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Version 9.1 Enterprise Edition

Module 16A
Phase B
Business Architecture
-- Catalogs, Matrices and Diagrams

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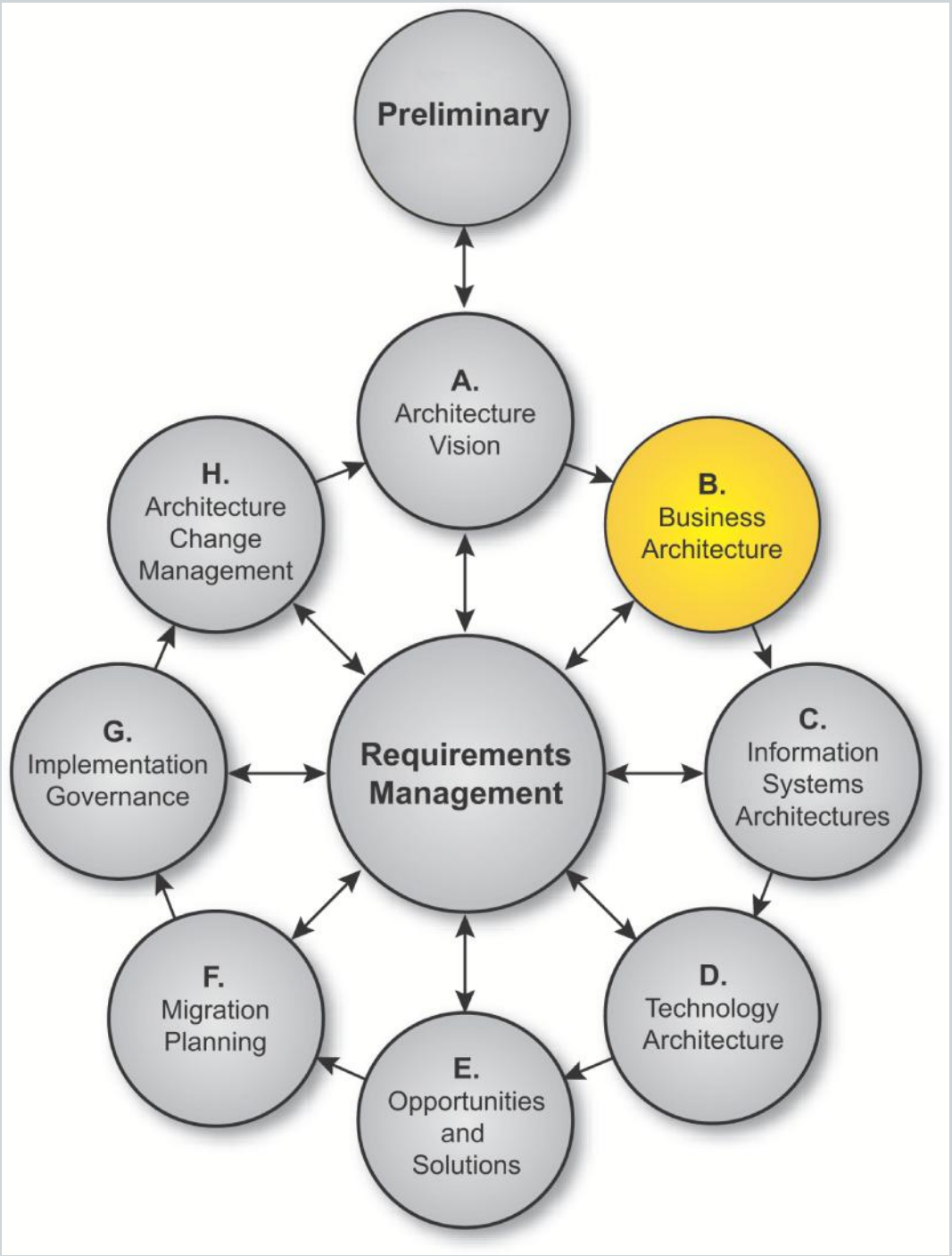
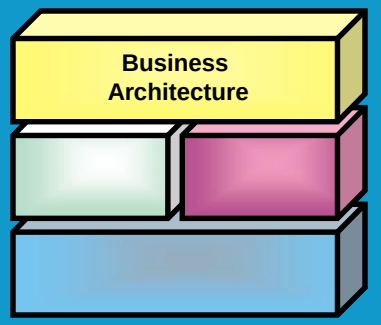


Phase B: Business Architecture – Catalogs, Matrices and Diagrams



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Module Objectives

The objectives of this module are to understand:

- The Catalogs, Matrices and Diagrams of Phase B, Business Architecture
- What they consist of
- How they can be used

Preliminary Phase
- Principles catalog

Phase A, Architecture Vision
- Stakeholder Map Matrix
- Solution Concept diagram
- Value Chain diagram

Requirements Management
- Requirements catalog

Phase B, Business Architecture
- Organization/Actor catalog
- Driver/Goal/Objective catalog
- Role catalog
- Business Service/Function catalog
- Location catalog
- Process/Event/Control/Product catalog
- Contract/Measure catalog
- Business Interaction matrix
- Actor/Role matrix
- Business Footprint diagram
- Business Service/Information diagram
- Functional Decomposition diagram
- Product Lifecycle diagram
- Goal/Objective/Service diagram
- Business Use-Case diagram
- Organization Decomposition diagram
- Process Flow diagram
- Event diagram

Phase C, Data Architecture
- Data Entity/Data Component catalog
- Data Entity/Business Function matrix
- Application/Data matrix
- Logical Data diagram
- Data Dissemination diagram
- Data Security diagram
- Class Hierarchy diagram
- Data Migration diagram
- Data Lifecycle diagram

Phase C, Application Architecture
- Application Portfolio catalog
- Interface catalog
- Application/Organization matrix
- Role/Application matrix
- Application/Function matrix
- Application Interaction matrix
- Application Communication diagram
- Application and User Location diagram
- Application Use-Case diagram
- Enterprise Manageability diagram
- Process/Application Realization diagram
- Software Engineering diagram
- Application Migration diagram
- Software Distribution diagram

Phase D, Technology Architecture
- Technology Standards catalog
- Technology Portfolio catalog
- System/Technology matrix
- Environments and Locations diagram
- Platform Decomposition diagram
- Processing diagram
- Networked Computing/Hardware diagram
- Communications Engineering diagram

Phase E. Opportunities & Solutions
- Project Context diagram
- Benefits diagram

TOGAF 9 Artifacts

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
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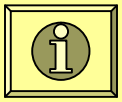


The exact format of the catalogs, matrices and diagrams will depend on the tools used

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

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

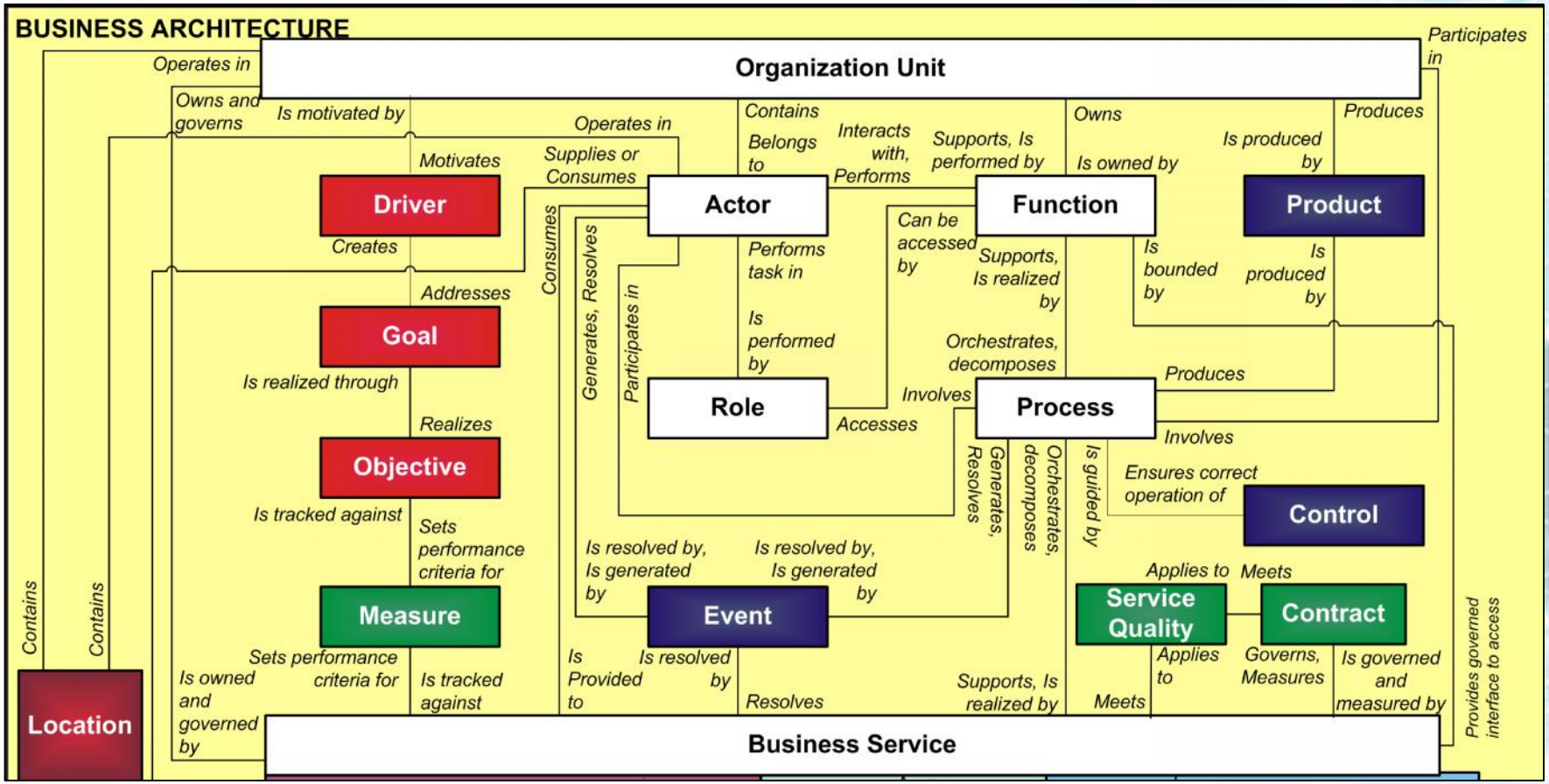
Catalogs

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

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

Exercise



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Matrices

- Business Interaction matrix
- Actor/Role matrix

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	

Actor/role Matrix

- This matrix 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 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	

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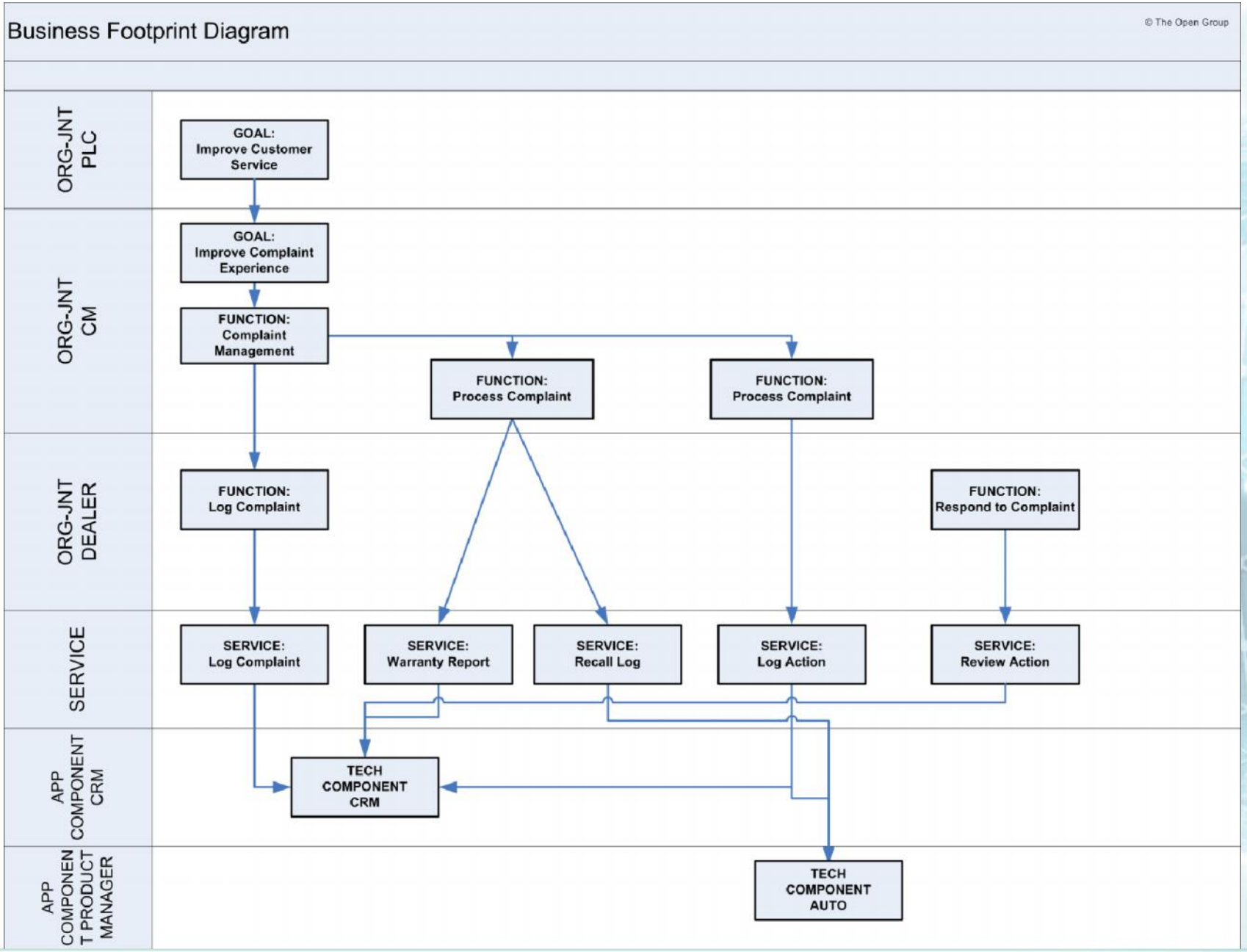
Diagrams

- 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

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


Business Footprint Diagram
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ORG-JNT PLC
GOAL: Improve Customer Service
ORG-JNT CM
GOAL: Improve Complaint Experience
FUNCTION: Complaint Management
FUNCTION: Process Complaint
FUNCTION: Process Complaint
ORG-JNT DEALER
FUNCTION: Log Complaint
FUNCTION: Respond to Complaint
SERVICE
SERVICE: Log Complaint
SERVICE: Warranty Report
SERVICE: Recall Log
SERVICE: Log Action
SERVICE: Review Action
APP COMPONENT CRM
TECH COMPONENT CRM
APP COMPONENT PRODUCT MANAGER
TECH COMPONENT AUTO

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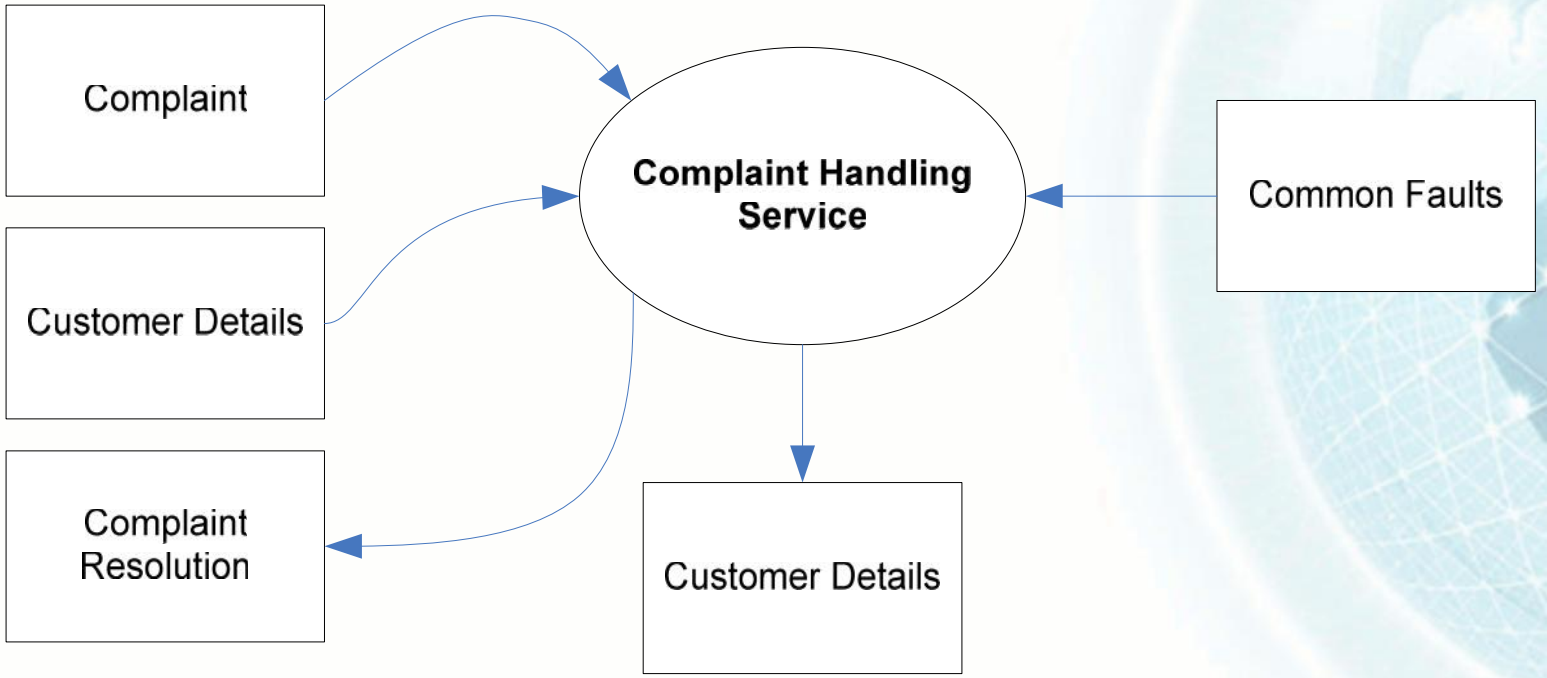
Business Service/Information Diagram

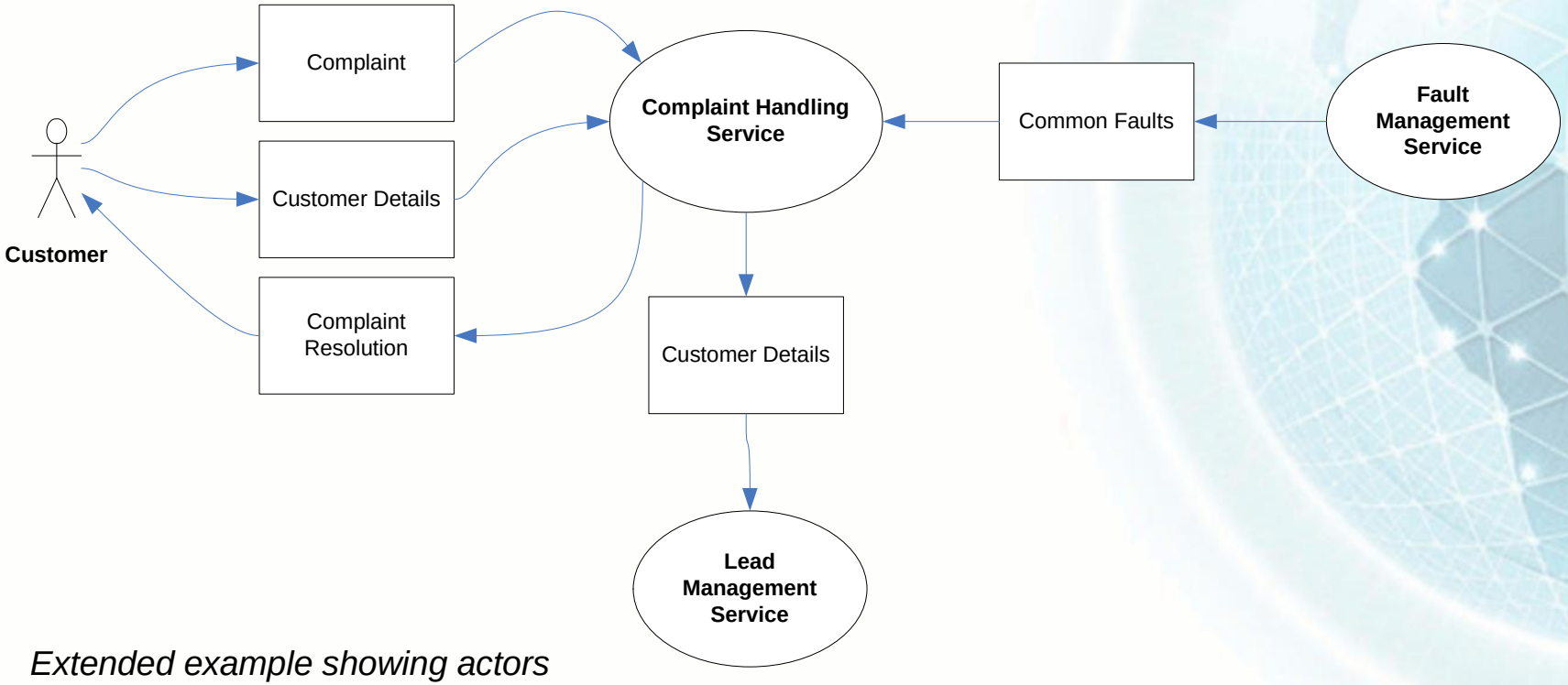
- Shows the information needed to support one or more business services.
- Shows what data is consumed by or produced by a business service and may also show the source of information.
- Shows an initial representation of the information present within the architecture and therefore forms a basis for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

Example Business Service/Information Diagram



Basic example

Example Business Service/Information Diagram



Extended example showing actors and service interactions

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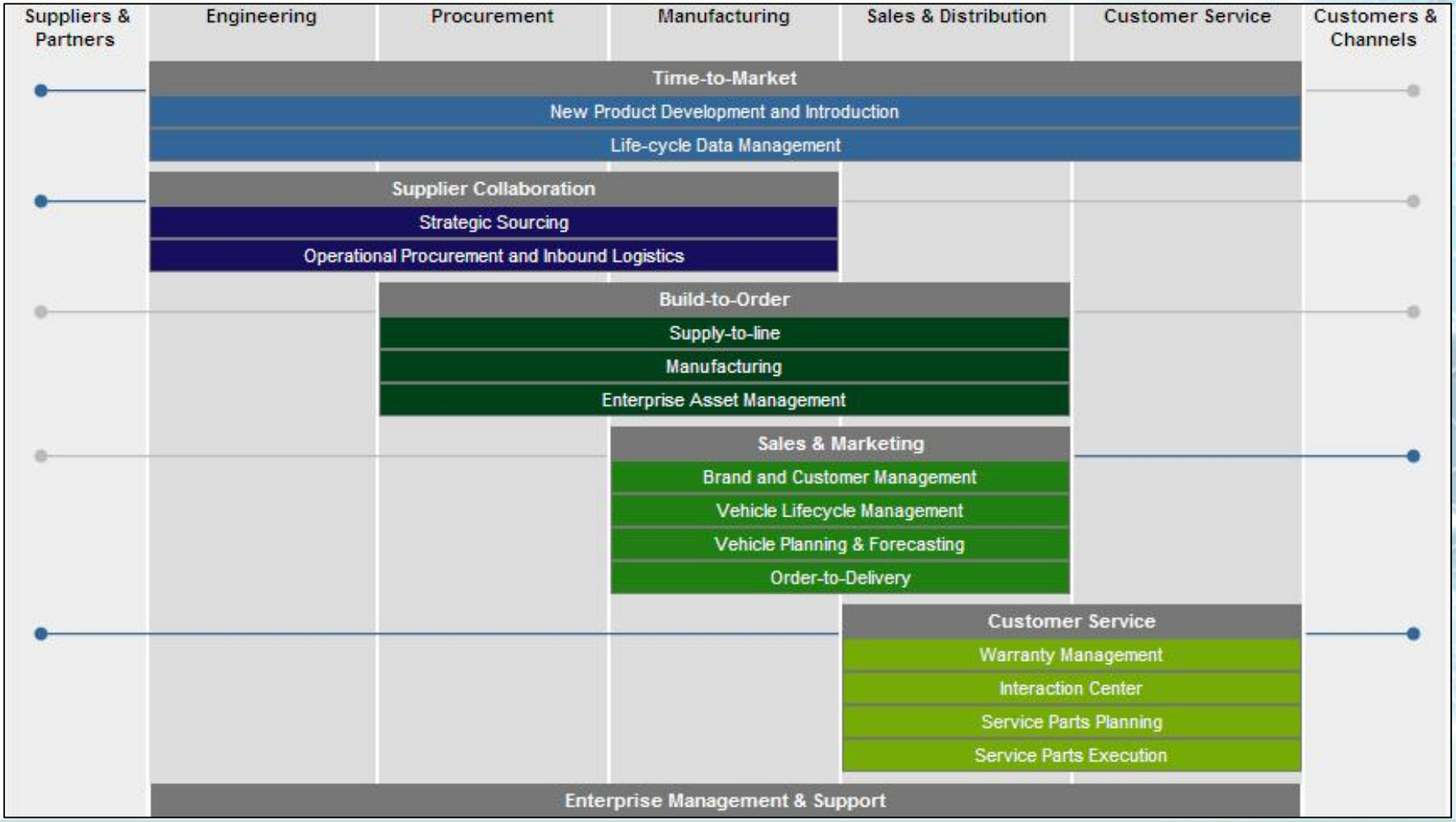
Functional Decomposition Diagram

- 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.

Example Functional Decomposition Diagram



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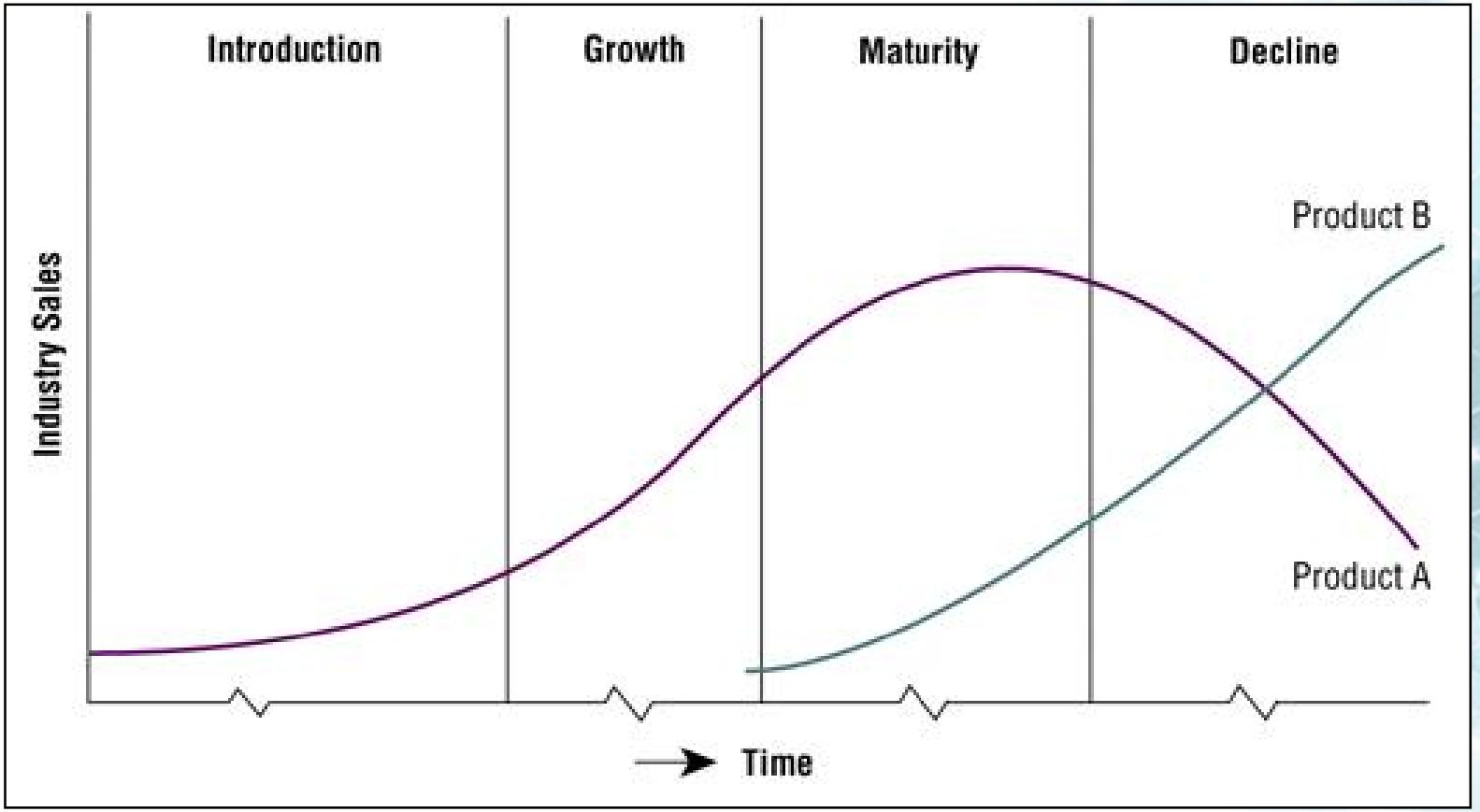
Product Lifecycle Diagram

- 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.).

Example Product Lifecycle Diagram



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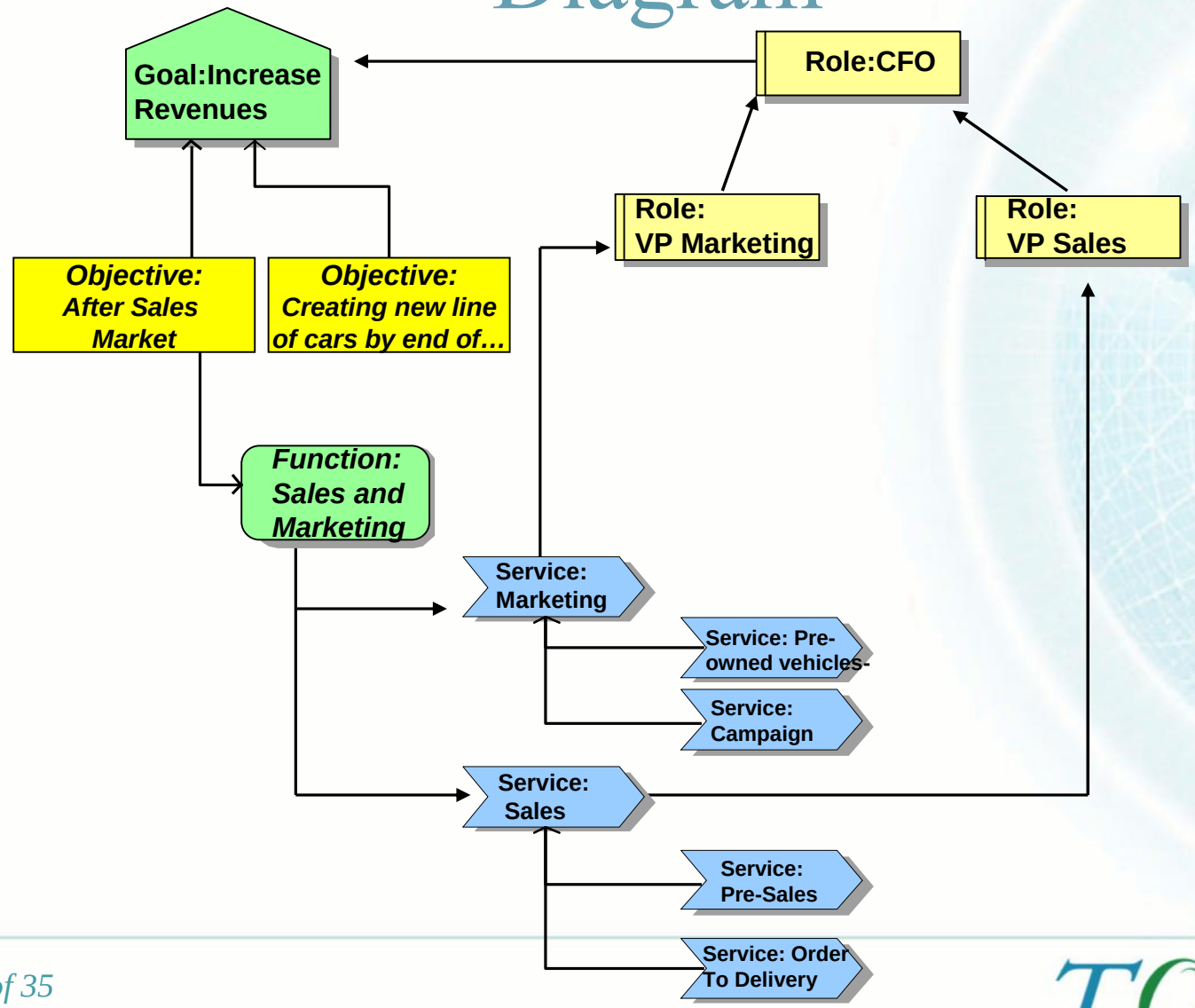
Goal/Objective/Service Diagram

- 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.

Example Goal/Objective/Service Diagram



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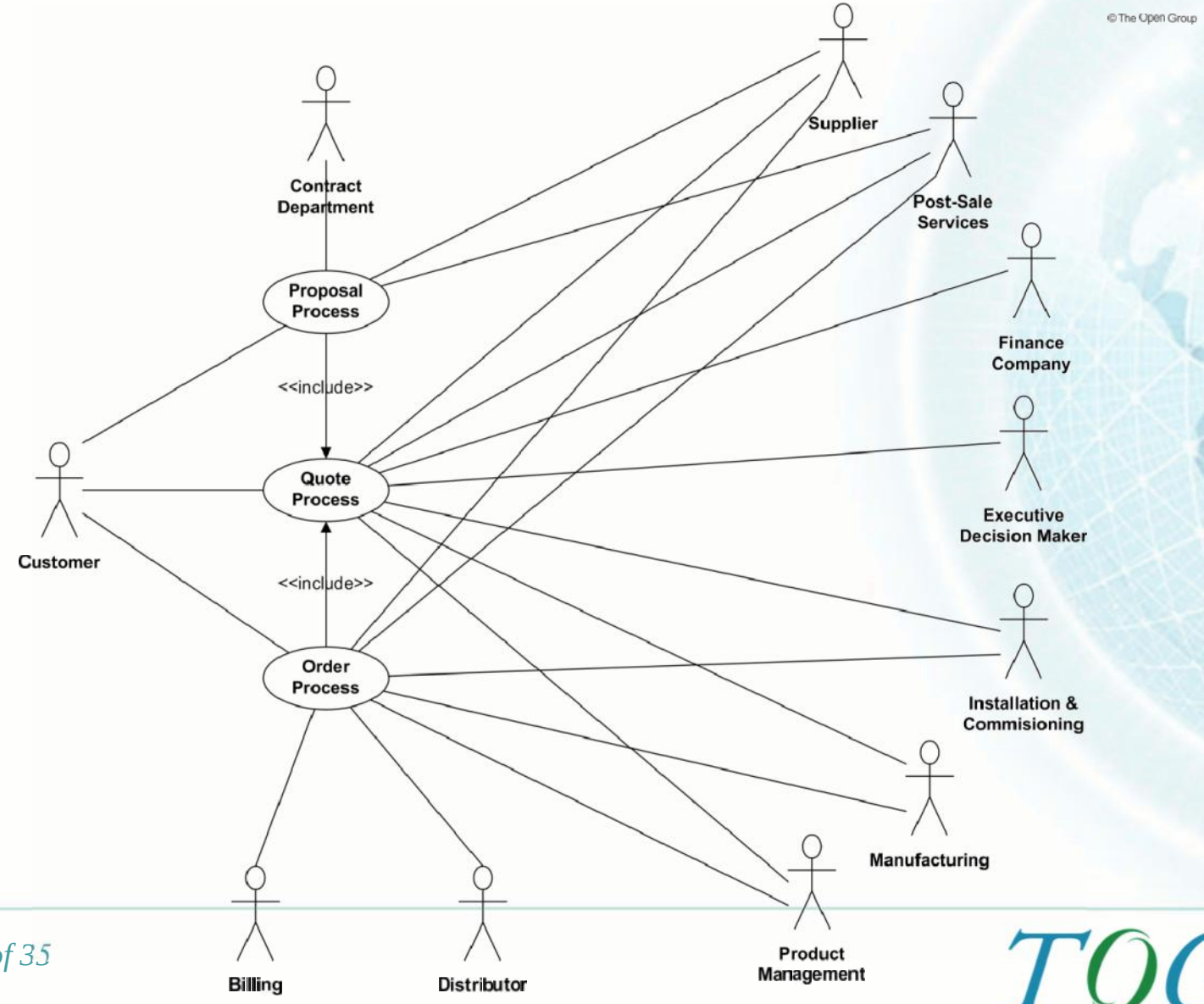
Business Use-case Diagram

- 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.

Example Business Use-case Diagram



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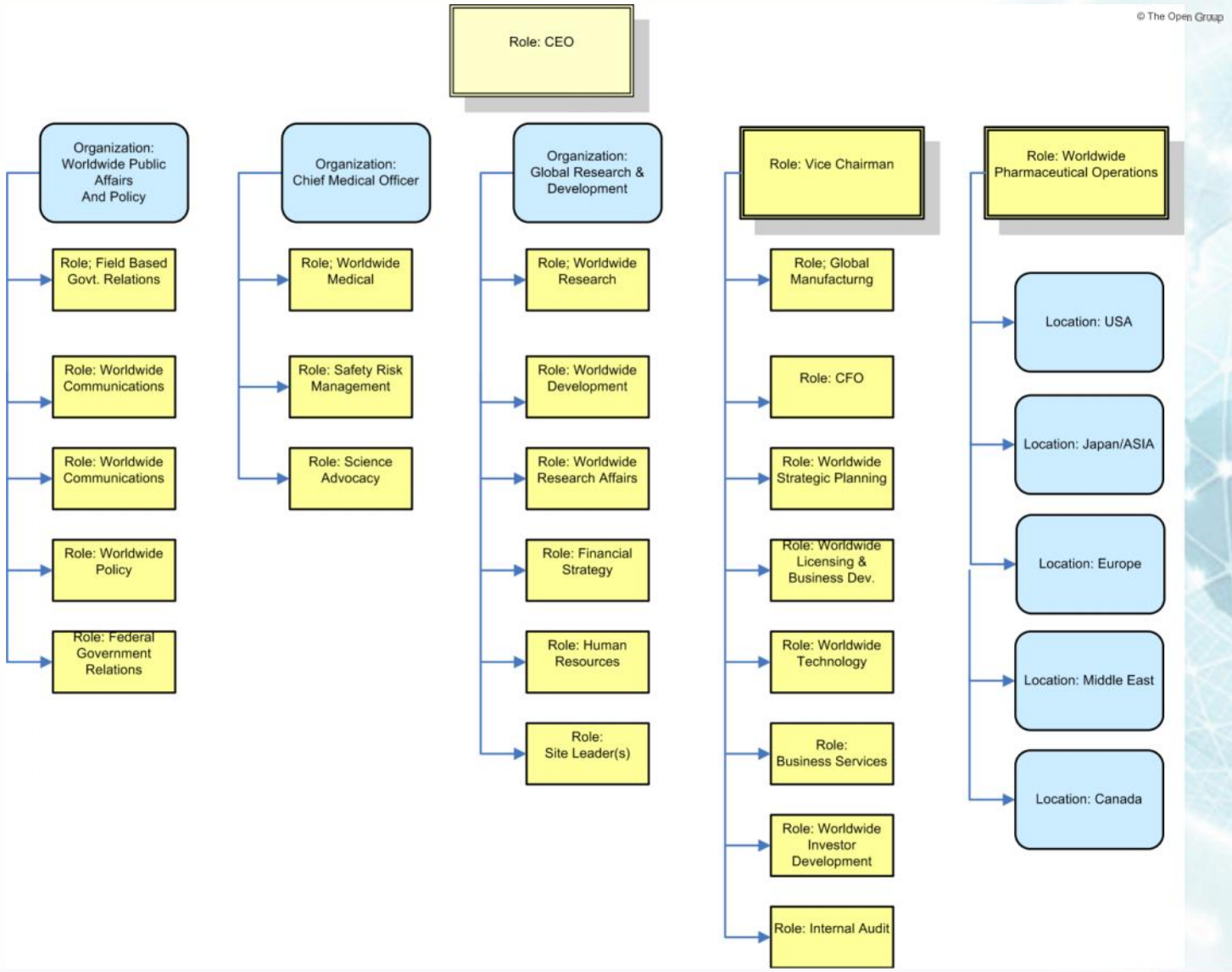
Organization Decomposition Diagram

- 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.

Example Organization Decomposition



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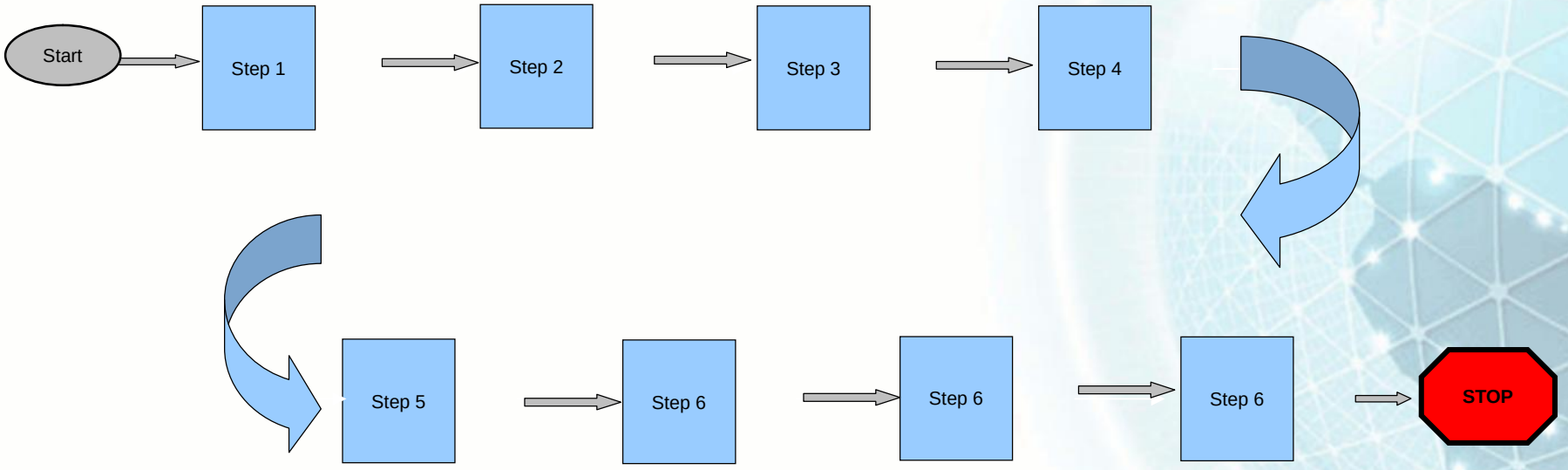
Process Flow Diagram

- 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.

Example Process Flow Diagram



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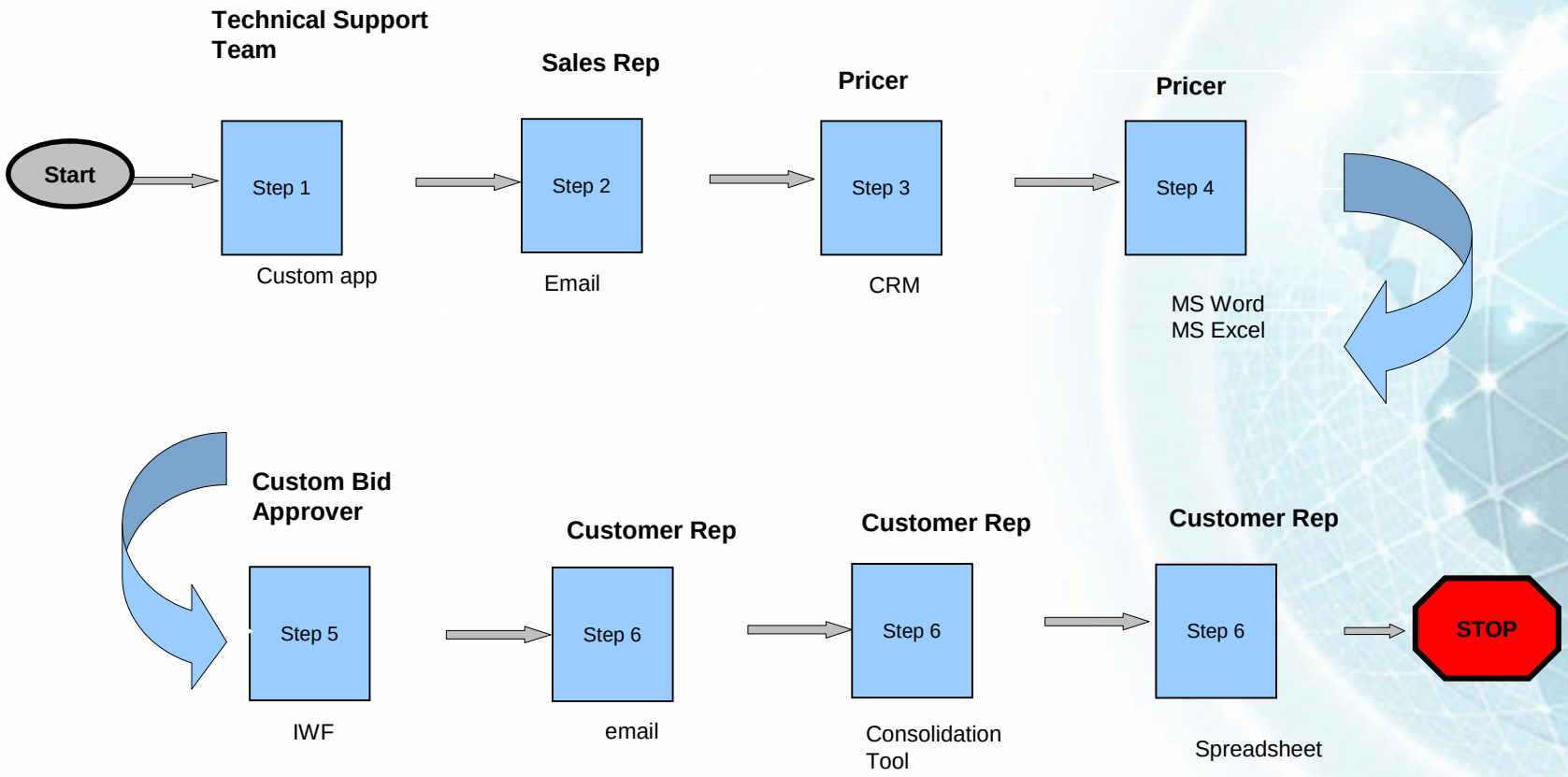
Example Process Flow Diagram



Process Flow (w/Roles & Applications)

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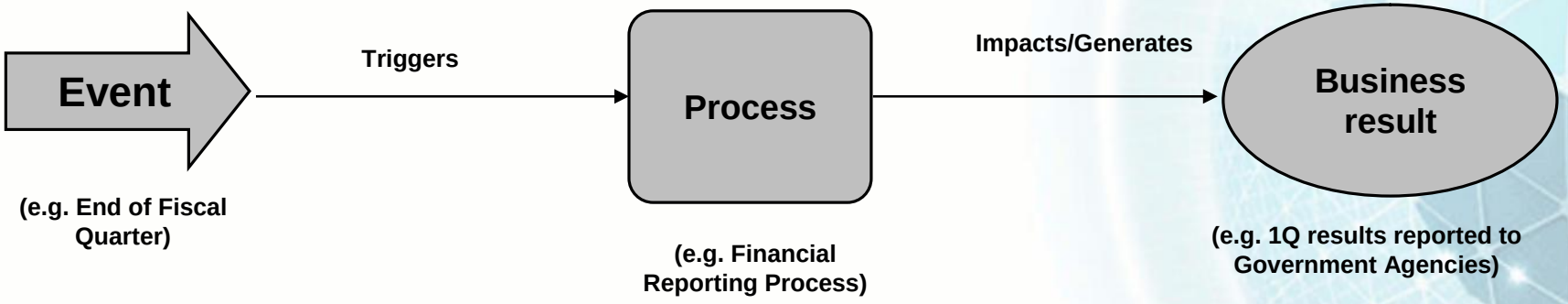
Events Diagram

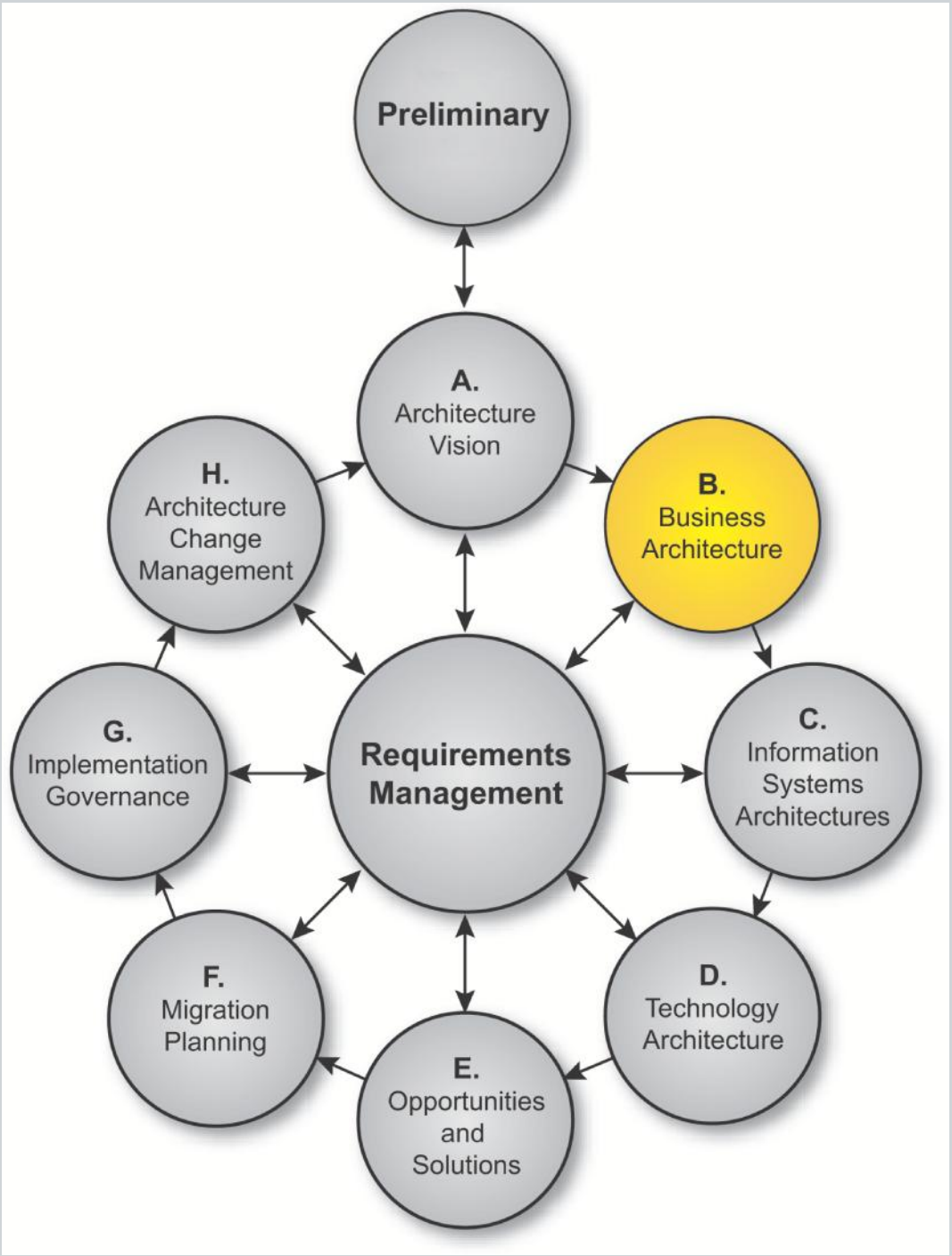
- This depicts the relationship between events and process.
- Certain events - such as arrival of information (e.g. a customer's sales order) or a point in time (e.g. end of fiscal quarter) cause work and actions to be undertaken within the business.

Example Events Diagram

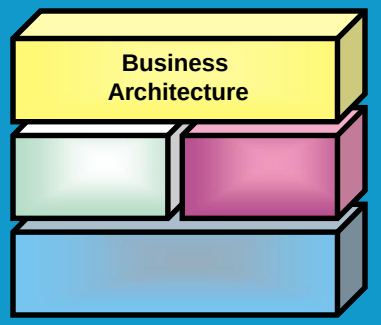


Example Events Matrix

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



Phase B: Business Architecture – Catalogs, Matrices and Diagrams



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