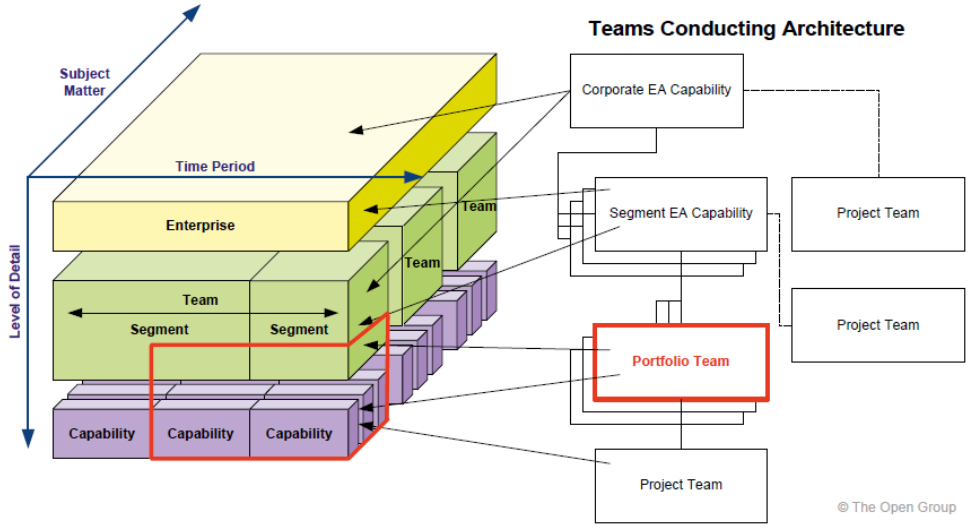
- Different organizational units
- Different teams working together
- Re-uses requiring modular architecture

Partitioning based on:

- Breadth = subject matter
- Time = lifecycle
- Depth = level of detail
- Maturity/Volatility = speed of changes

Partitioning dependencies:

- Determine organizational structure
  - Team scope: Strategic / Segment / Capability
- Responsibilities of the architecture teams
  - Team organigram
- Relationships between architectures
  - Team roles/responsibilities

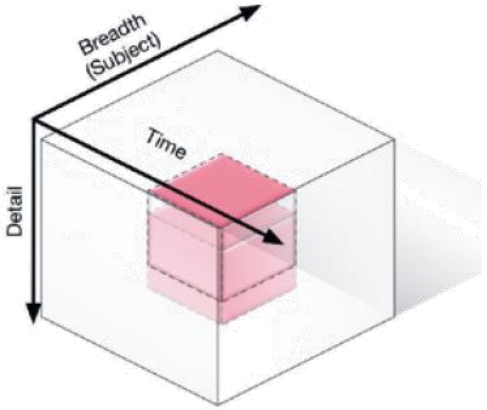


Integration:

- Federated architecture:
  - Risk of fragmentation / Disjunctions
- Governance
  - Contenet Integration is compliance condition

Practicing ADM

Purpose of EA



Why?

- Effective Change:
  - Improve
  - Effective: govern
    - Optimal Path
    - Control Activities
  - Scope:
    - Gaps
    - Future State
- Do:
  - Right things
  - Correct level of detail
  - For the best time to market

What?

- Execution Path = most effective path to realizer an enterprise strategy
- Chang cycle: plan -> design ->deploy -> deliver
- Understanding:
  - Enterprise context of change
  - Scope of change
  - Value change will bring

Landscape:

- EA project
- Focus = avoid delusion of EA energy
  - Everywhere
  - Every conversation

Purpose:

- Strategy
  - Context
  - Vision
  - Target State
- Portfolio
  - Work packages
  - Viability
  - Budget
  - Confidence in delivery
- Project
  - Dependencies
  - Balance Options
  - Finalization Scope/Budget
  - Delivery Governance
- Solution Delivery
  - Align principles
  - Guide delivery
  - Realize solution

How?

- Guide change
- Like-to-Like comparison

Purpose of EA

Architecture Contract:

- Project Context = fit in the roadmap
- Scope = work packages & gaps
- Conformance = specifications & controls to asses the result

Architecture Specification:

- Exclusionary = describes what is forbidden
- Reasonable = assess via requirements

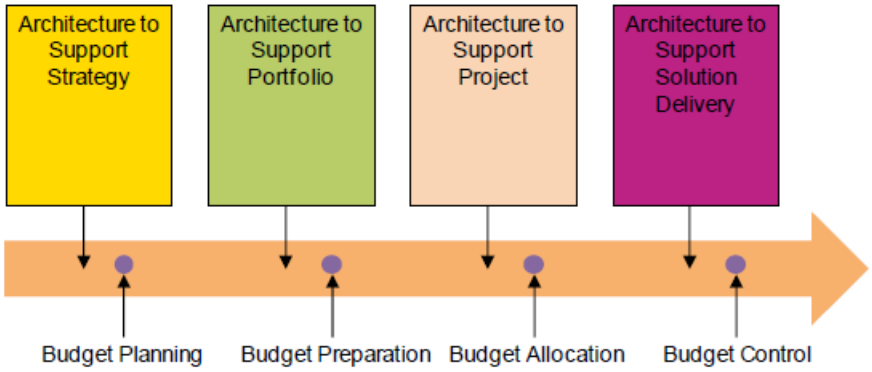
Non Compliance:

- Enforce archiecture
- Change architecture
- Grand relief = exception

Business Cycle

Budget Cycle:

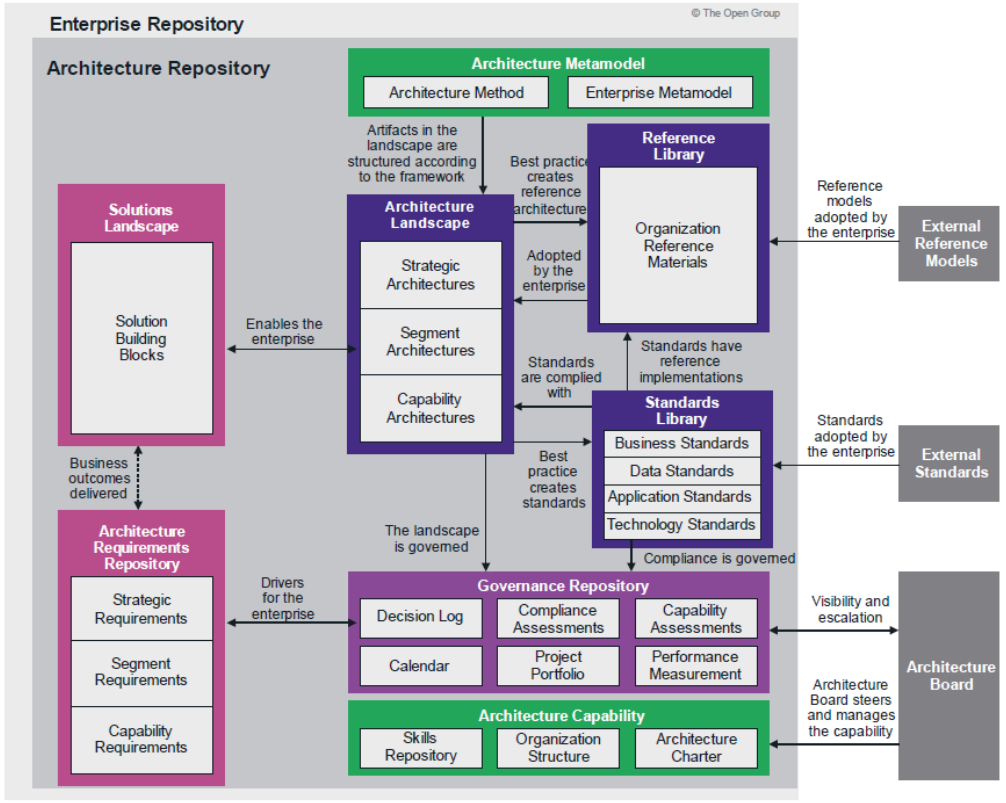
- Levels:
  - Strategic
  - Portfolio
  - Project
  - Solution Architecture
- Budget:
  - Planning
    - Change requires budget to be spent on new initiatives
  - Preparation
    - Priority = must be done / can be done / should be postponed
    - Funding
    - Forecasting = Y+1, … , +n budgets
  - Allocation
    - No gold plating = target is important
    - Value generating = If bottom-up what is the value?
      - No gap => no change
  - Control
    - Value tracing & realization



EA Repository

EA Repository:

- Metamodel
- Landscape: Architecture & Solution
  - EA Landscape
    - Baseline = current
    - Transition
    - Candidate
    - Target
- Reference Library
  - Model / Architectures / Patterns
  - APQC = American Productivity & Quality Center: Process Classification FW
  - IT4IT
- Standards Library
  - What = common
  - How = implementation
  - Tracing = services where standard was brought to live
- Requirements Repository
  - Requirement differ: purpose & level of details
  - Portfolio/Project Requirements: captured as scores
  - Enterprise differentiator = Long lived requirement
  - Types: Functional / Non-Functional / Domain
  - Time dependent = priority & importance
- Governance Repository:
  - Compliance assessment:
    - Scope = identify what gaps to be filled
    - Implementation = how gaps were filled
      - Value realized?
      - How good specifications where followed?
- Capabilities



Fit for Purpose:

- Enough Detail
- Usage: Sketches vs Models
  - EA = Models
  - Communication = Sketches
- Repository is not only a CMDB as many changes are not architectueal

EA to Support Strategy

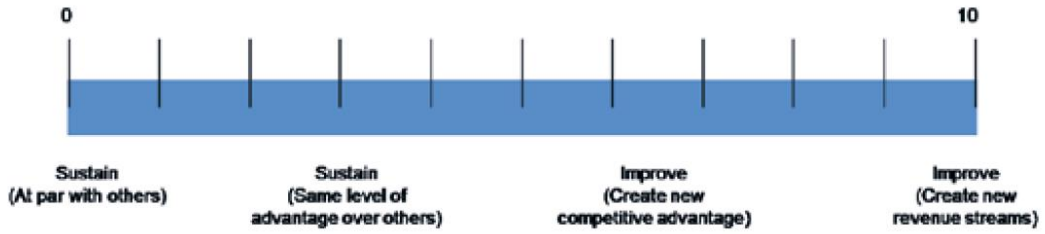
- Understand Context
  - Roadmap
  - Goals & Objectives
  - Operating Model
  - Governance Model
  - Risk Model
  - EA Capability Model
  - EA Process Model
- Assessment:
  - Operating Levels
  - Operational Challenges
  - Gaps between current and target
  - Stakeholder Matrix
  - Value Proposition
- Target State:
  - { gap } = work package
  - Capabilities
  - Organization Model
  - Operation Model

Tools:

- Strategy Map:
  - Financial
  - Customer
  - Internal Processes
  - Growth Perspective
- Porter 5 forces:
  - Threat of new entrants
  - Bargaining power of buyers
  - Threat of substitute products
  - Bargaining power of supplier
  - Existing Competition

EA to Support Portfolio

- Understand Context
  - Olympic Minimum
  - Keep Advantage
  - Extend advantage = new differentiates
  - New Markets



- Group Work Packages in Themes:
  - Themes = lens of EA
  - POC's are not part of EA
  - Current roadmap
  - In flight projects
- Balance Opportunity and Viability
- Run Up a Budget
- Drive Confidence of Delivery
  - Estimates and Variance Control: How & How Much

Tools:

- Work Package Grouping
  - Importance
  - Timeline Impact
  - Effort
  - Magnitude of Investment

Portfolio Theme	Work Package Name	Work Package Required	Importance	Impact Realization Timeline	Effort Required	Magnitude of Investment

- Ideas form the Wild:
  - Aligned with
    - Vision
    - Mission
    - Strategy
  - Challenges the status-quo?
  - Stakeholders?

EA to Support Projects

- Ascertain Dependencies
  - Recency = impact of other // projects
    - Neighboring projects
      - How much room before they overlap
      - State of the project: approved => in development
    - Overlap required descoping
  - Readiness:
    - Enterprise = absorb solution
    - Solution provider = deliver solution => capabilities
  - Stakeholders:
    - No project specific stakeholders
    - If need be project specific concerns
- Balance Options and Suppliers
  - ABB's
  - SBB's
  - Consistent reconnaissance to avoid disaster
  - Specifications to prevent overlap = constraint during solution delivery
- Finalize Scope and Budget
- Prepare Solution Delivery Governance

EA to Solution Delivery

- Align Implementation
  - Change triggers midst implementation
  - Solution Architecture defines conditions when changes are acceptable
  - 3rd party developed => In house validated/accepted/integrated
  - Evaluation:
    - Points of failure
    - Feasibility
    - Scalability
- Guide Delivery
  - Continuously Update/Analyze
    - Update EA Landscape
    - Update EA Repository
    - Analyze Impact on Superior Architecture
  - Integration
    - Current Architecture
    - Future Architecture
  - Core information retained in-house
  - Solution Families = Packaged Products
    - Impact analysis required
- Realizing the Solution
  - Asses Changes to EA roadmap
  - Create backlog of Architecture Work
    - Sub-Optimal Delivery can be intentional = addressed in future Architecture work
  - Warranty period after production
  - Gap analysis: baseline vs. realized architecture

Using EA

Jumping to H - Implementation Governance:

- Effective change
  - Bias to action
  - Predictable change incl. innovation/creativity
- Guide for change requires:
  - Timely changes
  - Targeted changes
- Failures:
  - No Purpose
    - Architecture = Strategy
    - Solution Implementation = Delivery
  - No Business Cycles:
    - Be at the table: advice not to drive pet projects
    - Working ahead of planning cycles
      - FYE – 2Q: Provide input to decision takers
      - FYE – 1Q: negotiation between stakeholders and decisions takers
      - FYE: clarity on the plant
  - Architecture after Decision
    - Only validate decision = pointless as decision was already made
    - Creates conflicts
- Not doing Architecture:
  - Multiple roles beyond architecture
  - Implicit architecture:
    - No explicit stakeholder approval
    - Implicit on preferences:
      - Mission
      - Vision
      - Vue proposition
      - Objectives
- Unplanned Changes:
  - More risk, less confidence
  - Risk mitigation required
  - Connect the dots:
    - Strategy
    - Benefit
  - Focus on:
    - Enterprise benefits
    - Not project benefits
  - Agile:
    - Agile increments = micro-iterations of ADM
    - Scrum Master = Practioner in the role of stakeholder agent

EA Special Cases

Agile:

- Blurs Implementation & Architecture
- TOGAL put Agile in phase G: Governance
- Constraints for project delivery team

Domain:

- Domain FITS INTO = part ofEA
- EA aligned to = FITS WITH domain

Incident Response:

- Risks:
    - Uncertainty of objectives
    - Risk appetite
    - Risk tolerance

Complex Roadmaps:

- Complexity:
    - External Effects
    - External Collaboration
    - Maturity of Teams
    - Availability
        - Solution
        - End-of-live products
    - Internal grouping
- Roadmap Grouping
    - Grouping
        - Segment
        - Portfolio
        - Geography
    - N concurrent enterprise goals
    - N baselines
- Comparing Architectures
    - 1 Architecture Project = 1 Baseline
    - Standard Reference Architecture = compare N projects
        - Impact analysis
        - Year over Year changes

Governance

Governance of Business Cycle

- C-Level EA Request
  - Explicit Request
  - Implicit EA in current planning cycle
  - Retro-Active: not optimal
- Normal Business cycle:
  - Normal planning cycle
  - Explicit EA for next planning cycle
  - Pro-active:
    - Prepare Data Packages
    - Do budget planning
  - Budget control:
    - Earned Value Analysis
    - Avoid as other role for EA Architect:
      - Since they are involved in realization = Less focus during planning
  - Work in the wild triggers:
    - Review
    - Trade-Off Analysis
    - Governance

Architecture Governance:

- What? Why?
  - Target Architecture
  - Scope Changes
    - Architecture Contract
    - Architecture Requirements Specifications
- Who?
  - Roles, Duties, Decision Rights
    - Stakeholder
    - Stakeholder Agent
    - SME
    - Implementer
    - Architect
    - Auditor
- Compliance:
  - Constraints: confirmed /violated
  - Value: delivered / failed to deliver
  - Gap: filled / left open

Governance

Governance of Architectuer

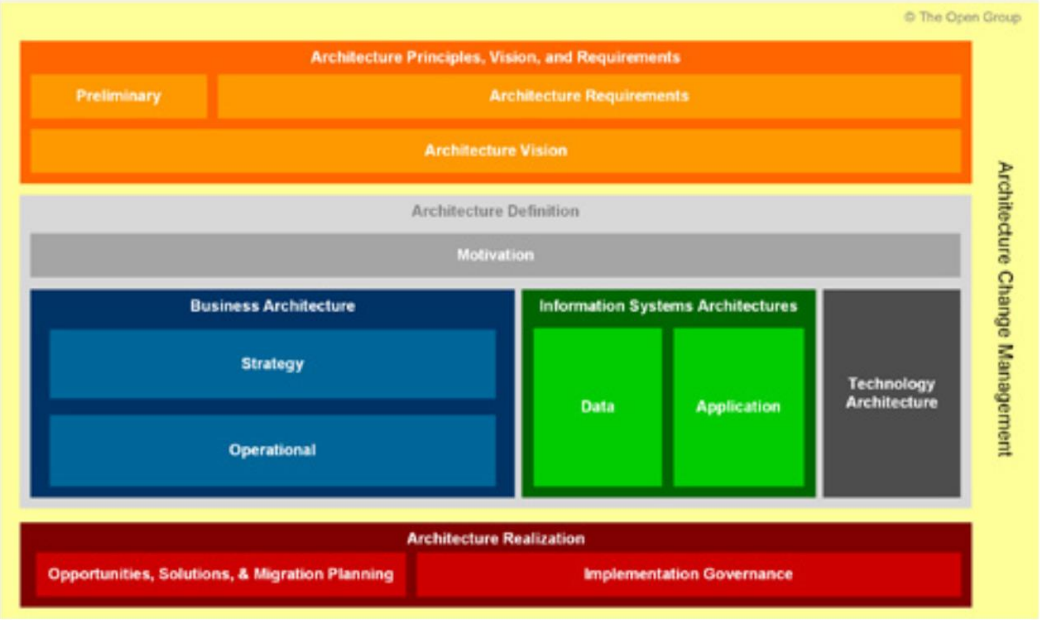
- Target Checklist
  - Stakeholders identified
  - Superior Architecture = context
  - SME's agree on baseline
  - Views produced for stakeholders
  - Concerns of stakeholders in views
  - Stakeholders understand
    - Value
    - Work necessary = WBS
    - Limitations of Confidence
  - Views are approved

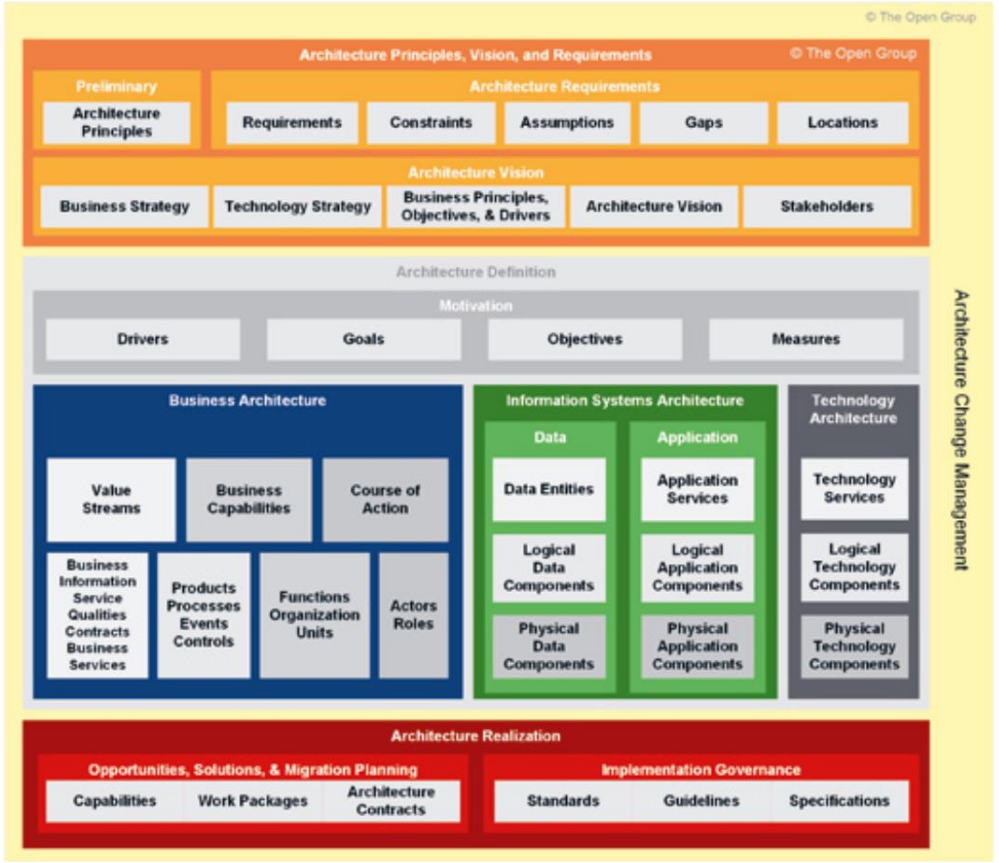
- Change Checklist:
  - Understand Target Architecture Governance & Constraints
  - SME's agree on facts
  - SME's agree on recommendations
  - Views reflects impact assessment
  - Stakeholder understand impact on confidence
  - Stakeholder understand impact on value
  - Approve solutions:
    - Enforce
    - Grand relief
    - Change

Content FW & Enterprise Meta-Model

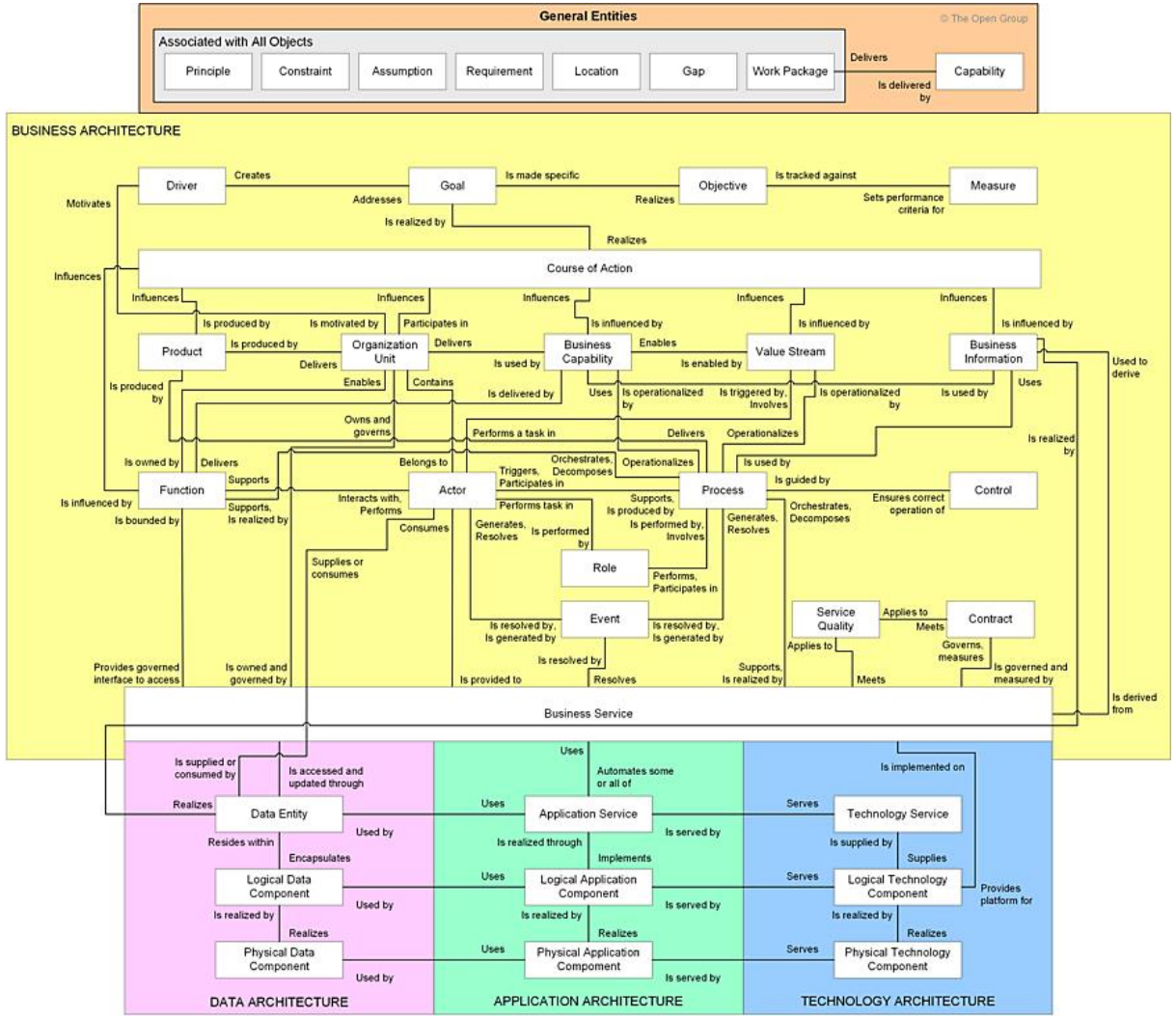
Content Framework

- Content Framework:
  - Categorization FW for Architecture Description
- Enterprise Metamodel:
  - Entities and relationship that describe the Enterprise
  - Basis for an organization specific meta-model





Enterprise Meta-Model

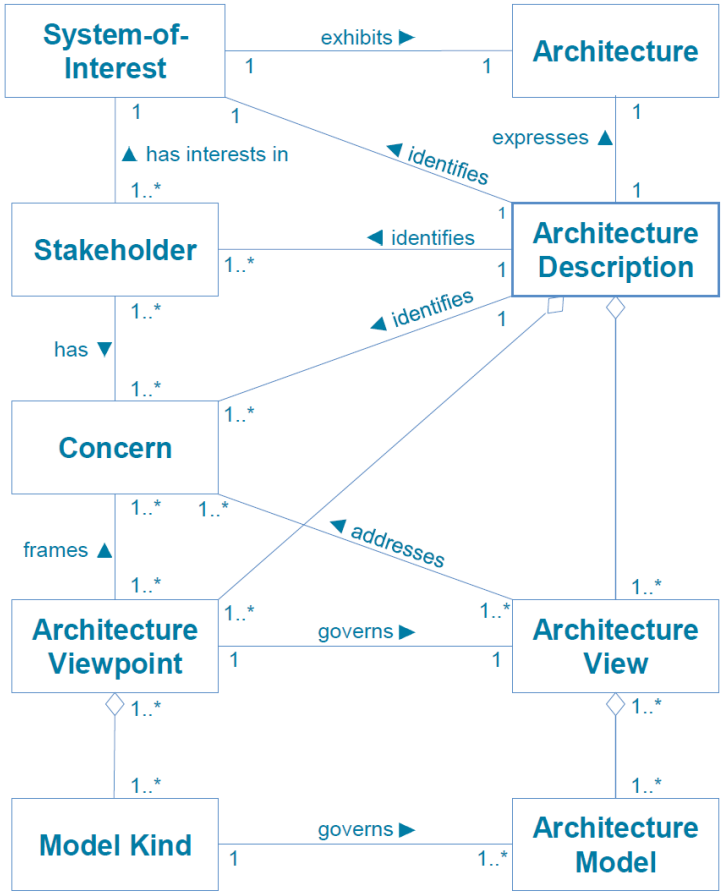


- Actor
- Application Service
- Assumption
- Business Capability
- Business Information
- Business Service = unique business behavior
- Capability
- Constraint
- Contract = consumer/provider functional/non-functional
- Control
- Course of Action = direction/focus
- Data Entity

Definitions

- Driver = external condition motivating the organization to define its goals
- Event
- Function = set of business behaviors for a set of criteria
- Gap
- Goal = high-level intent or direction
- Location
- Logical Application Component
- Logical Data Component
- Logical Technical Component
- Measure
- Objective
- Organization Unit
- Physical Application Component
- Physical Data Component
- Physical Technical Component
- Principle
- Process
- Product
- Requirement
- Role
- Service Quality
- Technology Service = enabling infrastructure for delivery of applications
- Value Stream
- Work Package

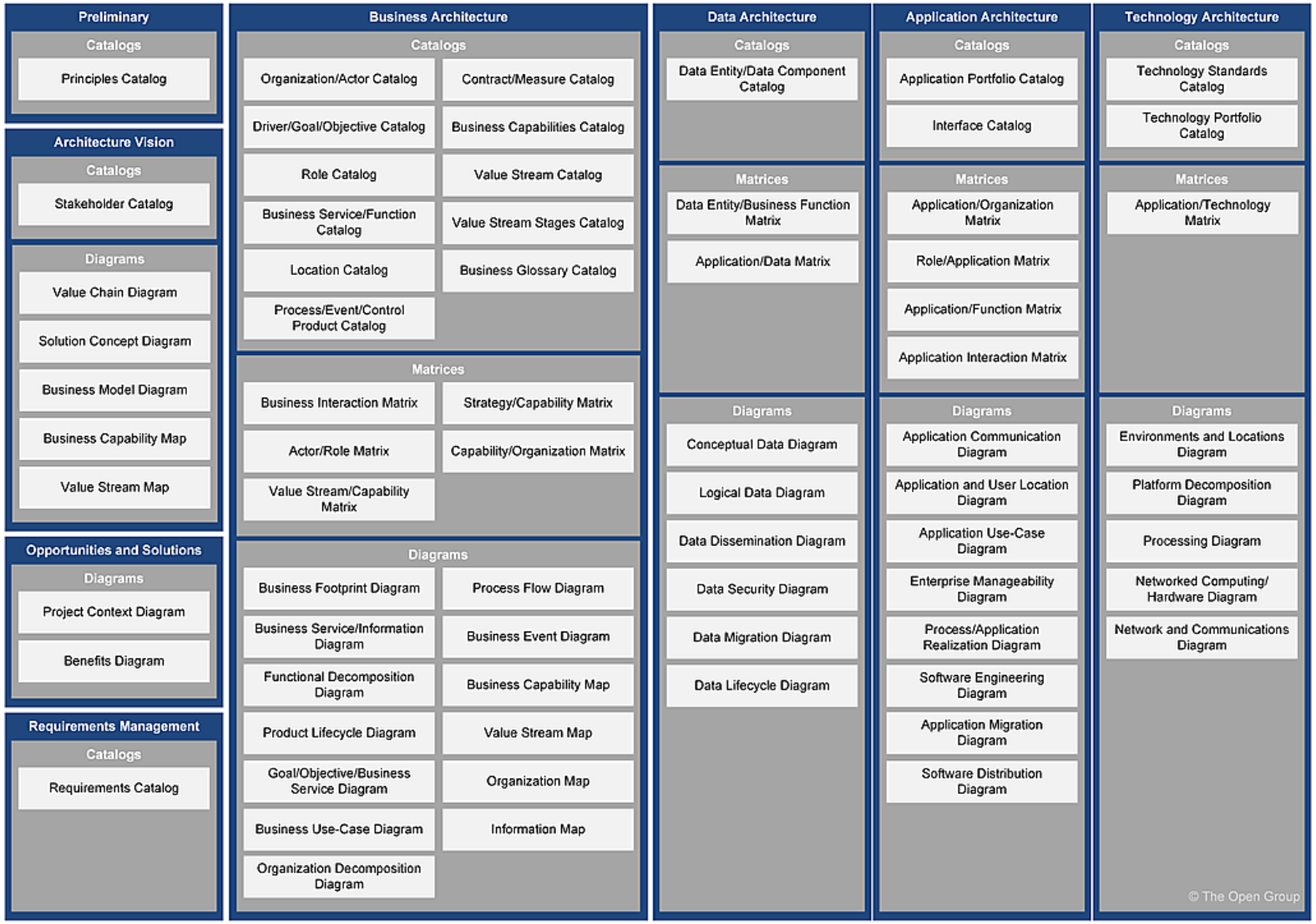
Artifacts



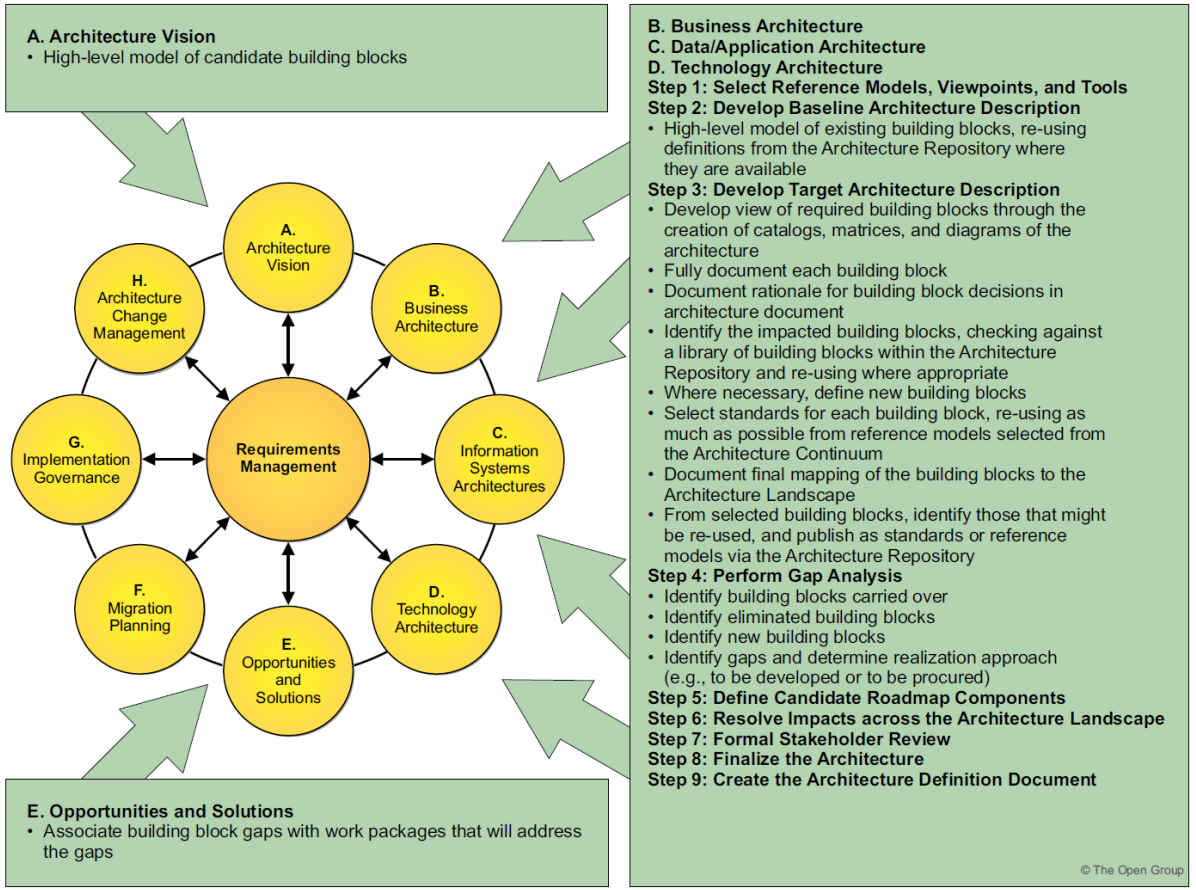
Terms:

- Environment = context determining the setting and circumstances
- System = combination of interacting elements to achieve a purpose
- Architecture = fundamental concepts or properties of a system
- Architecture Description = work product that expresses architectures, views or models
- Stakeholders
- Concerns
- Architecture View
- Architecture Model
- Architecture Viewpoint
- Model Kind

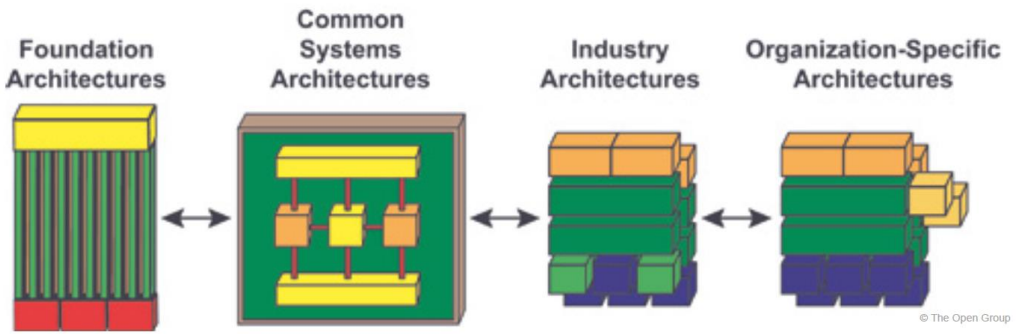
Artifacts – ADM Phases



Building Blocks

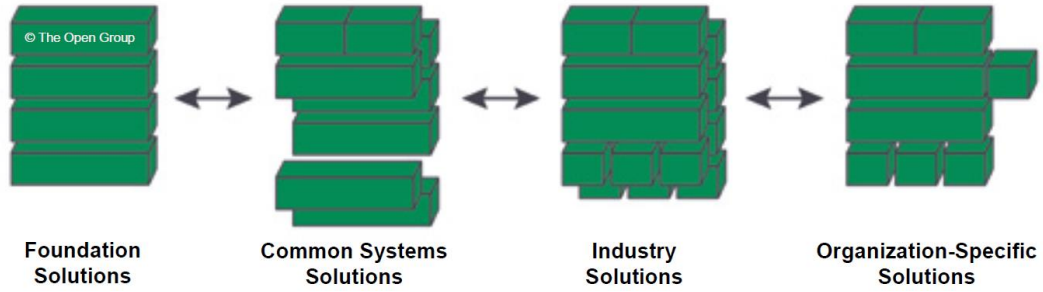


Architecture Continuum



- Foundation Architecture
  - Generic components
  - Principles
  - Guidelines
  - Relationships
- Common Systems Architecture
  - Selection of Services and integrations form Foundation Architecture
  - Building solution across multiple domains = Cross Cutting
  - EG:
    - Security Architecture
    - Operations Architecture
    - Management Architecture
- Industry Architectures:
  - Integration Common Components with Industry Specific Components
  - EG:
    - Vertical Industry business capabilities/processes
- Organization Specific Architecture
  - For a specific enterprise or collection of enterprises

Solution Continuum



- Foundation Solutions
  - Concepts
  - Tools
  - Products
  - Services
  - Solution Components
  - EG:
    - Programming Languages
    - OS's
    - Data Languages
- Common Systems Solutions
  - Set of products & services
- Industry Solutions:
  - Re-usable packages
  - EG:
    - DB Schema for a Business
- Organization Specific Solutions
  - Solutions providing specific business capabilities

Standards Library

Standards:

- Source
  - Legal & Regulatory Obligations
  - Industry Standards
  - Organizational Standards
- Classification
  - Business Standards
  - Data Standards
  - Application Standards
  - Technology Standards

EA Capabilities & Governance

Capabilities

Architecture Capabilities:

- Not a separate phase in ADM
- Developed like any other Enterprise Capability
- Not one-off activity but ongoing effort

Governance

Architecture Governance:

- The system by which enterprise are directed and controlled

Governance Hierarchy:

- Enterprise Governance
- Technology Governance
  - How technology is used to create and deliver goods and services
  - Manage Intangibles: data
- IT Governance
  - How IT resources and data are used for enterprise strategy
  - Managing IT performance
  - Often part of Technology Governance
  - IT Controls: COBIT
- Architecture Governance
  - How Architecture is created and deployed in compliance with standards and regulations
  - Managing Architecture performance
  - Ensure Accountability

Governance Characteristics

- Discipline = process & procedures
- Transparency = open for inspection
- Independence = avoid conflicts of interest
- Accountability = accountable for actions
- Responsibility = responsible to organizations and stakeholders
- Fairness = avoid unfair advantage

Architecture Governance Framework

Process

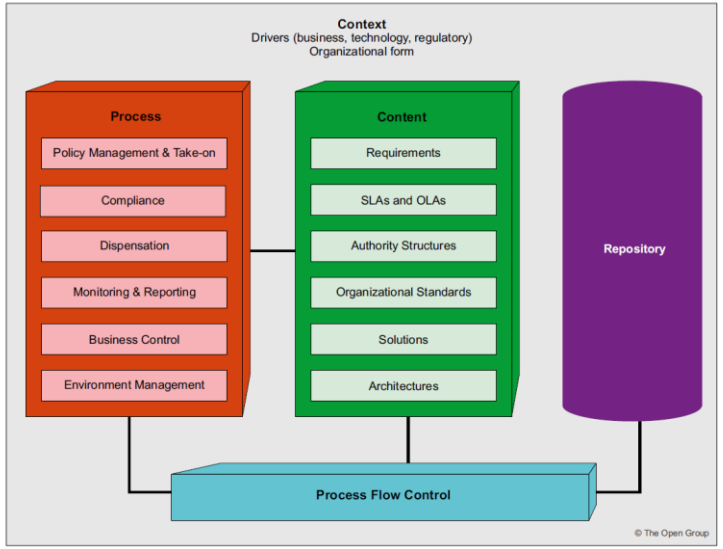
- Policy Management & Take-On = integration of new policies
- Compliance = assessment against metrics, requirements and standards
- Dispensation = a waiver to reject a compliance assessment for the lifespan of the waiver
- Monitoring & Reporting = operational and service performance management
- Business Control = compliance with business policies
- Environmental Management = meta-management of the Governance FW => managing the Governance FW processes and repository

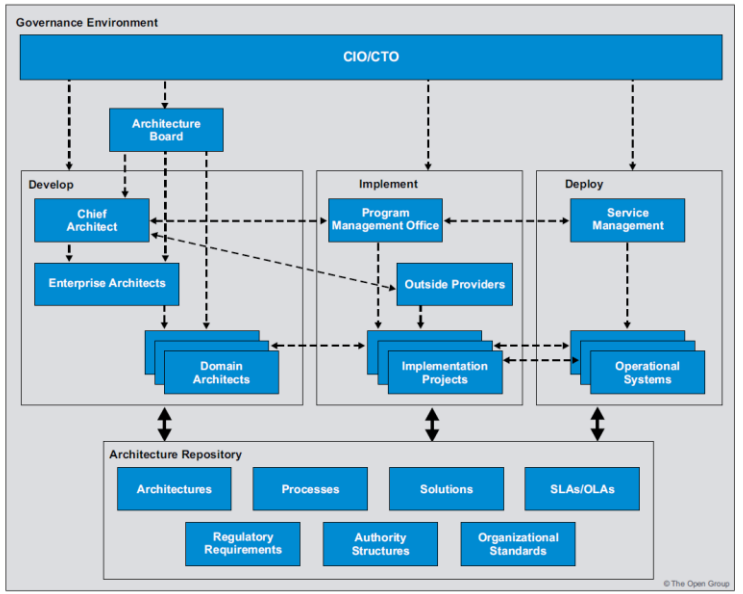
Organizational Structure:

- Global Governance Board
- Architecture Board
- Architecture Management:
    - Development
    - Implement
    - Deploy
- Architecture Repository

Effective Governance:

- Cross-Organizational Architecture Board
- Set of Architecture Principles => Architecture Contract
- An Architecture Compliance Strategy





Architecture Governance Framework

Responsibilities / Activities

- Decisions-making
- Consistency & Compliance
- Dispute Resolution
- Architecture Maturity
- Acceptance & Divergence (Waivers)
- Escalation

Size:

- 4-5 < 10

Drivers:

- Organizational Change: M&A, Expansion, Restructuring
- Technology / Platform Change
- Process Changes / Improvement Plans

Architecture Contracts

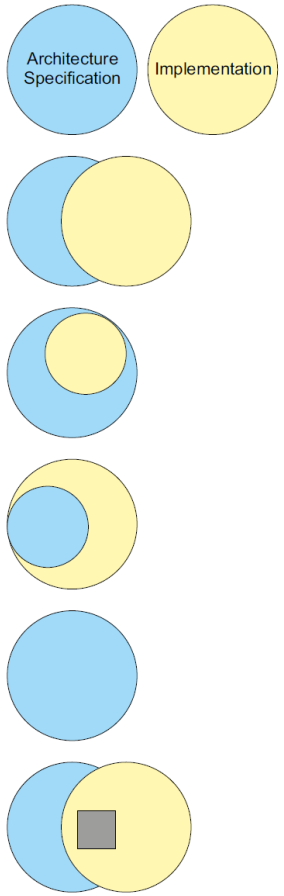
Architecture Contract:

- Agreement between sponsors and development partners on deliverables, quality and fit-for-purpose of Architecture
- Based:
  - Continuous Monitoring
  - Adhering Principles
  - Risk Identification
  - Processes & Practices
  - Governance
- In ADM Phases:
  - Phase A:
    - State of Architecture Work
    - Between Sponsor & EA
  - Phase B->D:
    - Development Architecture Domains
    - Between Architecture Design & Development Partners
  - Phase G:
    - Implementation Governance of Enterprise Architecture for Implementation Teams
    - Development Partners & Project Management
  - Phase F:
    - Migration Plan
    - Between Architecture Function & Business Stakeholders

Contracts:

- SAW = Statement of Architecture Work
- Architecture Design & Development Partners
  - Context
  - Scope
  - Process & Roles
  - Principles & Requirements
  - Deliverables
  - Conformance & Metrics
  - Workplan: Phases & Time
- Architecture Function & Business Stakeholders
  - Context
  - Scope
  - Strategic Requirements
  - Adopters (who will receive architecture)
  - Deliverables
  - SLA's & Business Metrics
  - Workplan: Time Windows

Architecture Compliance



Irrelevant:
The implementation has no features in common with the architecture specification (so the question of conformance does not arise).

Consistent:
The implementation has some features in common with the architecture specification, and those common features are implemented in accordance with the specification. However, some features in the architecture specification are not implemented, and the implementation has other features that are not covered by the specification.

Compliant:
Some features in the architecture specification are not implemented, but all features implemented are covered by the specification, and in accordance with it.

Conformant:
All the features in the architecture specification are implemented in accordance with the specification, but some more features are implemented that are not in accordance with it.

Fully Conformant:
There is full correspondence between architecture specification and implementation. All specified features are implemented in accordance with the specification, and there are no features implemented that are not covered by the specification.

Non-conformant:
Any of the above in which some features in the architecture specification are implemented not in accordance with the specification.

Compliance:

- Supports stated Strategy
- Adheres to stated Standards
- Provides stated functionality
- Adheres to stated Principles

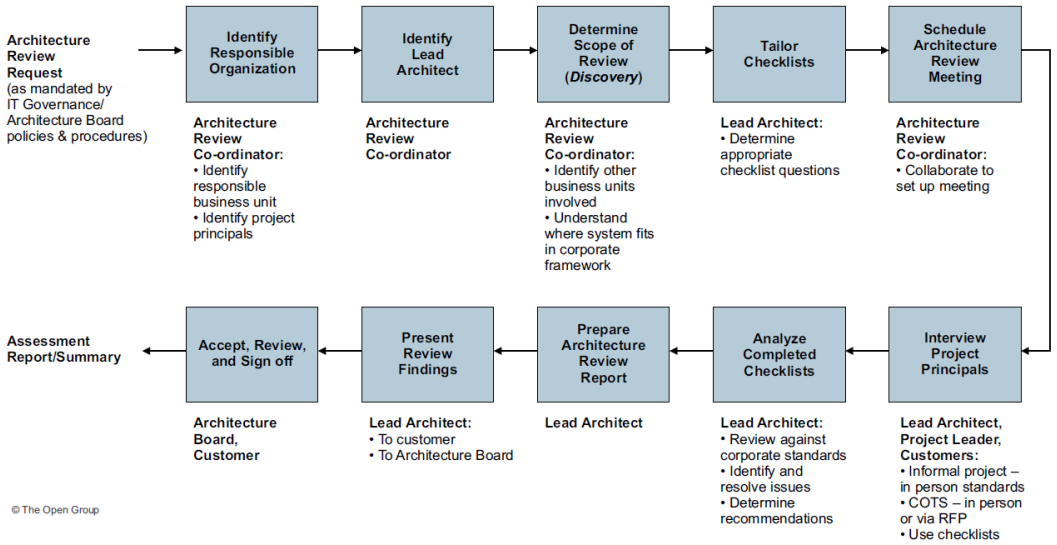
Purpose:

- Catch deviations early
- Identify where standards require updates
- Opportunities
  - Extract standards form specific implementation
  - New technologies

Timing:

- Development of Architecture
- Implementation of Architecture
- Changing Architecture

Architecture Compliance



1. Request Review
2. Identify responsible for Architecture
3. Determine Scope of Review
4. Tailor Checklist
5. Schedule Review
6. Interview Project Principles
   - Internal: in-person
   - External: RFP checklist
7. Analyze Completed Checklists
8. Prepare Review Report
9. Present Review Findings:
   - Customer
   - Architecture Board
10. Accept Review & Sign-Off

Architecture Compliance

Checklists:

- HW/OS Checklist
- Software Services Checklist
- Application Checklist
  - Infrastructure
  - Business
  - Application Integration
- Information Management Checklist
  - Data Values
  - Data Definition
  - Data Security
  - Data Management
- Security Checklist
  - Awareness
  - Authentication/Authorization
  - Sensitive Data Protection
  - Auditing
- System Management Checklist
- System Engineering Checklist
  - HW
  - Clients
  - Servers
  - COTS
- Methods & Tools Checklist

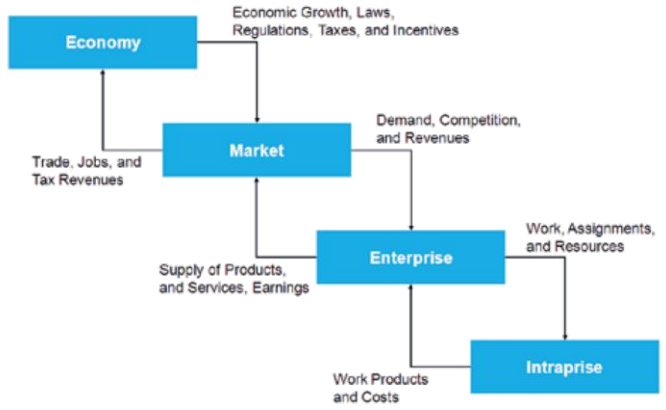
EA Leadership

Introduction

Definitions

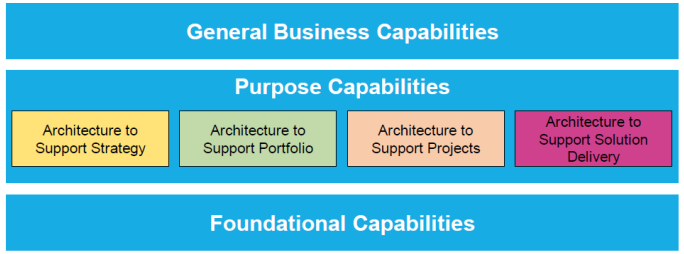
- Capability:
  - Do something that leads to enhanced outcome
- Enterprise
  - Boundary of EA Capability
- EA Capability
  - The ability to develop, maintain and evolve EA
  - Part of ADM Preliminary Phase
- EA Leader
  - Person that establishes or evolves EA Capabilities

Context:



Capabilities:

- Strategy
- Portfolio
- Project
- Solution Delivery

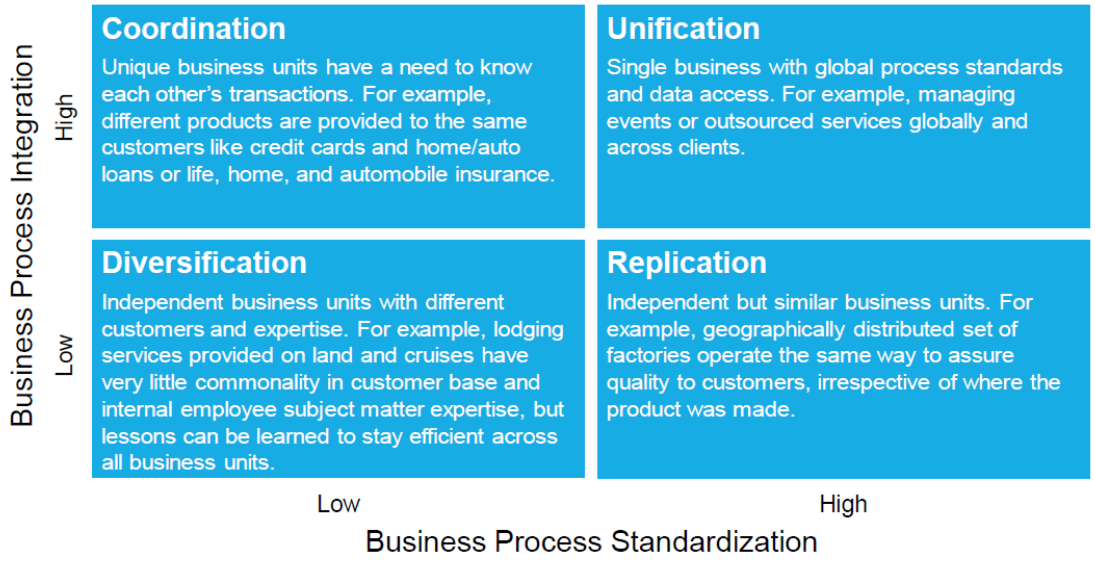


Context for EA

Enterprise:

- Boundary
- Purpose: private, public, social
- Strategic statement: how / where to compete
- Business Model
  - How to stay current in environment & economy
  - Value
  - Channels
  - Activities
- Operating Model
  - How to execute core functions
- Operating Environment:
  - Standards
  - Regulations

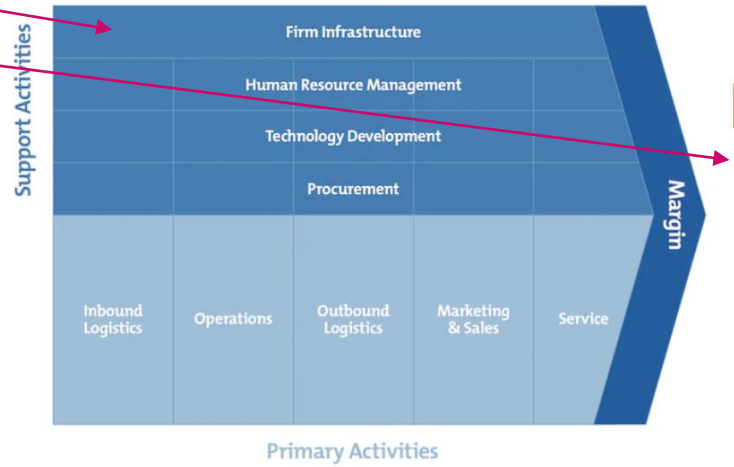
Operating Model:

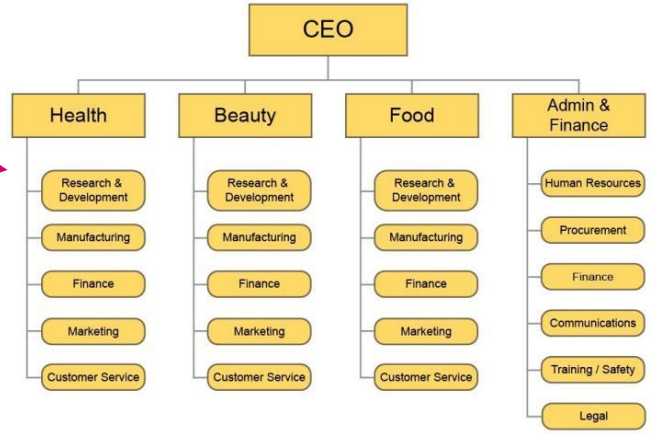


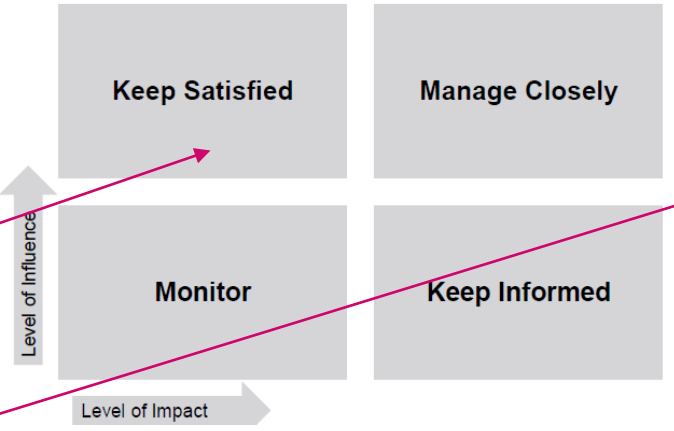
Context for EA

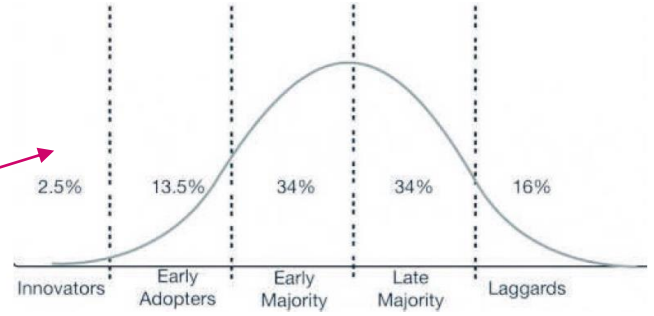
- Organizational Model:
  - Functional Organizational Model
  - Product Based Organizational Model
  - Project Based - Matrix Structure
- Econometric Model
  - Accounting
    - OPEX – CAPEX – COGS
    - Customer Intimacy / Product Leadersh / Operational Excellence
  - Forecasting
    - Planning Horizon
  - Planning & Allocation
    - EA Principles: decisions => value generation
- Decision Model:
  - Power/Impact Model
- Risk Management Model:
  - Innovation Adoption Model

Operating Model:









Business Objectives for EA

Expectations

- Goals?
- Where used?
- Do the right thing?
- How is success measured?

Depth & Breadth:

- Strategy
- Portfolio
- Project
- Solution Deliver

Organizational Model:

- EA support decision-making
- EA supports governance needs
- EA interacts with correct decision-maker

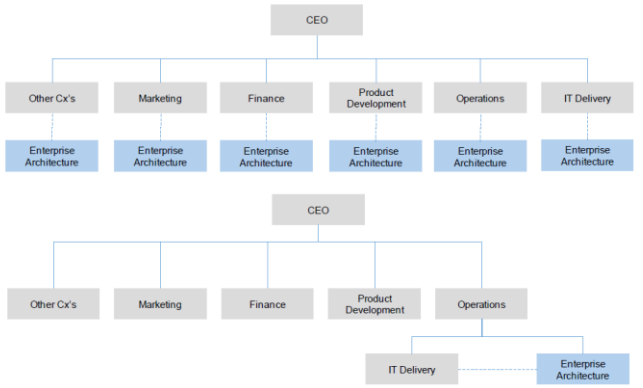
Alignment EA Capability Team – Organizational Model:

- Function Centric EA
- IT-Centric EA
- Strategy-Centric EA

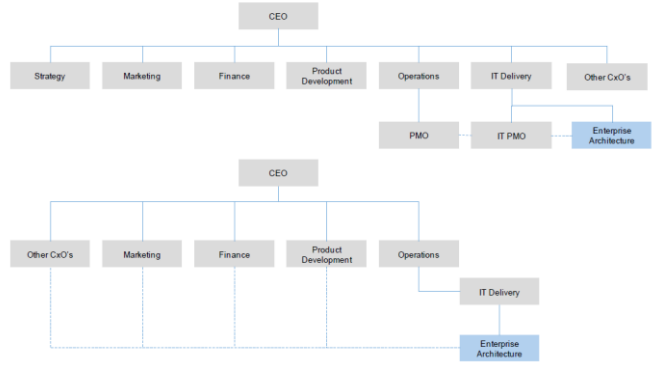
Bottom-Up Objectives:

- Foundation for Future Scaling
- Clarity
- Risk Reduction

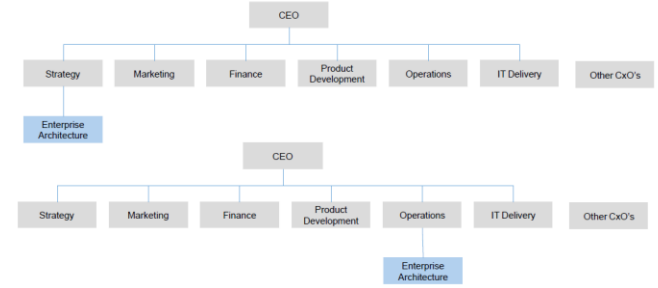
Function-Centric EA



IT-Centric EA

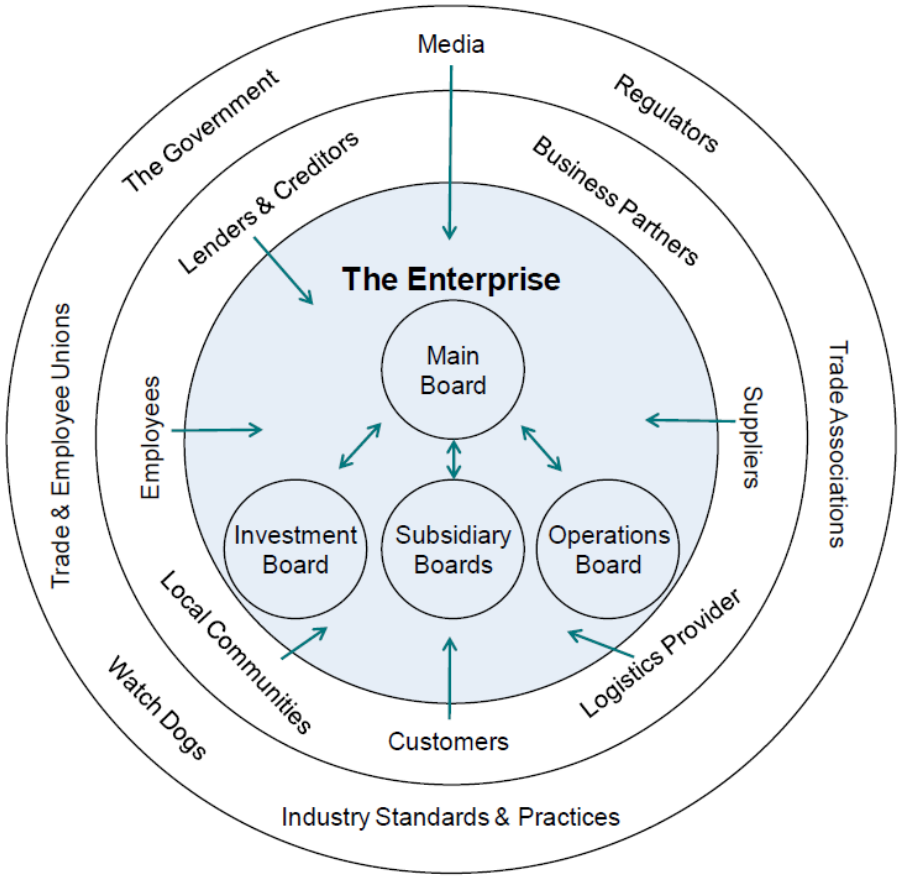


Strategy-Centric EA



Structure for EA

- Governance
  - Approval Checklist
  - Non-Compliance Checklist
- Reporting FW:
  - Enterprise Interactions => Potential Reporting
- Risk Management Approach
  - Risk Appetite/Tolerance
  - Assessment
  - Treatment
- Alignment With other FW's
- Customization
  - Content
  - Meta-Model



Content & Metamodel for EA

- Content
  - Maintain the information or link the information
- Metamodel
  - Maintain the taxonomy
- Focus:
  - Minimize the information required to execute EA Capability = effort vs. result
  - Questions the business wants to be answered = minimum required information for viewpoints
  - Standardize information
  - Automation information gathering

Content Standardization Impact

How Repeatability Influences Standardization of the EA Content Framework			
EA to Support …	**Process**	**Analysis**	**Presentation**
Strategy	Low	Low	Low
Portfolio	Medium	Medium	Medium
Project	High	High	Very High
Solution Delivery	Very High	High	Very High

Distribution/Federation/Analysis Impact:

How the EA Team Organization Model and Analysis Needs Influence EA Repository Standardization			
EA to Support …	**Impact of Geographic Distribution**	**Impact of Federated Organization Model**	**Impact of Level of Complex Analysis**
Strategy	Limited Impact	Very Limited Impact	Very High
Portfolio	Some Impact	Significant Impact	Very High
Project	Significant Impact	Significant Impact	Low
Solution Delivery	Significant Impact	Massive Impact	Limited

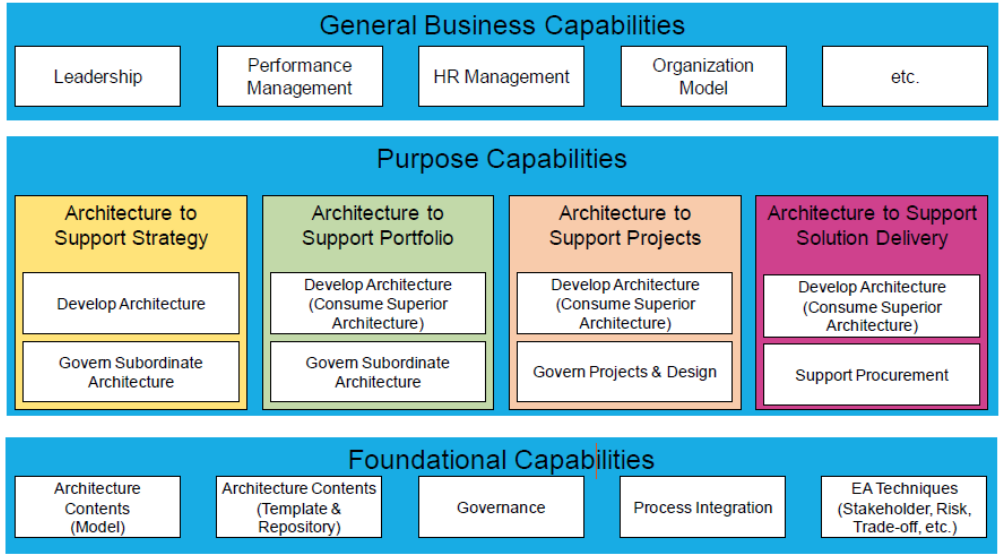
Teams in EA

Alignment:

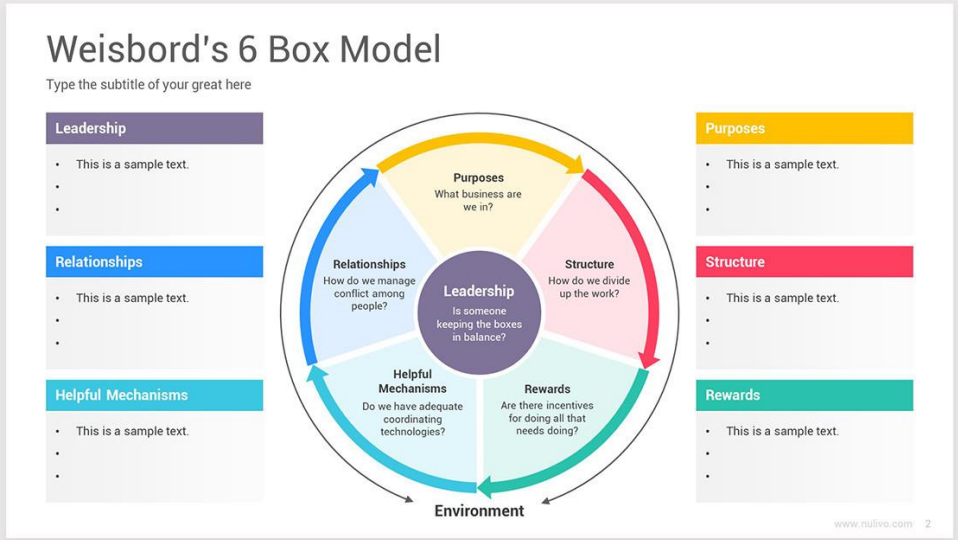
- Function Centric EA
- IT-Centric EA
- Strategy-Centric EA

EA Capabilities:

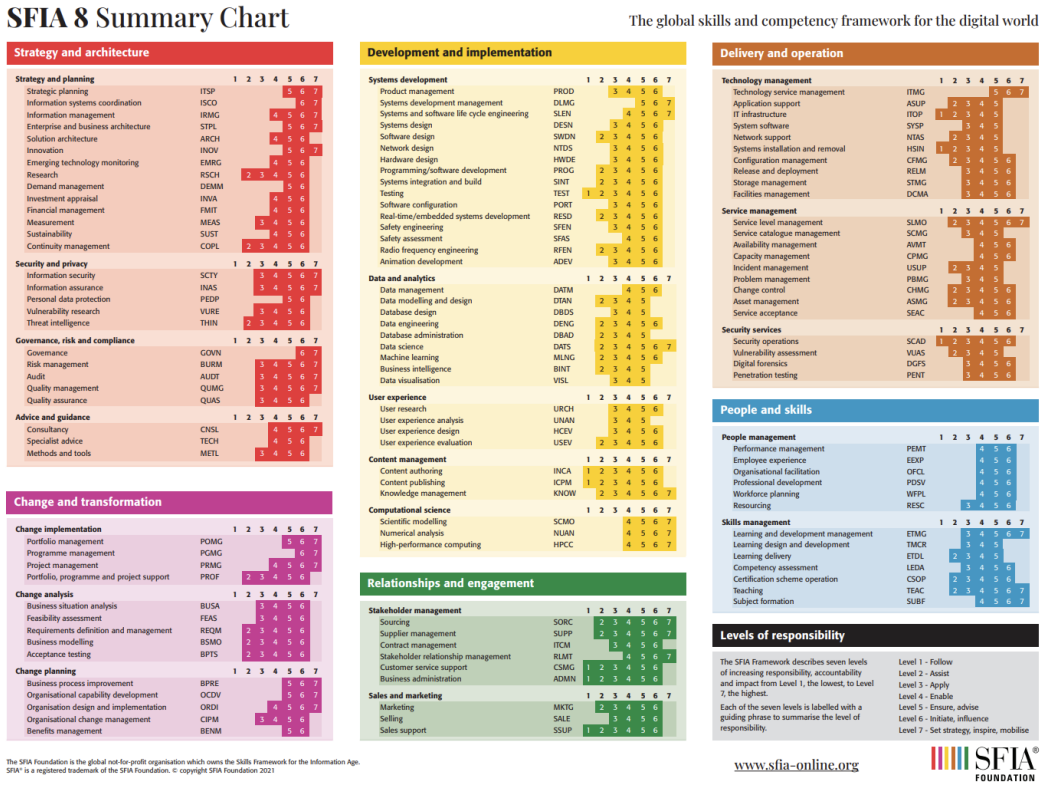
- Roles & Responsibilities
- Skills
- Performance Evaluation
    - Hard to measure the performance in creating model, documents and visualizations: measure person
        - Identify Alternatives
        - Tailor
        - Trade-Off Analysis & Impact Analysis
        - Planning
        - Execute
- Capacity
    - Don't underestimate the experience to the deliver a roadmap: maturity of the organization
    - Internal & External Recruited



Teams in EA



Roles & Responsibilities



Skills

Scope of EA

Segmentation:

- Activities
  - Capability-based = differentiation form competition
  - Process-Based = organizational processes
  - Value-Stream Based = products & services
- Domains
  - Business
  - Data & Information
  - Application
  - Technology
  - Security
- Depth & Breadth
  - Paritioning

Process of EA

Process Model:

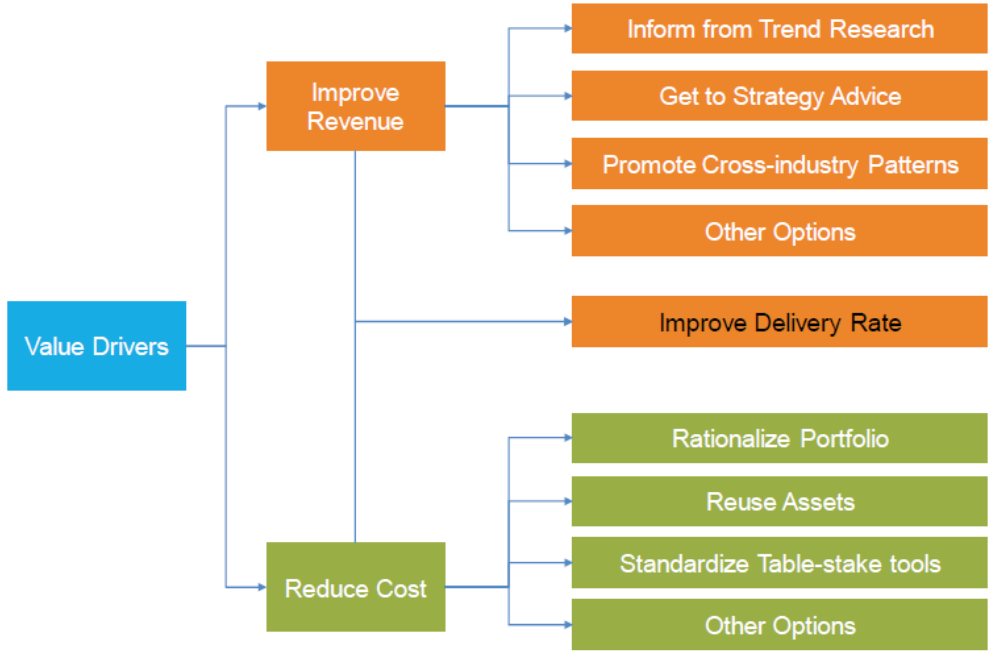
- Embed ADM processes with the organization's processes

Processes:

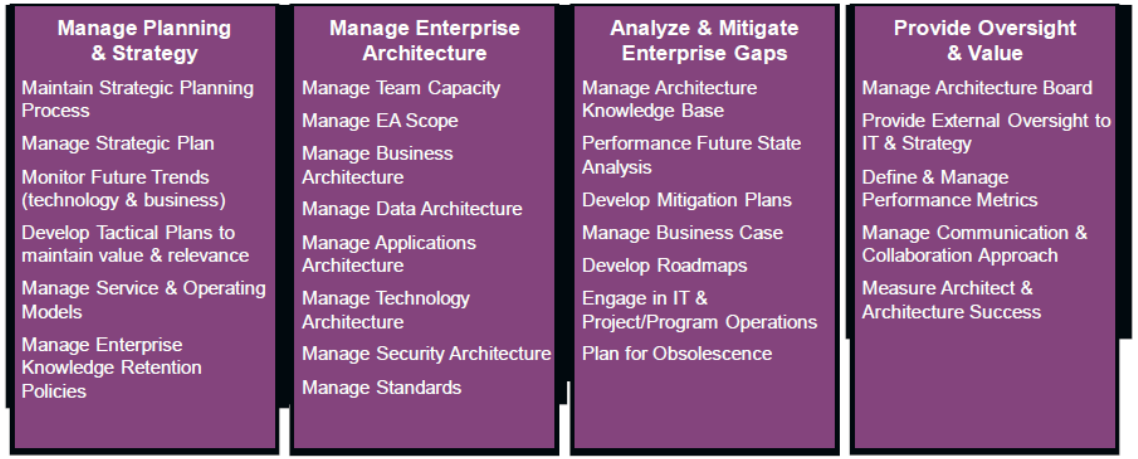
- Decision-Making Processes
- Execution Processes
- Strategy Development Processes
- Portfolio & Program Management Processes
- Project Initiation Processes
- Budgeting Processes
- Operational Management Processes
- Governance Processes
- Risk Management Processes

EA Capabilities Realization

- EA Roadmap
  - EA Value: map to Enterprise Value



- EA Capability Model



- EA Evolving

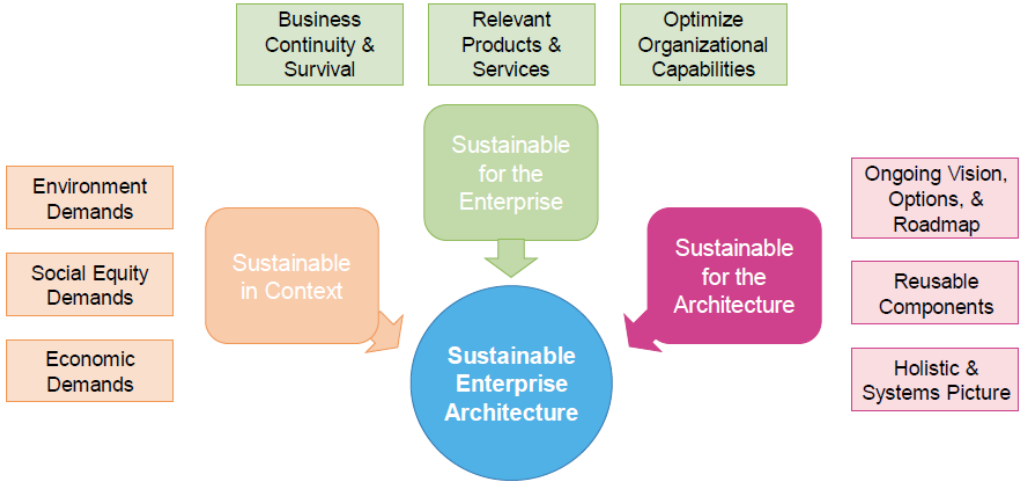
1. Purpose
   - Cost Control
   - Risk Optimization
   - Strategy Development
2. Trusted Advisor = Instigator of Change
3. Change Management

EA Capabilities Realization

- EA Evolving

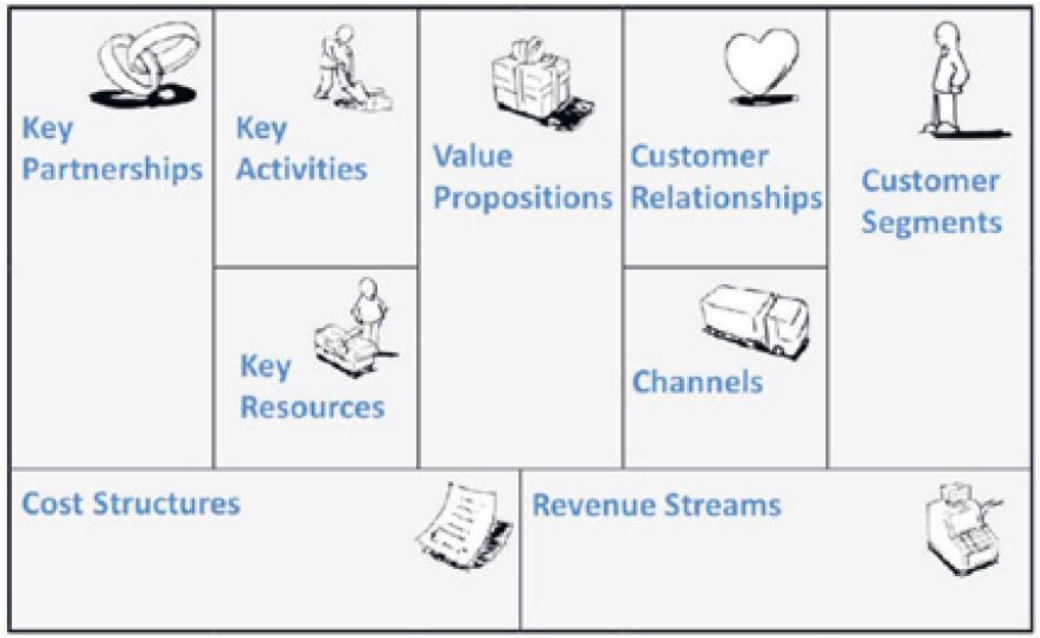
1. Purpose
    - Cost Control
    - Risk Optimization
    - Strategy Development
2. Trusted Advisor = Instigator of Change
3. Change Management
4. Sustaining and Maturing

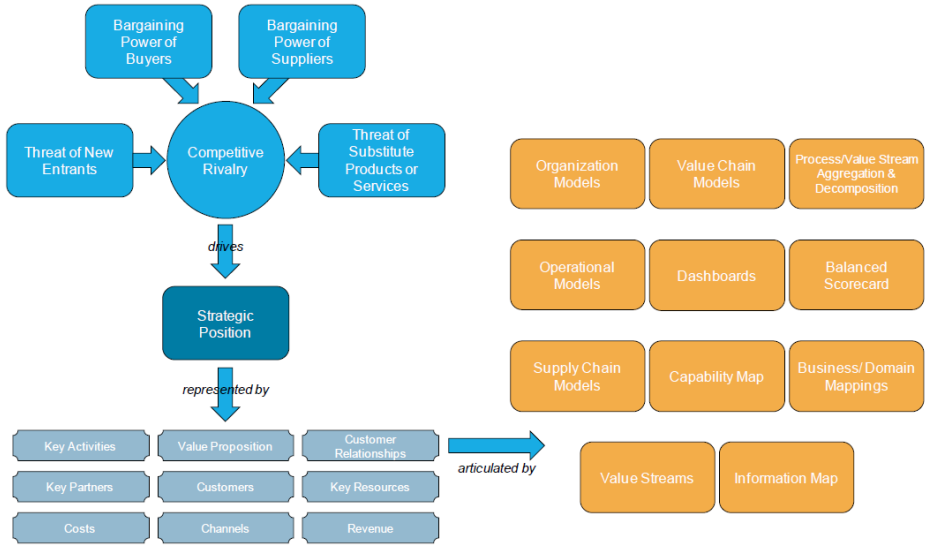
- Sustainable EA
    - Sustainable in Context
    - Sustainable for the Enterprise
    - Sustainable for the Architecture



Business Architecture

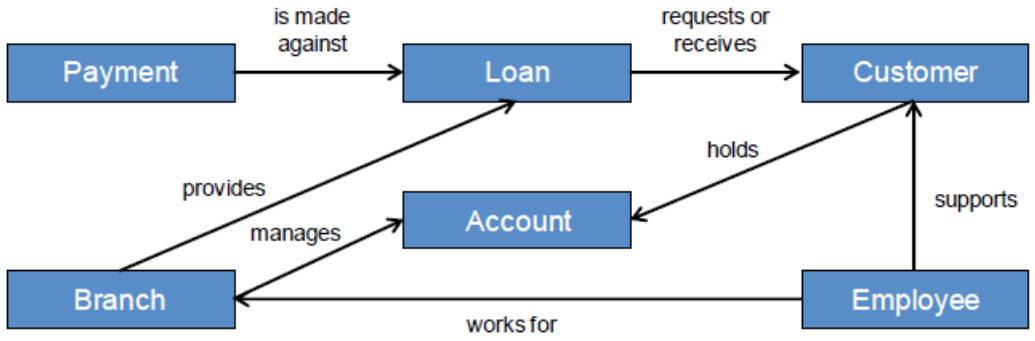
Business Model



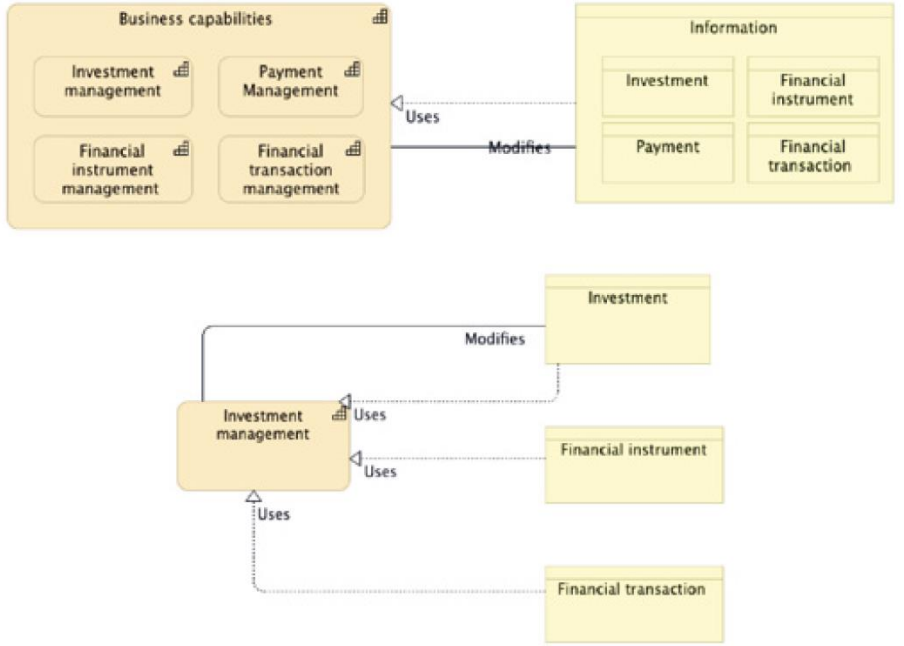


Information Model

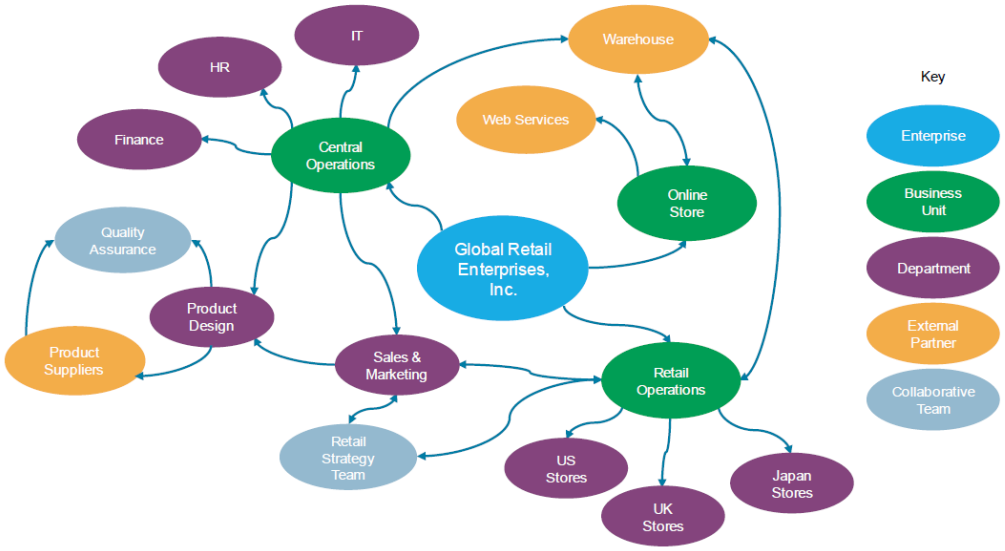
Information Map:



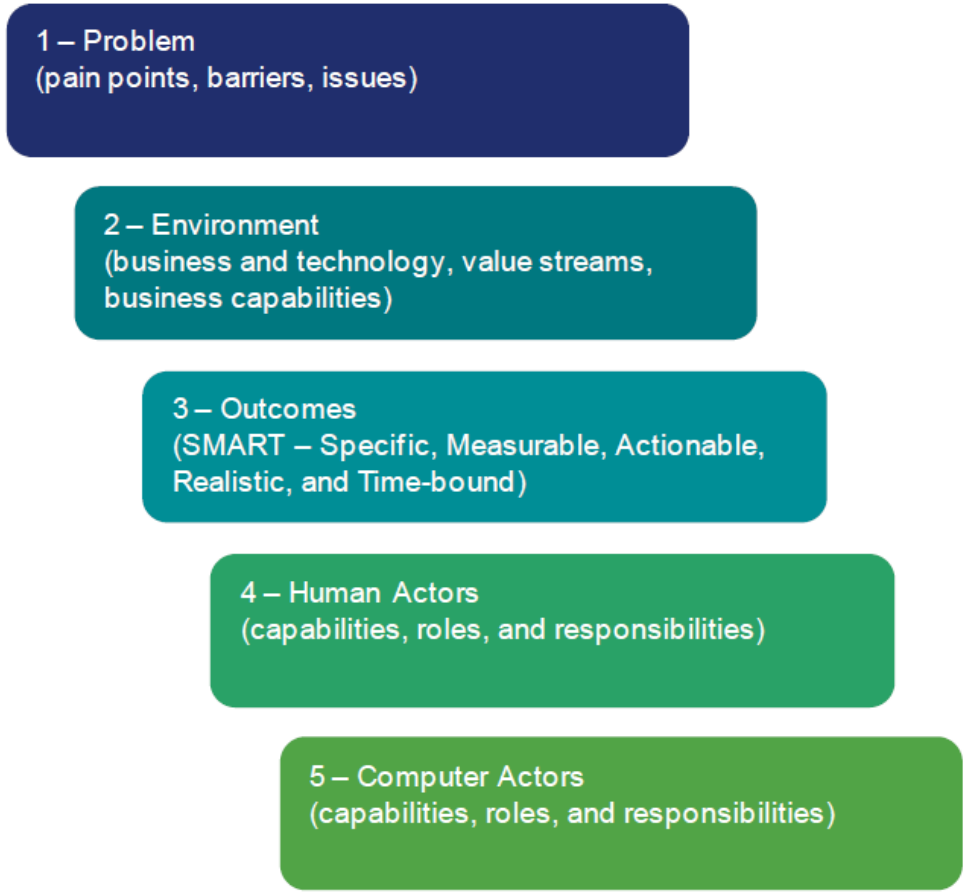
Information/Business Capability Map:



Organization Map



Business Scenarios



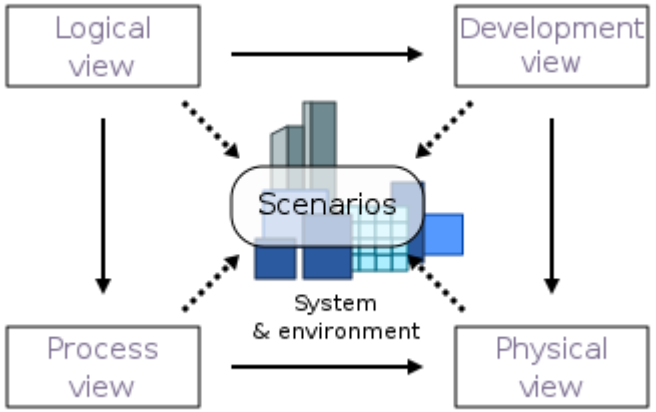
Steps:

- Plan
- Gather Information
- Analyze/Process
- Document
- Review

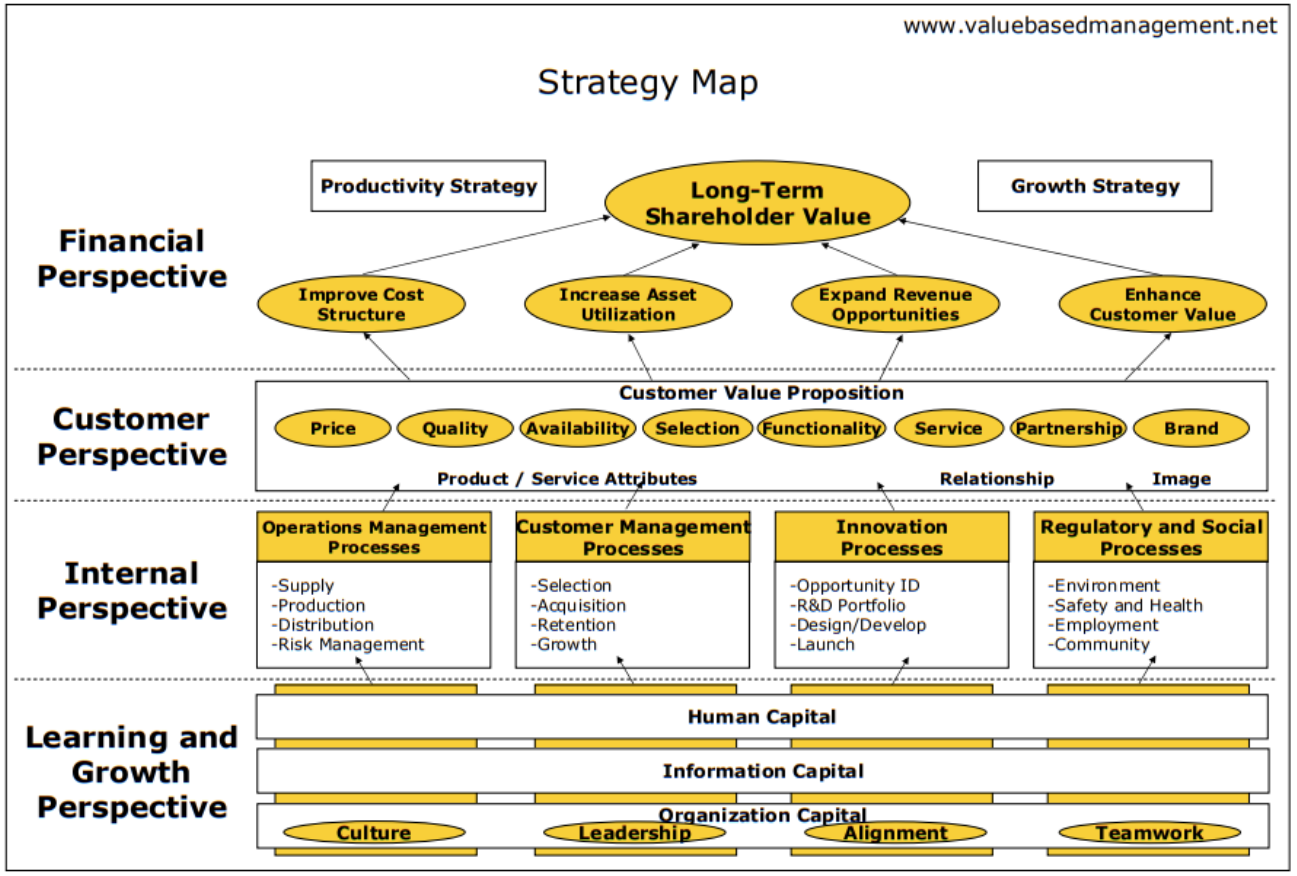
Appendix

4+1 View

- Logical View:
  - Functionality of the system
  - Class diagrams
  - State diagrams
- Process View
  - Dynamics of the system
  - Sequence diagram
  - Communication diagram
  - Activity diagram
- Development View
  - Implementation of the system
  - Component diagram
- Physical View
  - Engineering view of the system
  - Deployment diagram
- + Scenaro's
  - Use Case diagrams



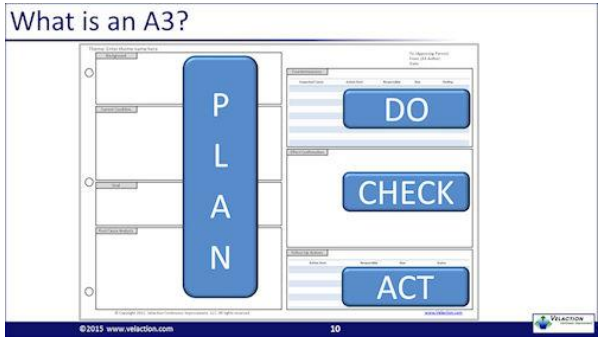
Kaplan Strategy Map

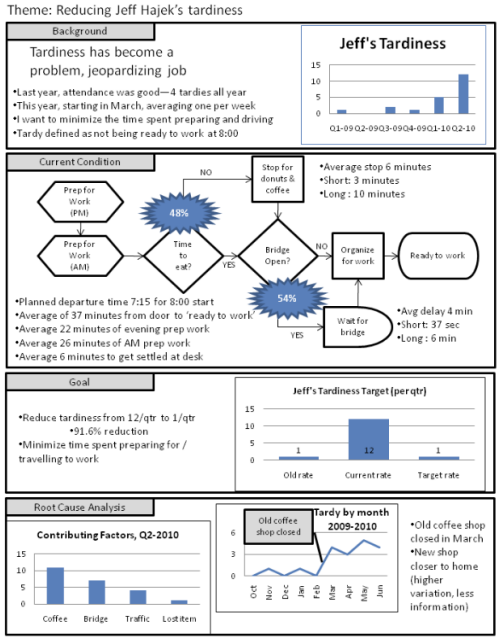


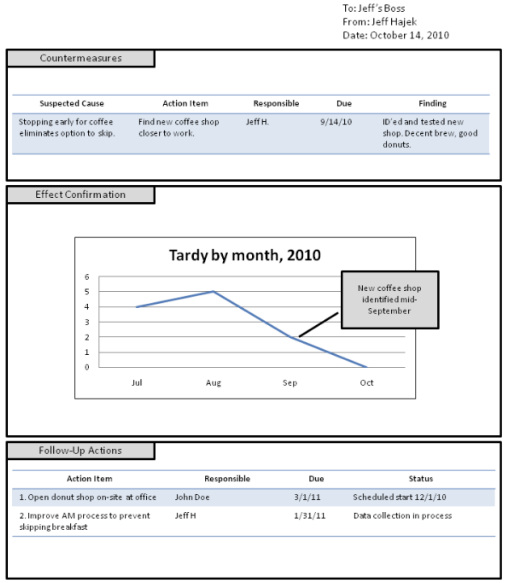
A3 Thinking

PDCA:

- Plan
- Do
- Check
- Act







- Background
- Current Condition
- Goal
- Root Cause Analysis
- Countermeasures
- Effect Confirmation
- Follow-Up Actions