TOGAF

Version 9 Enterprise Edition

Sample Catalogs, Matrices and Diagrams

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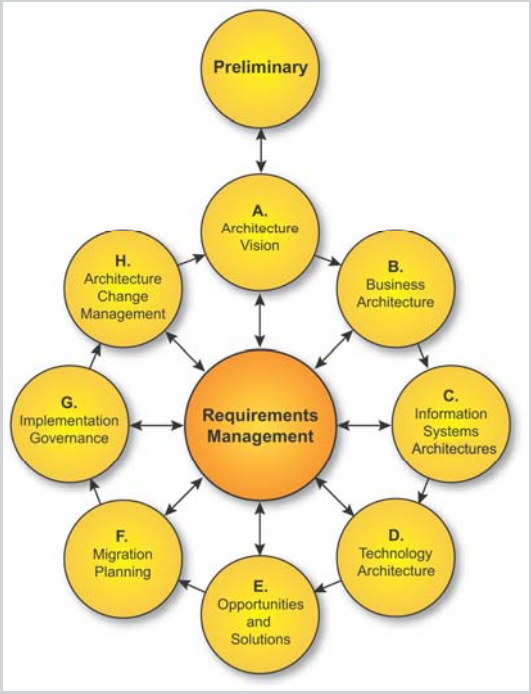

Sample Catalogs, Matrices and Diagrams

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Objectives

The objectives of this presentation are to illustrate:

- TOGAF 9 Catalogs, Matrices and Diagrams
- What they consist of
- Examples
- How they can be used

The examples shown are illustrative. The exact format of the catalogs, matrices and diagrams will depend on the tools used and adaptations to TOGAF for the specific EA.

TOGAF 9
Catalogs, Matrices and Diagrams

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P

Preliminary Phase
Catalogs, Matrices and Diagrams

Catalogs
- **Principles Catalog**

Matrices

Diagrams

P

Catalogs

Catalog	Purpose
Principles Catalog	The Principles catalog captures principles of the business and architecture principles that describe what a "good" solution or architecture should look like. Principles are used to evaluate and agree an outcome for architecture decision points. Principles are also used as a tool to assist in architectural governance of change initiatives. The Principles catalog contains the following metamodel entities: * Principle

Architecture Vision
Catalogs, Matrices and Diagrams

Catalogs

Matrices
- Stakeholder Map Matrix

Diagrams
- Value Chain Diagram
- Solution Concept Diagram

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Example Stakeholder Map Matrix

Stakeholder	Involvement	Class	Relevant Artifacts
CxO	This stakeholder group is interested in the high-level drivers, goals and objectives of the organization, and how these are translated into an effective process and IT architecture to advance the business	Keep Satisfied	Business Footprint Goal/Objective/Service Model Organization Chart
Program Management Office	This stakeholder group is interested in prioritizing, funding, and aligning change activity. An understanding of project content and technical dependencies adds a further dimension of richness to portfolio management and decision making.	Keep Satisfied	Roadmaps Business Footprint Application Communication Functional Decomposition
HR	Key features of the enterprise architecture are roles and Actors that support the functions, applications, and technology of the organization. HR are important stakeholders in ensuring that the correct roles and actors are represented.	Keep Informed	Organization Chart Organization/Actor/ Location

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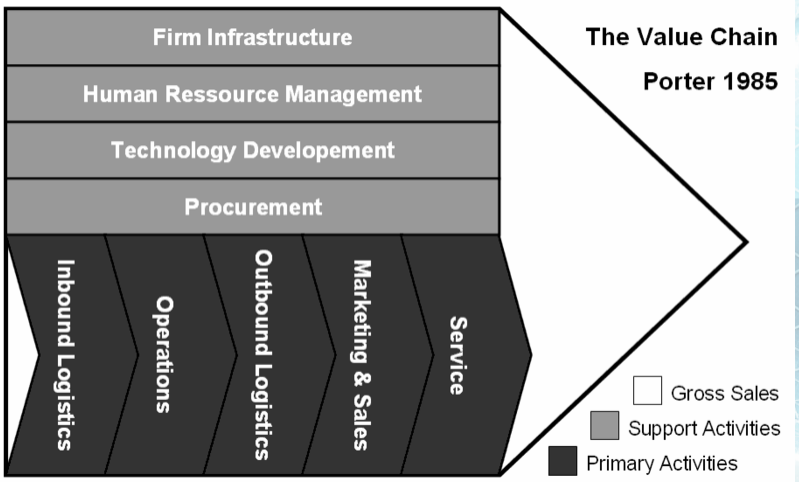
A

Example Value Chain Diagram



Source: Wikipedia.org

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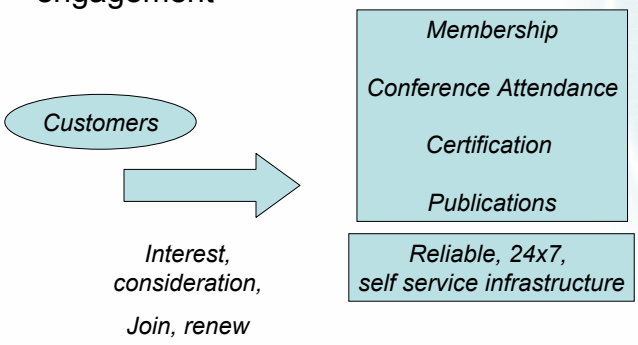
A

Example Solution Concept Diagram

- A high-level representation of the solution envisaged
- A *pencil sketch* of the expected solution at the outset of the engagement



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B

Business Architecture
Catalogs, Matrices and Diagrams

Catalogs
- Organization/Actor catalog
- Driver/Goal/Objective catalog
- Role catalog
- Business Service/Function catalog
- Location catalog
- Process/Event/Control/Product catalog
- Contract/Measure catalog

Matrices
- Business Interaction matrix
- Actor/Role matrix

Diagrams
- Business Footprint diagram
- Business Service/Information diagram
- Functional Decomposition diagram
- Product Lifecycle diagram
- Goal/Objective/Service diagram
- Use-Case diagram
- Organization Decomposition diagram
- Process Flow diagram
- Event diagram

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B

Catalogs

Catalog	Purpose
Organization/ Actor Catalog	A definitive listing of all participants that interact with IT, including users and owners of IT systems. It contains the following metamodel entities: •Organization Unit, Actor Location (may be included in this catalog if an independent Location catalog is not maintained)
Driver/Goal/ Objective Catalog	A cross-organizational reference of how an organization meets its drivers in practical terms through goals, objectives, and (optionally) measures. It contains the following metamodel entities: •Organization Unit, Driver, Goal, Objective, Measure (may optionally be included)
Role Catalog	The purpose of the Role catalog is to provide a listing of all authorization levels or zones within an enterprise. Frequently, application security or behavior is defined against locally understood concepts of authorization that create complex and unexpected consequences when combined on the user desktop. It contains the following metamodel entities: •Role

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Catalogs

Catalog	Purpose
Business Service / Function Catalog	A functional decomposition in a form that can be filtered, reported on, and queried, as a supplement to graphical Functional Decomposition diagrams. It contains the following metamodel entities: •Organization Unit,Business Function, Business Service, Information System Service (may optionally be included here)
Location Catalog	A listing of all locations where an enterprise carries out business operations or houses architecturally relevant assets, such as data centers or end-user computing equipment. It contains the following metamodel entities: •Location
Process/ Event/ Control/ Product Catalog	The Process/Event/Control/Product catalog provides a hierarchy of processes, events that trigger processes, outputs from processes, and controls applied to the execution of processes. This catalog provides a supplement to any Process Flow diagrams that are created and allows an enterprise to filter, report, and query across organizations and processes to identify scope, commonality, or impact. It contains the following metamodel entities: •Process, Event, Control, Product

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B

Catalogs

Catalog	Purpose
Contract/ Measure Catalog	A listing of all agreed service contracts and (optionally) the measures attached to those contracts. It forms the master list of service levels agreed to across the enterprise. It contains the following metamodel entities: •Business Service •Information System Service (optionally) •Contract •Measure

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Matrices

- Business Interaction matrix
- Actor/Role matrix

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B

Business Interaction Matrix

- The purpose of this matrix is to depict the relationship interactions between organizations and business functions across the enterprise.

	Providing Business Services				
Consuming Business Services	***Engineering***	***Procurement***	***Manufacturing***	***Sales and Distribution***	***Customer Service***
Engineering					
Procurement					
Manufacturing		Contract for supply of materials		Contract for supply of sales forecasts	
Sales and Distribution	Contract for supply of product specification		Contract for supply of product		
Customer Service				Contract for fulfillment of customer orders	

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Actor/role Matrix

- The purpose of this matrix is to show which actors perform which roles, supporting definition of security and skills requirements.

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	Office of CIO Actors		Steering Group Actors			Business Unit Actors			Strategy and Architecture Actors					Infrastructure Implementation Actors				
	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 Manager	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	

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Diagrams

- Business Footprint diagram
- Business Service/Information diagram
- Functional Decomposition diagram
- Product Lifecycle diagram
- Goal/Objective/Service diagram
- Use-Case diagram
- Organization Decomposition diagram
- Process Flow diagram
- Event diagram

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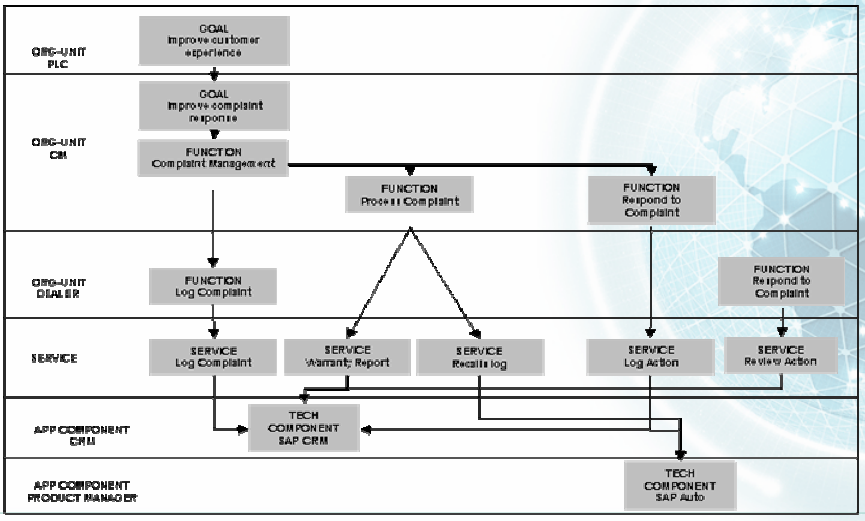
Business Footprint Diagram

- Describes the links between business goals, organizational units, business functions, and services, and maps these functions to the technical components delivering the required capability.
- Demonstrates only the key facts linking organization unit functions to delivery services and is utilized as a communication platform for senior-level (CxO) stakeholders

B

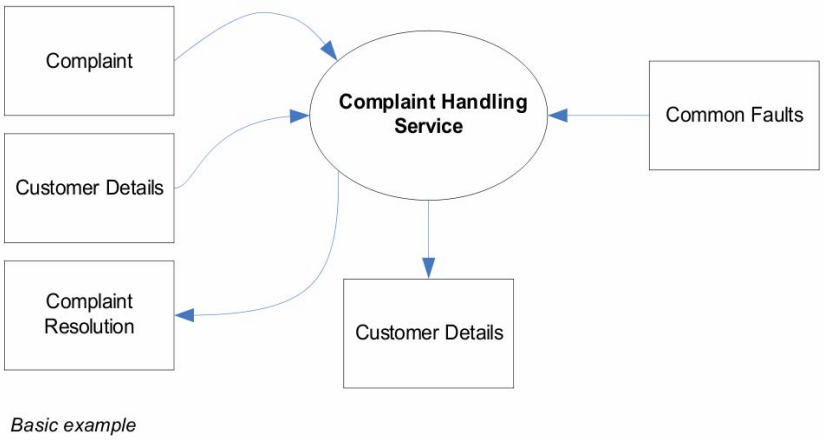
Example Business Footprint Diagram



B Business Service/Information Diagram

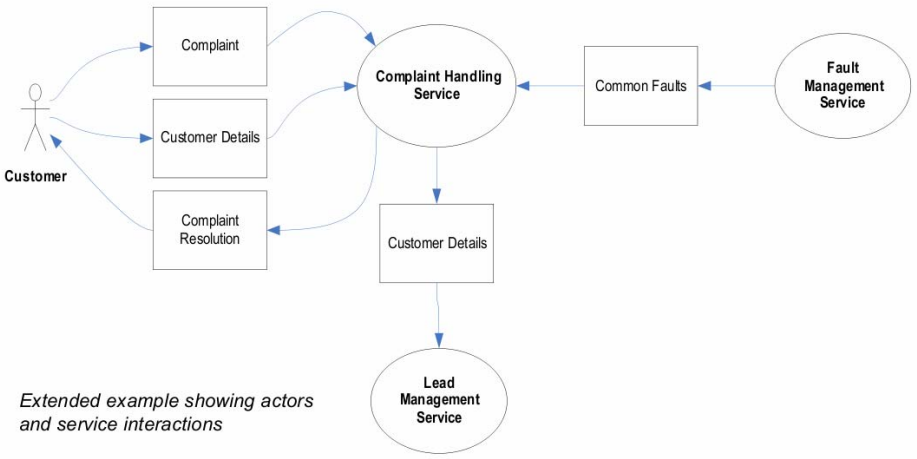
- Shows the information needed to support one or more business services.
- Shows what data is consumed by or produced by a business service and may also show the source of information.
- Shows an initial representation of the information present within the architecture and therefore forms a basis for elaboration and refinement within Phase C (Data Architecture).

B Example Business Service/Information Diagram



Basic example

B Example Business Service/Information Diagram



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B Functional Decomposition Diagram

- It shows on a single page the capabilities of an organization that are relevant to the consideration of an architecture.
- By examining the capabilities of an organization from a functional perspective, it is possible to quickly develop models of what the organization does without being dragged into extended debate on how the organization does it.

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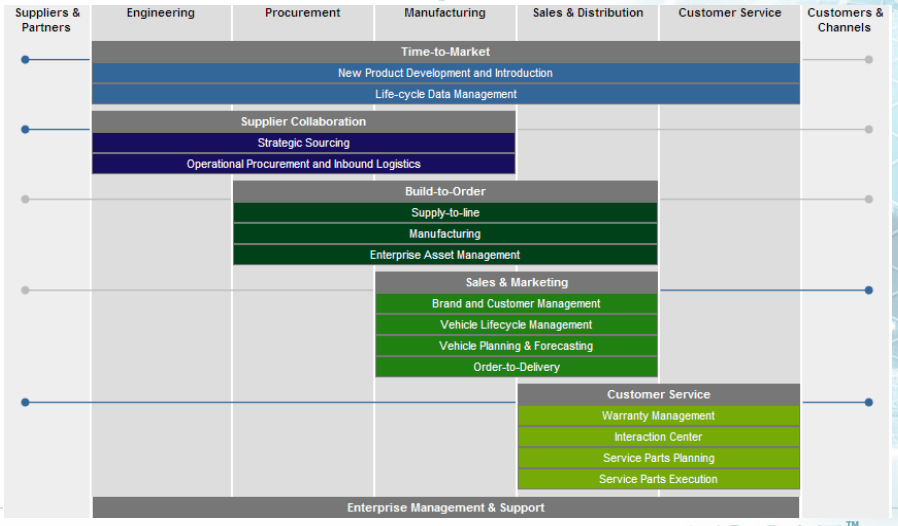
B

Example Functional Decomposition Diagram



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B

Product Lifecycle Diagram

- This assists in understanding the lifecycles of key entities within the enterprise.
- Understanding product lifecycles is becoming increasingly important with respect to environmental concerns, legislation, and regulation where products must be tracked from manufacture to disposal.
- Equally, organizations that create products that involve personal or sensitive information must have a detailed understanding of the product lifecycle during the development of Business Architecture in order to ensure rigor in design of controls, processes, and procedures. Examples of this include credit cards, debit cards, store/loyalty cards, smart cards, user identity credentials (identity cards, passports, etc.).

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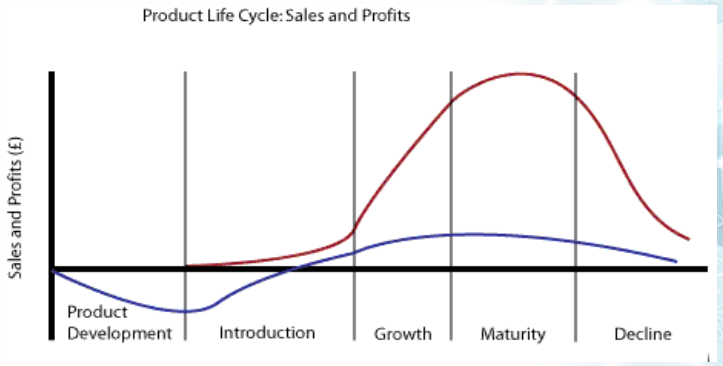
B

Example Product Lifecycle Diagram



Source: Kotler and Armstrong, 2004

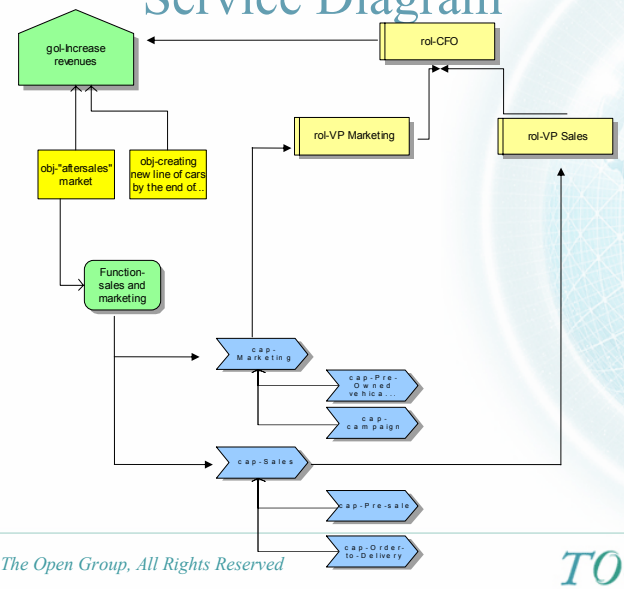
B

Goal/Objective/Service Diagram

- This defines the ways in which a service contributes to the achievement of a business vision or strategy.
- Services are associated with the drivers, goals, objectives, and measures that they support, allowing the enterprise to understand which services contribute to similar aspects of business performance.
- This also provides qualitative input on what constitutes high performance for a particular service.

B

Example Goal/Objective/ Service Diagram



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Business Use-case Diagram

- This displays the relationships between consumers and providers of business services.
- Business services are consumed by actors or other business services and the Business Use-Case diagram provides added richness in describing business capability by illustrating how and when that capability is used.
- They help to describe and validate the interaction between actors and their roles to processes and functions.
- As the architecture progresses, the use-case can evolve from the business level to include data, application, and technology details. Architectural business use-cases can also be re-used in systems design work.

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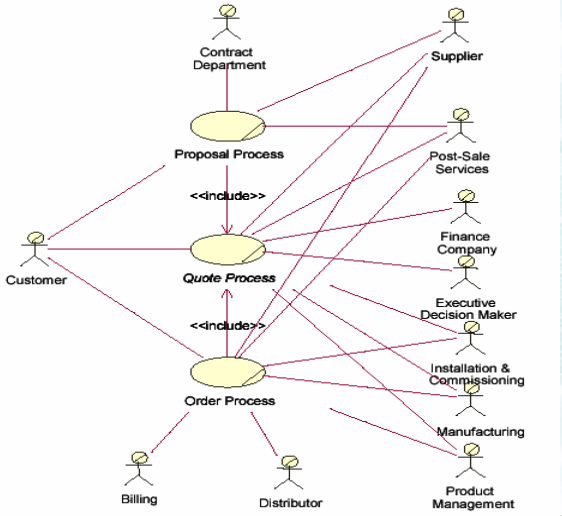
B

Example Use-case Diagram



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Organization Decomposition Diagram

- This describes the links between actor, roles, and location within an organization tree.
- An organization map should provide a chain of command of owners and decision-makers in the organization.

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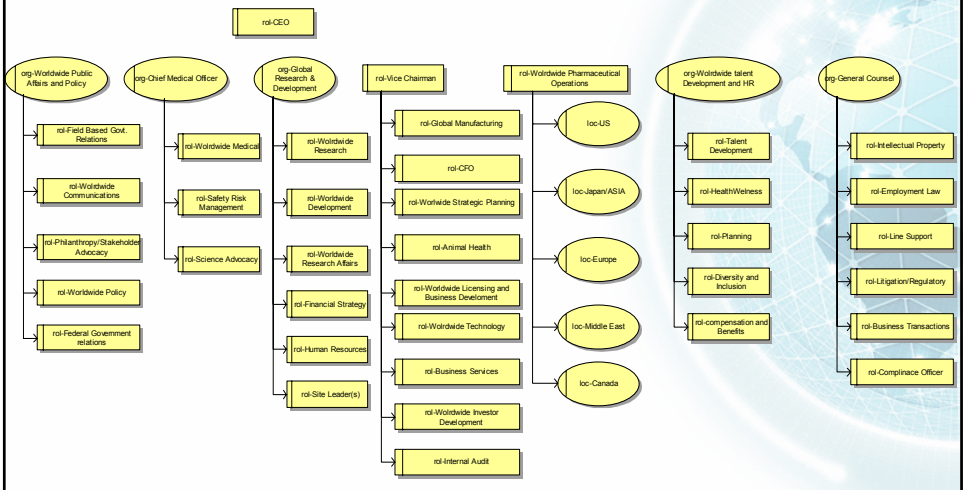
B Example Organization Decomposition Diagram



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B Process Flow Diagram

- This depicts all models and mappings related to the process metamodel entity.
- It shows sequential flow of control between activities and may utilize swim-lane techniques to represent ownership and realization of process steps.
- In addition to showing a sequence of activity, process flows can also be used to detail the controls that apply to a process, the events that trigger or result from completion of a process, and also the products that are generated from process execution.

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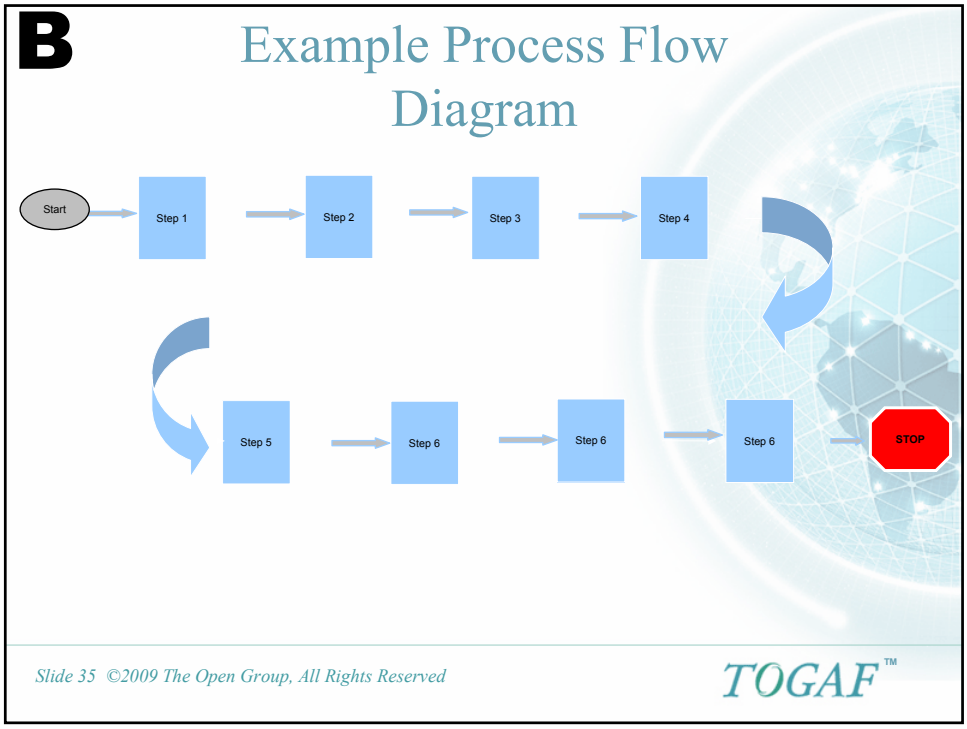
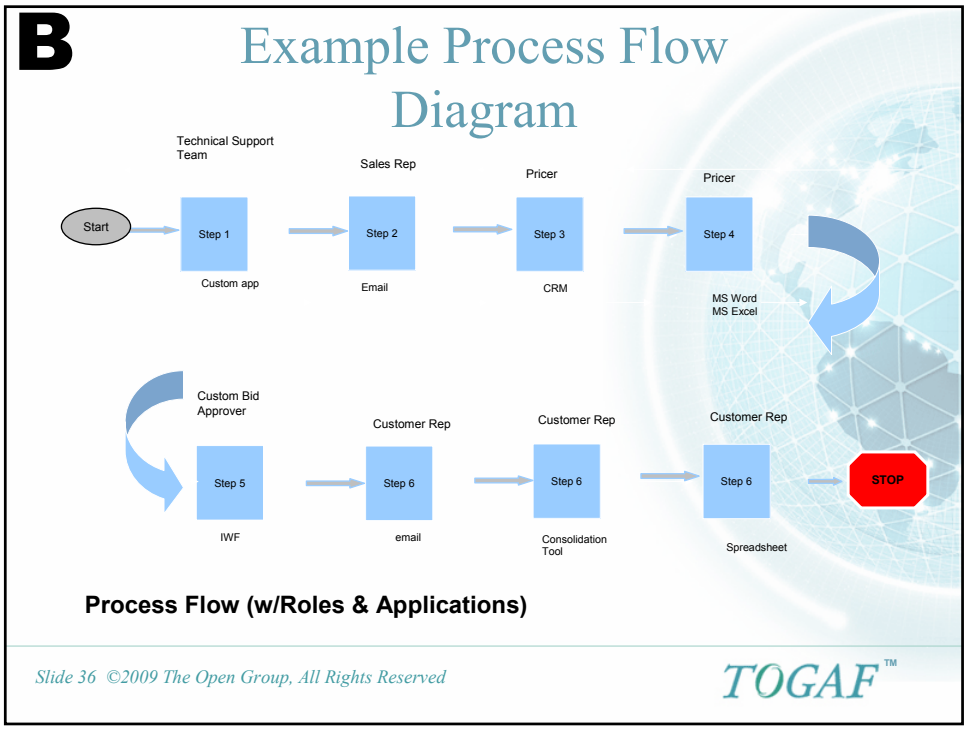




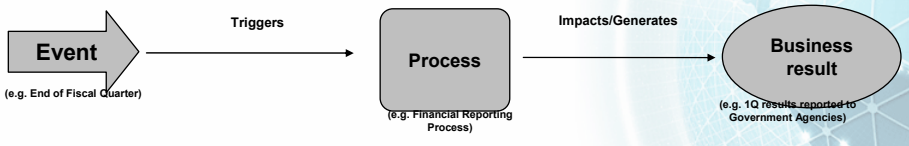
B

Events Diagram

- This depicts the relationship between events and process.
- Certain events - such as arrival of information (e.g. a customer's sales order) or a point in time (e.g. end of fiscal quarter) cause work and actions to be undertaken within the business.

B

Example Events Diagram



B

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 fulfilment 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

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C

Data Architecture
Catalogs, Matrices and Diagrams

Catalogs
- Data Entity/Data Component catalog

Matrices
- Data Entity/Business Function matrix
- System/Data matrix

Diagrams
- Class diagram
- Data Dissemination diagram
- Data Security diagram
- Class Hierarchy diagram
- Data Migration diagram
- Data Lifecycle diagram

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C

Catalogs

Catalog	Purpose
•Data Entity/Data Component Catalog	To identify and maintain a list of all the data use across the enterprise, including data entities and also the data components where data entities are stored. It contains the following metamodel entities: •Data Entity •Logical Data Component •Physical Data Component

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C

Matrices

- Data Entity/Business Function matrix
- System/Data matrix

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Data Entity/Business Function Matrix

- The purpose of the Data Entity/Business Function matrix is to depict the relationship between data entities and business functions within the enterprise.
- The mapping of the Data Entity-Business Function relationship enables the following to take place:
  - Assignment of ownership of data entities to organizations
  - Understand the data and information exchange requirements business services
  - Support the gap analysis and determine whether any data entities are missing and need to be created
  - Define system of origin, system of record, and system of reference for data entities
  - Enable development of data governance programs across the enterprise (establish data steward, develop data standards pertinent to the business function, etc.)

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Example Data Entity/Business Function Matrix

BUSINESS FUNCTION (Y-AXIS) AND DATA ENTITY (X-AXIS)	CUSTOMER MASTER	BUSINESS PARTNER	CUSTOMER LEADS	PRODUCT MASTER
Customer Relationship Management	▪ Business partner data management service ▪ Owner – Sales & Marketing business unit executive ▪ Function can Create, read, update and delete customer master data	▪ Business partner data management service ▪ Owner of data entity (person or organization) ▪ Function can Create, read, update and delete	▪ Lead Processing Service ▪ Owner – Customer Relationship Manager ▪ Function can only Create, read, update customer leads	▪ N/A
Supply Chain Management	▪ Customer Requirement Processing Service ▪ Owner – Supply Chain Manager	▪ N/A	▪ N/A	▪ Product data management service ▪ Owner – Global product development organization

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System/Data Matrix

- The purpose of the System/Data matrix is to depict the relationship between systems (i.e., application components) and the data entities that are accessed and updated by them.
- Systems will create, read, update, and delete specific data entities that are associated with them. For example, a CRM application will create, read, update, and delete customer entity information.

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Example System/Data Matrix

APPLICATION (Y-AXIS) AND DATA (X-AXIS)	DESCRIPTION OR COMMENTS	DATA ENTITY	DATA ENTITY TYPE
CRM	▪System of record for customer master data	▪Customer data	▪Master data
Commerce Engine	▪System of record for order book	▪Sales orders	▪Transactional data
Sales Business Warehouse	▪Warehouse and data mart that supports North American region	▪Intersection of multiple data entities (e.g. All sales orders by customer XYZ and by month for 2006)	▪Historical data

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C

Diagrams

- Class diagram
- Data Dissemination diagram
- Data Security diagram
- Class Hierarchy diagram
- Data Migration diagram
- Data Lifecycle diagram

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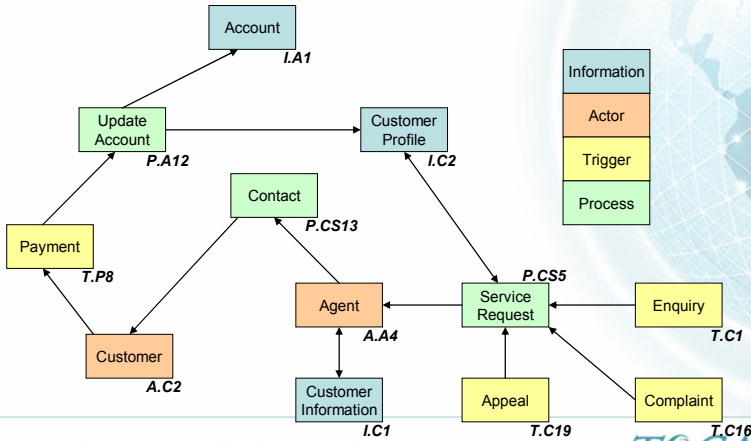
C

Class Diagram

- The purpose is to depict the relationships among the critical data entities (or classes) within the enterprise.



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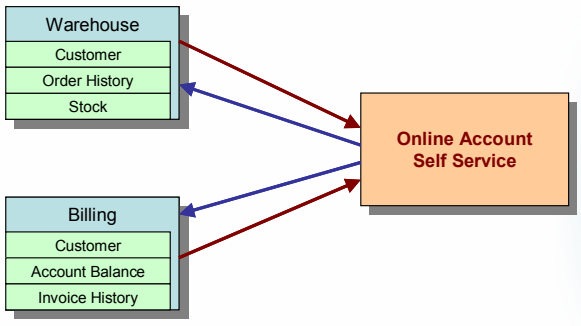
Data Dissemination Diagram

- The purpose of the Data Dissemination diagram is to show the relationship between data entity, business service, and application components.
- The diagram should show how the logical entities are to be physically realized by application components.
- Additionally, the diagram may show data replication and system ownership of the master reference for data.

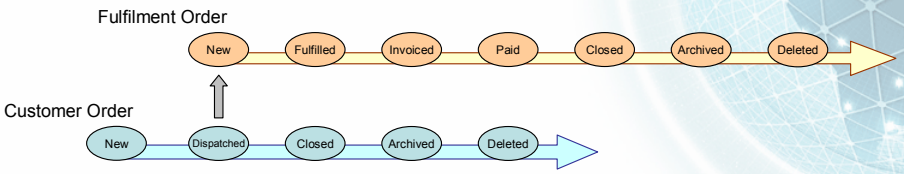
Example Data Dissemination Diagram



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

Data Lifecycle Diagram

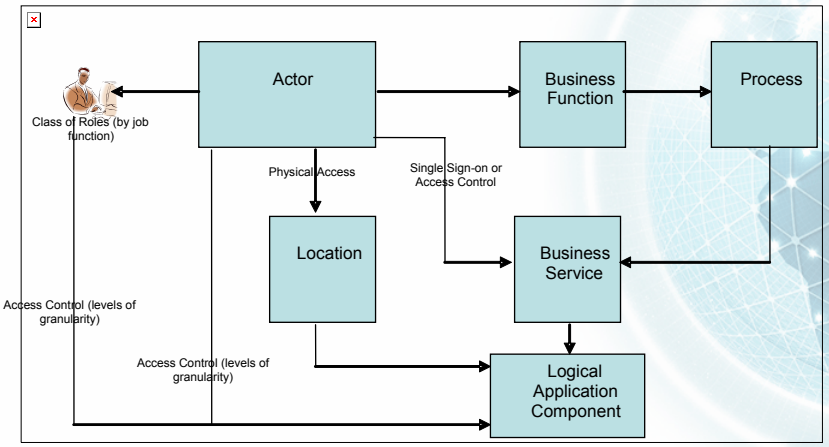
- The Data Lifecycle diagram is an essential part of managing business data throughout its lifecycle from conception until disposal within the constraints of the business process.



Data Security Diagram

- The purpose of the Data Security diagram is to depict which actor (person, organization, or system) can access which enterprise data.
- This relationship can also be shown in a matrix form between two objects or can be shown as a mapping.

Example Data Security Diagram



Example Data Security Matrix

ACTOR	CLASS OF ROLES (JOB FUNCTION)	FUNCTION	BUSINESS SERVICE	LOCATION	TYPE OF ACCESS
Financial Analyst	SOA Portfolio Financial Analyst	Financial Analysis	SOA portfolio service	▪ NA (US, CA) ▪ EMEA (UK, DE) ▪ APJ	▪ Physical ▪ Access Control (tables xyz only)
Procurement & Spend Analyst	Procurement Management and Control	WW Direct Procurement	Supplier portal Service	▪ NA (US Midwest)	▪ Access control
WW Contracts System (application)	Not applicable	WW Direct Procurement	Supplier Portal Service	▪ LA	▪ Access control (system to system)
WW Product Development (Org Unit)	Geo Brand Managers	WW Direct Procurement	Supplier Portal Service	▪ WW (all Geos)	▪ Access Control

Data Migration Diagram

- The purpose of the Data Migration diagram is to show the flow of data from the source to the target applications.
- The diagram will provide a visual representation of the spread of sources/targets and serve as a tool for data auditing and establishing traceability.

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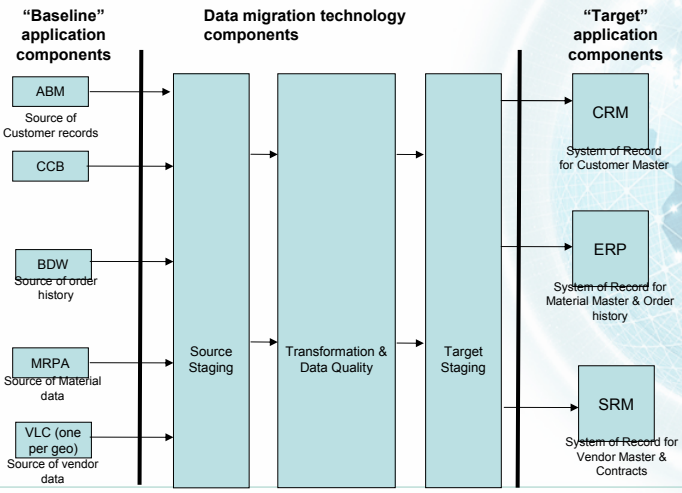
Example Data Migration Diagram



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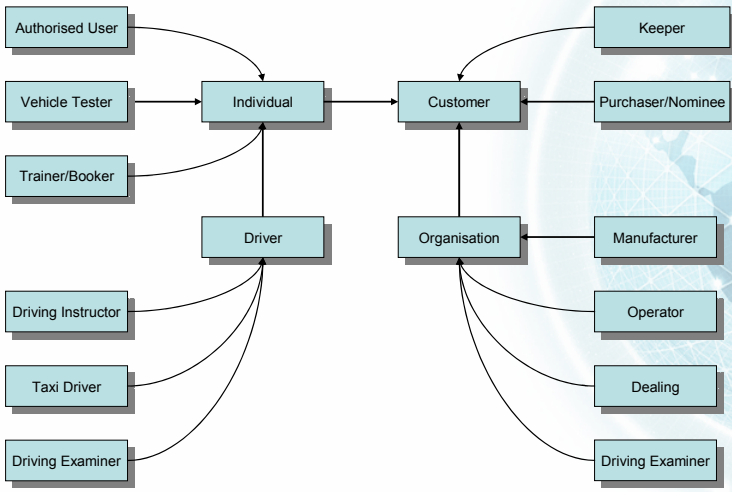
Example Data Migration Mapping

SOURCE LOGICAL APPLICATION COMPONENT	SOURCE DATA ELEMENT	TARGET LOGICAL APPLICATION COMPONENT	TARGET DATA ELEMENT
ABM	Cust_Name	CRM	CUSTNAME
	Cust_Street_Addr		CUSTADDR_LINE1
	Cust_Street_Addr		CUSTADDR_LINE2
	Cust_Street_Addr		CUSTADDR_LINE3
	Cust_ContactName		CUSTCONTACT
	Cust_Tele		CUSTTELEPHONE

Class Hierarchy Diagram

- The purpose of the Class Hierarchy diagram is to show the technical stakeholders a perspective of the class hierarchy.
- This diagram gives the stakeholders an idea of who is using the data, how, why, and when.

Example Class Hierarchy Diagram



Application Architecture
Catalogs, Matrices and Diagrams

Catalogs
- Application Portfolio catalog
- Interface catalog

Matrices
- System/Organization matrix
- Role/System matrix
- System/Function matrix
- Application Interaction matrix

Diagrams
- Application Communication diagram
- Application and User Location diagram
- System Use-Case diagram
- Enterprise Manageability diagram
- Process/System Realization diagram
- Software Engineering diagram
- Application Migration diagram
- Software Distribution diagram

Catalogs

Catalog	Purpose
Application Portfolio Catalog	To identify and maintain a list of all the applications in the enterprise. This list helps to define the horizontal scope of change initiatives that may impact particular kinds of applications. An agreed Application Portfolio allows a standard set of applications to be defined and governed. It contains the following metamodel entities: •Information System Service •Logical Application Component •Physical Application Component
Interface Catalog	The purpose of the Interface catalog is to scope and document the interfaces between applications to enable the overall dependencies between applications to be scoped as early as possible. It contains the following metamodel entities: •Logical Application Component •Physical Application Component •Application *communicates with* application relationship

Matrices

- System/Organization matrix
- Role/System matrix
- System/Function matrix
- Application Interaction matrix

System/Organization Matrix

- The purpose of this matrix is to depict the relationship between systems (i.e., application components) and organizational units within the enterprise.
- The mapping of the Application Component-Organization Unit relationship is an important step as it enables the following to take place:
  - Assign usage of applications to the organization units that perform business functions
  - Understand the application support requirements of the business services and processes carried out by an organization unit
  - Support the gap analysis and determine whether any of the applications are missing and as a result need to be created
  - Define the application set used by a particular organization unit

Example System/Organization Matrix

APPLICATION (Y-AXIS) AND ORGANISATION UNIT (X-AXIS)	CUSTOMER SERVICES	PROCUREMENT AND WAREHOUSING	HR	CORPORATE FINANCE
SAP HR	X	X	X	
SIEBEL	X	X		
SAP FINANCIALS	X	X		X
PROCURESOFT	X	X		

Role/System Matrix

- The purpose of the Role/System matrix is to depict the relationship between systems (i.e., application components) and the business roles that use them within the enterprise.
- The mapping of the Application Component-Role relationship is an important step as it enables the following to take place:
  - Assign usage of applications to the specific roles in the organization
  - Understand the application security requirements of the business services and processes supporting the function, and check these are in line with current policy
  - Support the gap analysis and determine whether any of the applications are missing and as a result need to be created
  - Define the application set used by a particular business role; essential in any move to role-based computing

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Example Role/System Matrix

APPLICATION (Y-AXIS) AND FUNCTION (X-AXIS)	CALL CENTRE OPERATOR	CALL CENTRE MANAGER	FINANCE ANALYST	CHIEF ACCOUNTANT
SAP HR	X	X	X	X
SIEBEL	X	X		
SAP FINANCIALS	X	X	X	X
PROCURESOFT	X	X		

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System/Function Matrix

- The purpose of the System/Function matrix is to depict the relationship between systems (i.e., application components) and business functions within the enterprise.
- The mapping of the Application Component-Function relationship is an important step as it enables the following to take place:
  - Assign usage of applications to the business functions that are supported by them
  - Understand the application support requirements of the business services and processes carried out
  - Support the gap analysis and determine whether any of the applications are missing and as a result need to be created
  - Define the application set used by a particular business function

Example System/Function Matrix

APPLICATION (Y-AXIS) AND FUNCTION (X-AXIS)	CALL CENTRE 1ST LINE	WAREHOUSE CONTROL	VACANCY FILLING	GENERAL LEDGER MAINTENANCE
SAP HR	X	X	X	X
SIEBEL	X	X		
SAP FINANCIALS	X	X		X
PROCURESOFT	X	X		

C

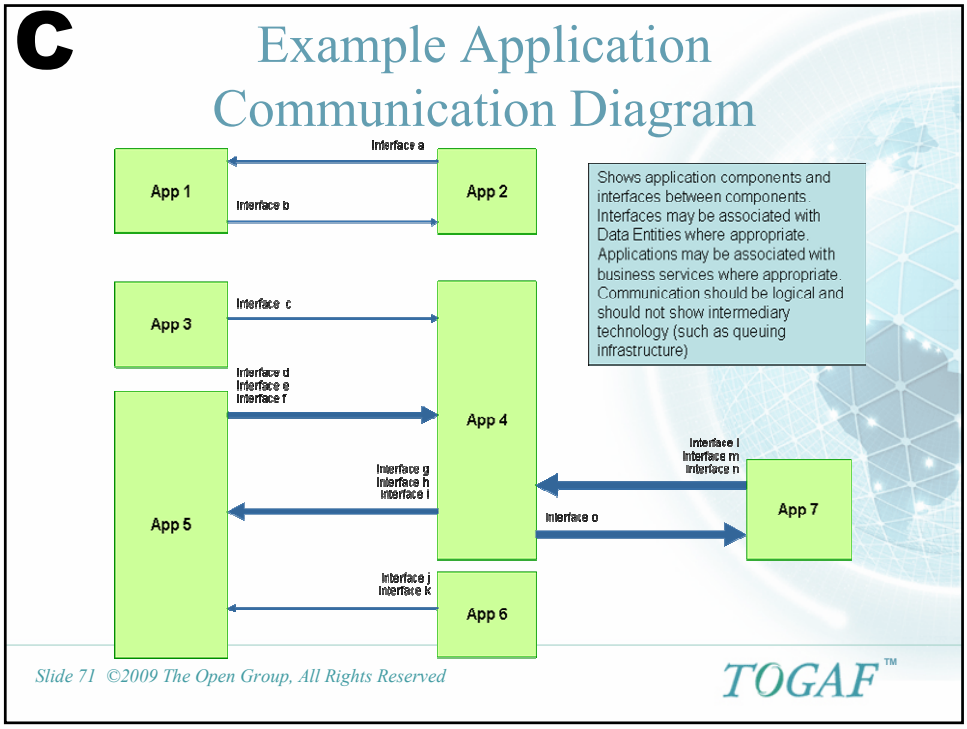
Diagrams

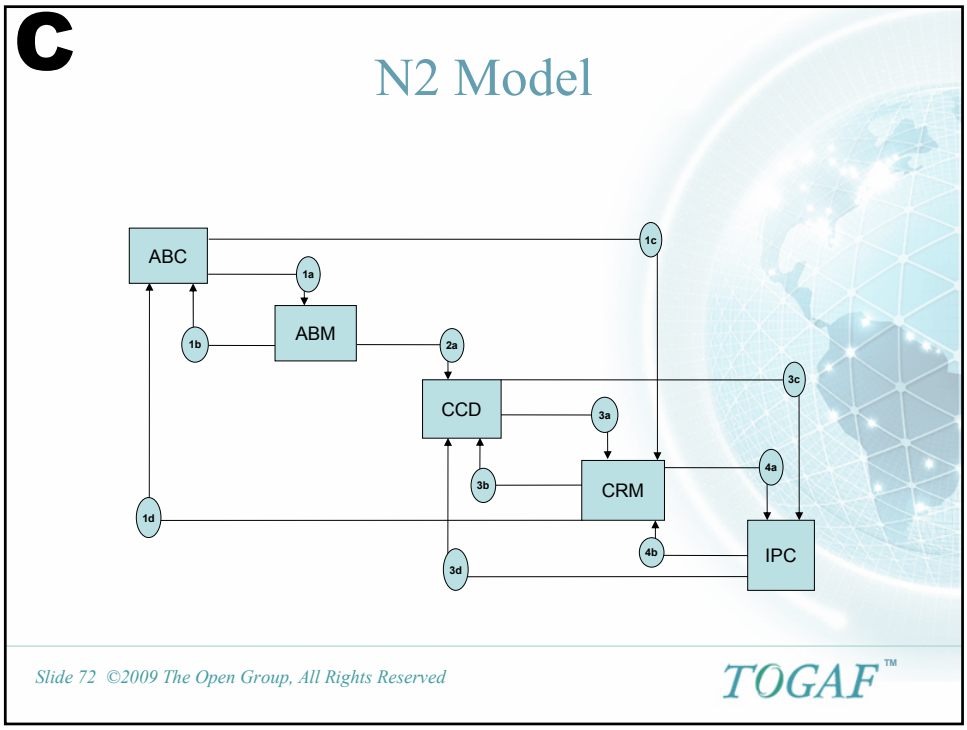
- Application Communication diagram
- N2 model or Node Connectivity diagram
- Application and User Location diagram
- System Use-Case diagram
- Enterprise Manageability diagram
- Process/System Realization diagram
- Software Engineering diagram
- Application Migration diagram
- Software Distribution diagram

C

Application Communication Diagram

- The purpose of the Application Communication diagram is to depict all models and mappings related to communication between applications in the metamodel entity.
- It shows application components and interfaces between components.
- Communication should be logical and should only show intermediary technology where it is architecturally relevant.





Information Exchange Matrix

LABEL	SOURCE	DESTINATION	DATA ENTITY	EVENT TRIGGERED
1a	ABC	ABM	Sales order (create request)	New sales order from front end
1b	ABM	ABC	Sales order (confirm create)	Order created in the backend ERP system
2a	ABM	CCD	Product catalog	Subscribe/Publish timer

Application & User Location Diagram

- The purpose of this diagram is to clearly depict the business locations from which business users typically interact with the applications, but also the hosting location of the application infrastructure.
- The diagram enables:
  - Identification of the number of package instances needed
  - Estimation of the number and the type of user licenses
  - Estimation of the level of support needed
  - Selection of system management tools, structure, and management system
  - Appropriate planning for the technological components of the business
  - Performance considerations while implementing solutions

Example Application & User Location Diagram (part 1)

APPLICATION	USER TYPE	INTERNAL, CUSTOMER OR PARTNER	USER BUSINESS LOCATION	LOCATION ADDRESS	ORG UNIT (USER BELONGS TO)
CRM	Developer Super User Administrator	Internal	NA Western Region EMEA Headquarters, UK	Chicago Sears tower office Chicago Downtown office Middlesex, London	NA Sales & Marketing EMEA Sales
SAP R/3	Test Engineers Mechanical Engineers Procurement managers	Internal	Beijing Manufacturing Plant		Manufacturing & logistics

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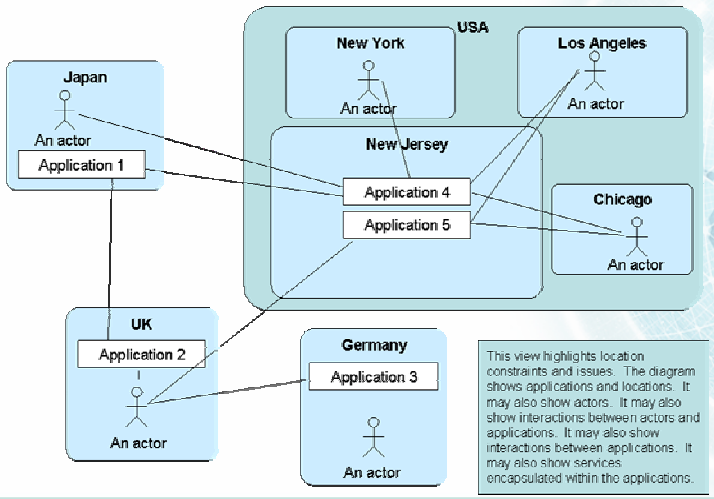
Example Application & User Location Diagram (part 2)



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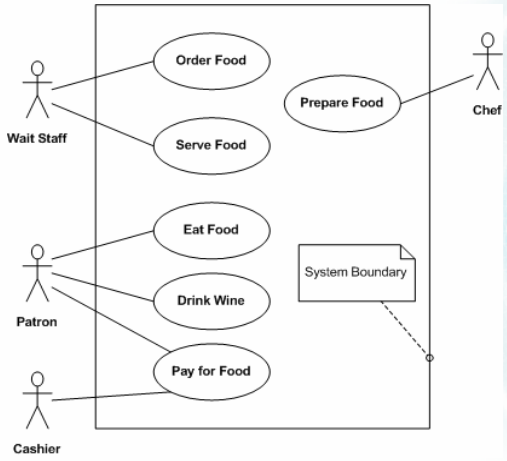
System Use Case Diagram



Source: wikipedia.org

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Enterprise Manageability Diagram

- The Enterprise Manageability diagram shows how one or more applications interact with application and technology components that support operational management of a solution.
- Analysis can reveal duplication and gaps, and opportunities in the IT service management operation of an organization.

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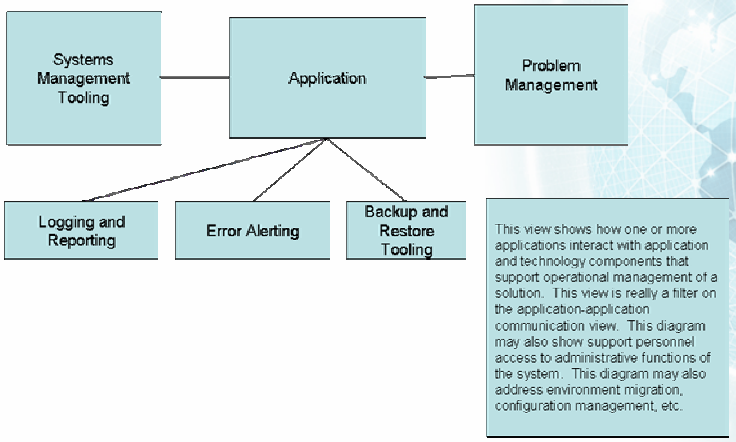
Example Enterprise Manageability Diagram



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Process/System Realization Diagram

- The purpose of the Process/System Realization diagram is to clearly depict the sequence of events when multiple applications are involved in executing a business process.
- It enhances the Application Communication diagram by augmenting it with any sequencing constraints, and hand-off points between batch and real-time processing.

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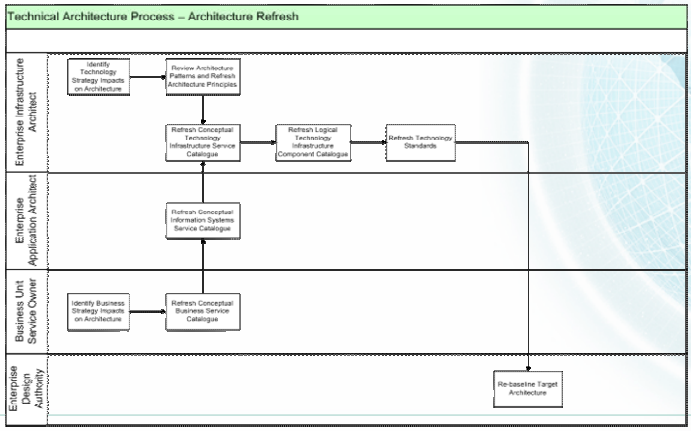
Example Process/System Realization Diagram

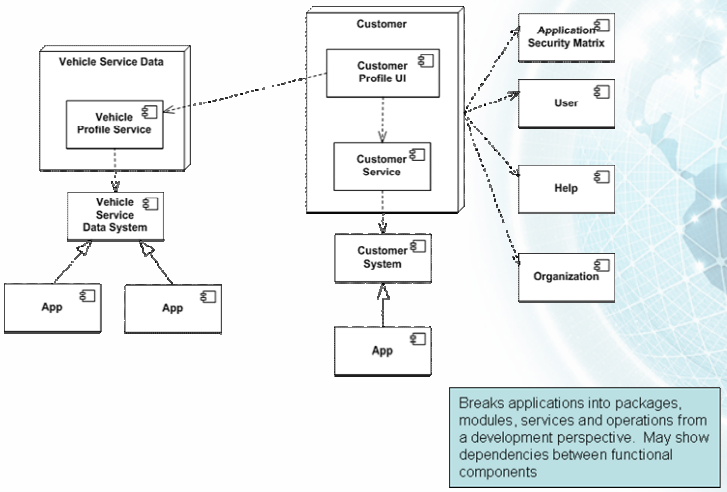
UML sequence (most detail) and activity diagrams (less detail) can be used, or a less formal swimlaned flowchart (least detail). BPMN is also an option. The decision on diagram form will depend on the level of detail and formality. Generally, the non-formal view is best suited to stakeholders, but specific areas of architecture risk need to be addressed in more detail. The diagram can show organisations, actors, application components, data entities and architecturally significant technology components.



Software Engineering Diagram

- The Software Engineering diagram breaks applications into packages, modules, services, and operations from a development perspective.
- It enables more detailed impact analysis when planning migration stages, and analyzing opportunities and solutions.
- It is ideal for application development teams and application management teams when managing complex development environments.

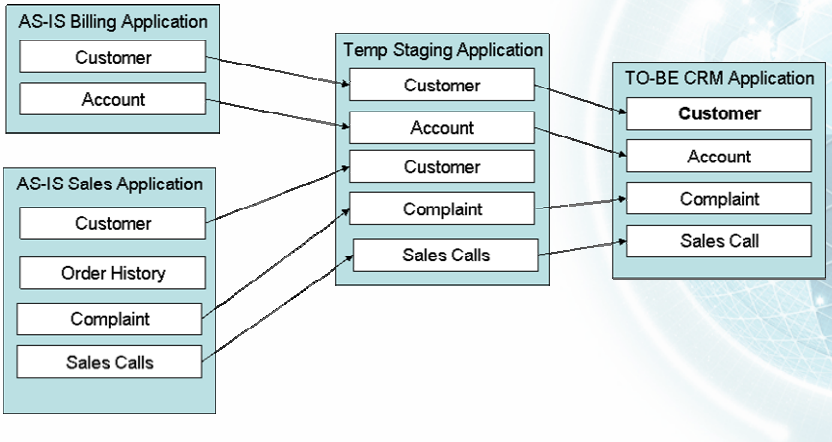
Example Software Engineering Diagram



Application/Migration Diagram

- The Application Migration diagram identifies application migration from baseline to target application components.
- It enables a more accurate estimation of migration costs
- It should be used to identify temporary applications, staging areas, and the infrastructure required to support migrations

Example Application/Migration Diagram



Software Distribution Diagram

- This diagram is a composite of the Software Engineering diagram and the Application-User Location diagram.
- Depending on the circumstances, this diagram alone may be sufficient, or may not be needed.

D

Technology Architecture
Catalogs, Matrices and Diagrams

Catalogs
- Technology Standards catalog
- Technology Portfolio catalog

- **Matrices**
- System/Technology matrix

Diagrams
- Environments and Locations diagram
- Platform Decomposition diagram
- Processing diagram
- Networked Computing/Hardware diagram
- Communications Engineering diagram

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Catalogs

- Technology Standards catalog
- Technology Portfolio catalog

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Catalogs

Catalog	Purpose
Technology Standards Catalog	This documents the agreed standards for technology across the enterprise covering technologies, and versions, the technology lifecycles, and the refresh cycles for the technology. It contains the following metamodel entities: •Platform Service, Logical Technology Component, Physical Technology Component
Technology Portfolio Catalog	The purpose of this catalog is to identify and maintain a list of all the technology in use across the enterprise, including hardware, infrastructure software, and application software. An agreed technology portfolio supports lifecycle management of technology products and versions and also forms the basis for definition of technology standards It contains the following metamodel entities: •Platform Service, Logical Technology Component, Physical Technology Component

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Matrices

- System/Technology matrix

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System/Technology Matrix

- The System/Technology matrix documents the mapping of business systems to technology platform.
- The System/Technology matrix shows:
  - Logical/Physical Application Components
  - Services, Logical Technology Components, and Physical Technology Components
  - Physical Technology Component *realizes* Physical Application Component relationships

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Example System/Technology Matrix

LOGICAL APPLICATION COMPONENT	PHYSICAL TECHNOLOGY COMPONENT	SERVER ADDRESS	IP ADDRESS
ABM	Web server - node 1	F01ws001@host.com	10.xx.xx.xx
	Web server - node 2	F01ws002@host.com	10.xx.xx.xx
	Web server - node 3	F01ws003@host.com	10.xx.xx.xx
	App server – node 1	F02as001@host.com	10.xx.xx.xx
	App server – node 2	F02as002@host.com	10.xx.xx.xx
	App server – node 3	F02as003@host.com	10.xx.xx.xx
	Database server (production)	F02dbp001@host.com	10.xx.xx.xx
	Database server (stating)	F03dbs001@host.com	10.xx.xx.xx
Load balancer and Dispatcher	Dispatcher server	F03nd001@host.com	242.xx.xx.xx

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Example System/Technology Matrix

TECH FUNCTION	HARDWARE LOGICAL	HARDWARE PHYSICAL	SOFTWARE LOGICAL	SOFTWARE PHYSICAL
Load balancing	▪Name – Balancer ▪Vendor - IBM ▪Server Type – eServer ▪Clustered – No ▪No. of Nodes – N/A ▪Server logical address - d04lb01@host.com ▪Maintenance Window – Sun 0100 to 0300	▪Model/Type – IBM P7xx ▪Serial Number – 1S4568 ▪Processor Type - RISC Power p5 ▪Number of Processors - 4 way ▪Memory - 8GB ▪Hard drive - 4 TB ▪IP - 11.xx.xx.xx	▪Product- IBM Load balance manager ▪Vendor - IBM ▪OS – UNIX based	▪SW Components – LB v3.2 (list all the other components of the SW product) ▪AIX 10.2.1 ▪License Type - ▪Enterprise wide license ▪License expiry date - 12/31/2011

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Example System/Technology Matrix

APPLICATION COMPONENT	DEPLOYMENT UNIT	TECHNOLOGY COMPONENT
▪Load Balancer	▪Smart dispatch v1.2 (both installation and execution code)	▪Load balancing server (d03lb001@host.com)
▪Commerce pages	▪HTML code ▪Applets ▪JSP	▪Web Server cluster (d03ws001@host.com, d03ws002@host.com, d03ws003@host.com)
▪Commerce Engine	•Order Entry (both installation and execution code) •Shopping Cart (both installation and execution code)	•Application Server (d03as001@host.com, d03as002@host.com)

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Diagrams

- Environments and Locations diagram
- Platform Decomposition diagram
- Processing diagram
- Networked Computing/Hardware diagram
- Communications Engineering diagram

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Environments and Locations Diagram

- Depicts which locations host which applications
- Identifies what technologies and/or applications are used at which locations
- Identifies the locations from which business users typically interact with the applications.
- It should also show the existence and location of different deployment environments
  - including non-production environments, such as development and pre production.

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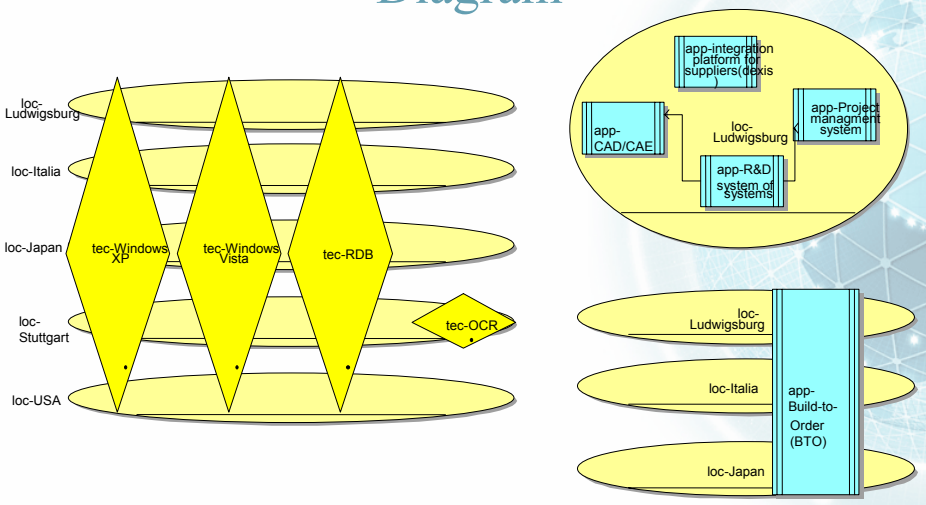
D Example Environments and Locations Diagram



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D Platform Decomposition Diagram

- The Platform Decomposition diagram depicts the technology platform that supports the operations of the Information Systems Architecture.
- The diagram covers all aspects of the infrastructure platform and provides an overview of the enterprise's technology platform.

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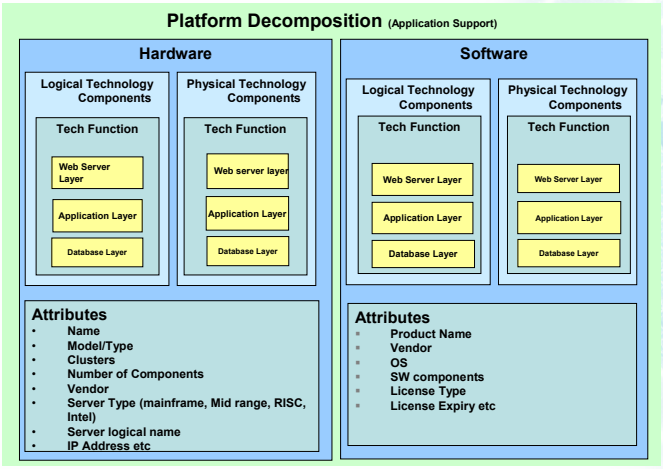
Example Platform Decomposition Diagram



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Processing Diagram

- The Processing diagram focuses on deployable units of code/configuration and how these are deployed onto the technology platform.
- The Processing diagram addresses the following:
  - Which set of application components need to be grouped to form a deployment unit
  - How one deployment unit connects/interacts with another (LAN, WAN, and the applicable protocols)
  - How application configuration and usage patterns generate load or capacity requirements for different technology components
- The organization and grouping of deployment units depends on separation concerns of the presentation, business logic, and data store layers and service-level requirements of the components.

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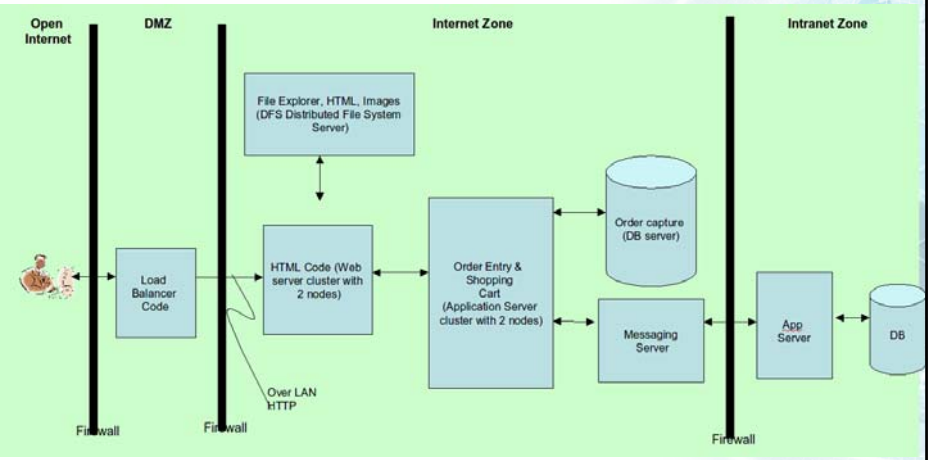
Example Processing Diagram



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Network Computing Hardware Diagram

- The purpose of this diagram is to show the "as deployed" logical view of logical application components in a distributed network computing environment.
- The diagram is useful for the following reasons:
  - Enable understanding of which application is deployed where
  - Establishing authorization, security, and access to these technology components
  - Understand the Technology Architecture that support the applications during problem resolution and troubleshooting
  - Isolate performance problems encountered and perform necessary upgrade to specific physical technology components
  - Identify areas of optimization
  - Enable application/technology auditing and prove compliance
  - Serve as an important tool supporting effective change management

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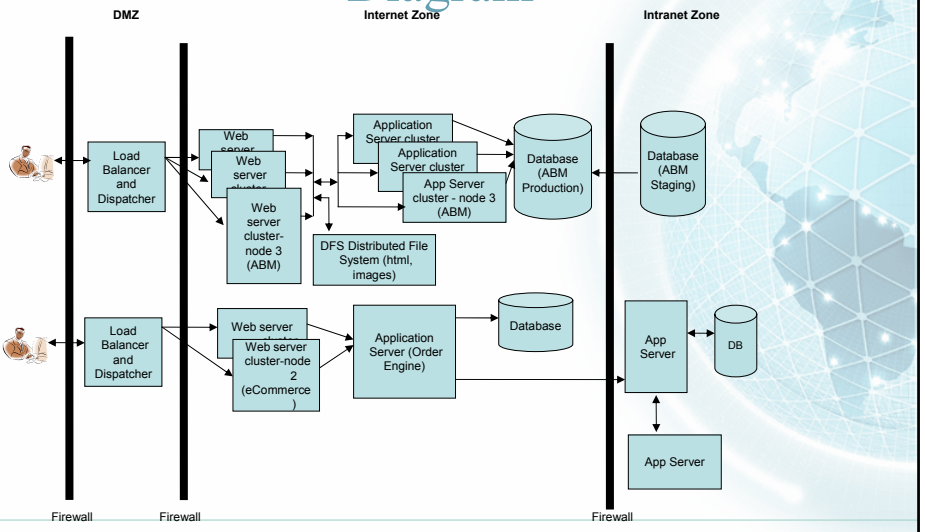
Example Network Computing Hardware Diagram



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Communications Engineering Diagram

- The Communications Engineering diagram describes the means of communication between assets in the Technology Architecture
- It takes logical connections between client and server components and identifies network boundaries and network infrastructure required to physically implement those connections.
- It does not describe the information format or content, but addresses protocol and capacity issues.

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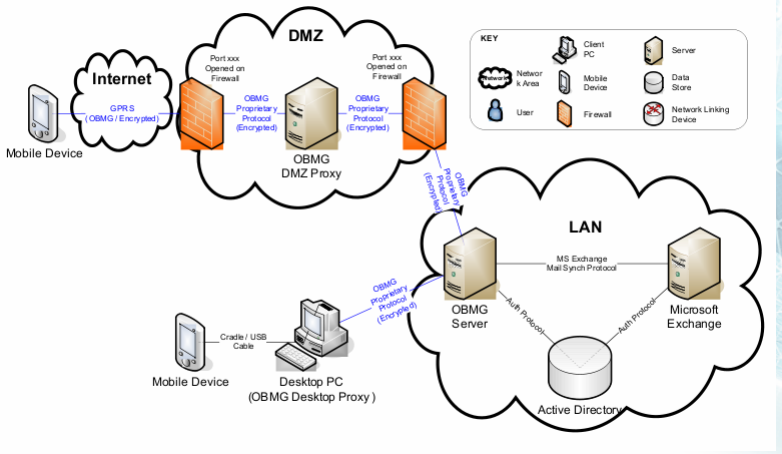
Example Communications Engineering Diagram



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Requirements Management Catalogs, Matrices and Diagrams

Catalogs
- **Requirements Catalog**

Matrices

Diagrams

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Catalogs

Catalog	Purpose
Requirements Catalog	The Requirements catalog captures things that the enterprise needs to do to meet its objectives. Requirements generated from architecture engagements are typically implemented through change initiatives identified and scoped during Phase E (Opportunities & Solutions). Requirements can also be used as a quality assurance tool to ensure that a particular architecture is fit-for-purpose (i.e., can the architecture meet all identified requirements). The Requirements catalog contains the following metamodel entities: * Requirement * Assumption * Constraint * Gap

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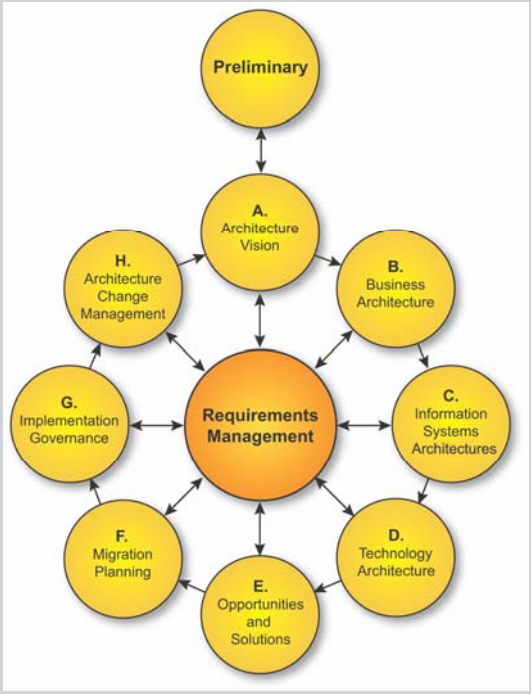

Sample Catalogs, Matrices and Diagrams

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