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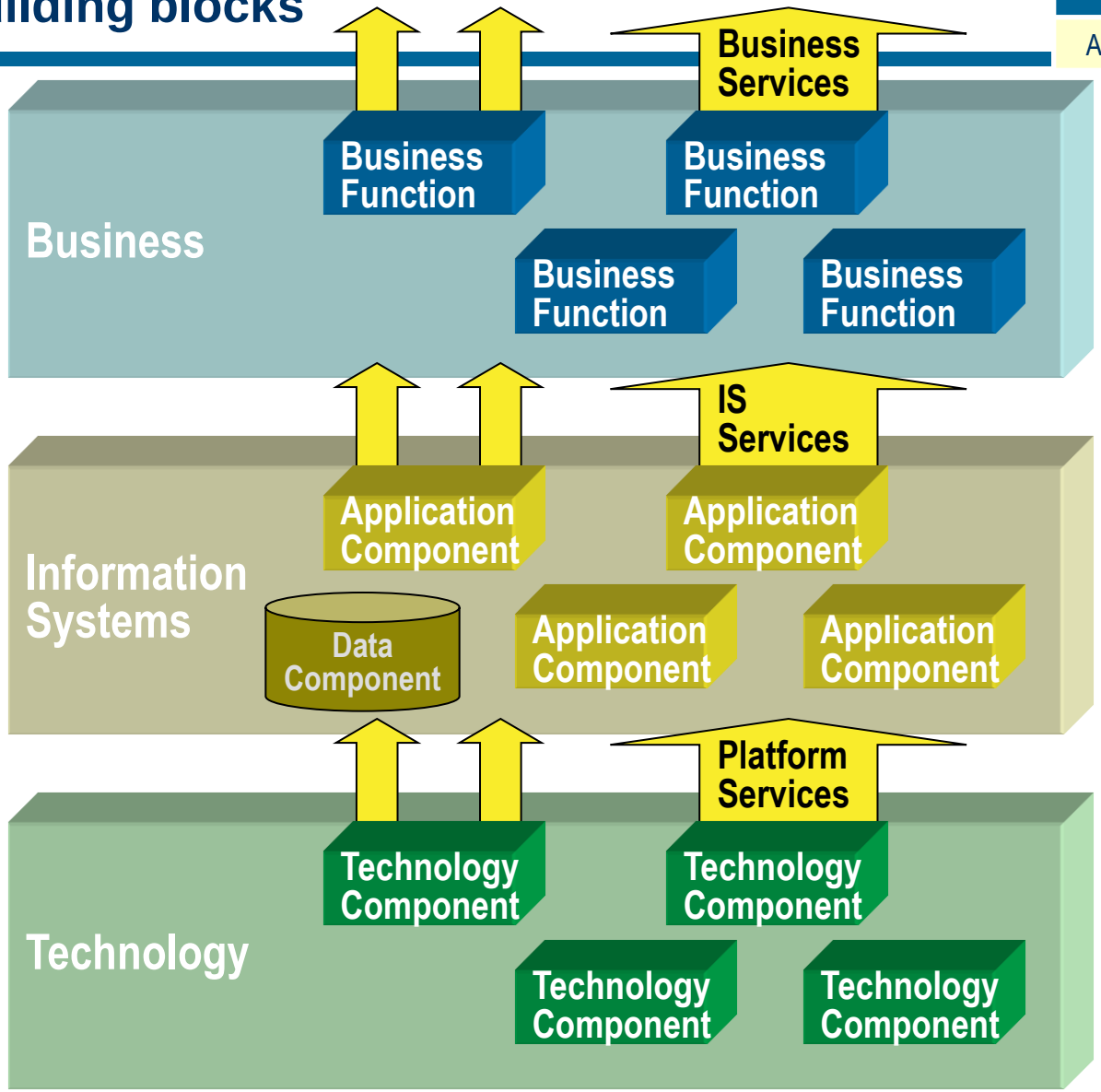
Avancier's TOGAF quick reference charts

A graphical view of core TOGAF concept

Core concepts – building blocks

- Components encapsulated behind the services they offer
- Using TOGAF terminology



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50 TOGAF Deliverables and Concepts

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Business Strategy

- Business Drivers
- Business Principles
- Business Goals

Directives

- Architecture Principles
- Design Patterns
- Reference Models
- Standards Info. Base

Aims

- Request for Architecture Work
- Architecture Requirements
- Change Request
- Requirements Impact Assessment

Architecture

- Architecture Vision
- Statement of Architecture Work
- Architecture Definition Doc
- Architecture Roadmap
- Transition Architectures

Implementation

- Implementation & Migration Plans
- Implementation Governance Model
- Architecture Contracts
- Compliance Assessments

Stakeholders

- Stakeholder Map
- Concern
- Communic'n Plan

Description

- Deliverable
- Artifact
- Building Block

Viewpoint — **View**

ISO/IEC 42010

Architecture levels

- Enterprise Architecture
- Segment Architecture
- Capability Architecture

Enterprise Continuum

	Foundation	Common System	Industry	Organisation
Requirements and Context				
Architecture continuum	Foundation Architecture	Common Sys Architecture	Industry Architecture	Organisation Architecture
Solutions continuum	Foundation Solutions	Common Sys Solutions	Industry Solutions	Organisation Solutions
Deployed solutions				

Architecture Domains

- Business Architecture: Function, Process
- Data Architecture: Concep. DM, Log. DM, XML Schema, Data Store, Interface
- Application Arch.: Consumer App, Broker App, Provider App
- Technology Architecture: Tech Component

Service-Oriented View

- Business Services
- IS Services
- IS Services
- IS Services
- III RM
- Platform Services
- TRM

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The Architecture Development Method

A capability must be established

A sponsor has a problem or requirement, there is a need for a change, and solutions must be delivered

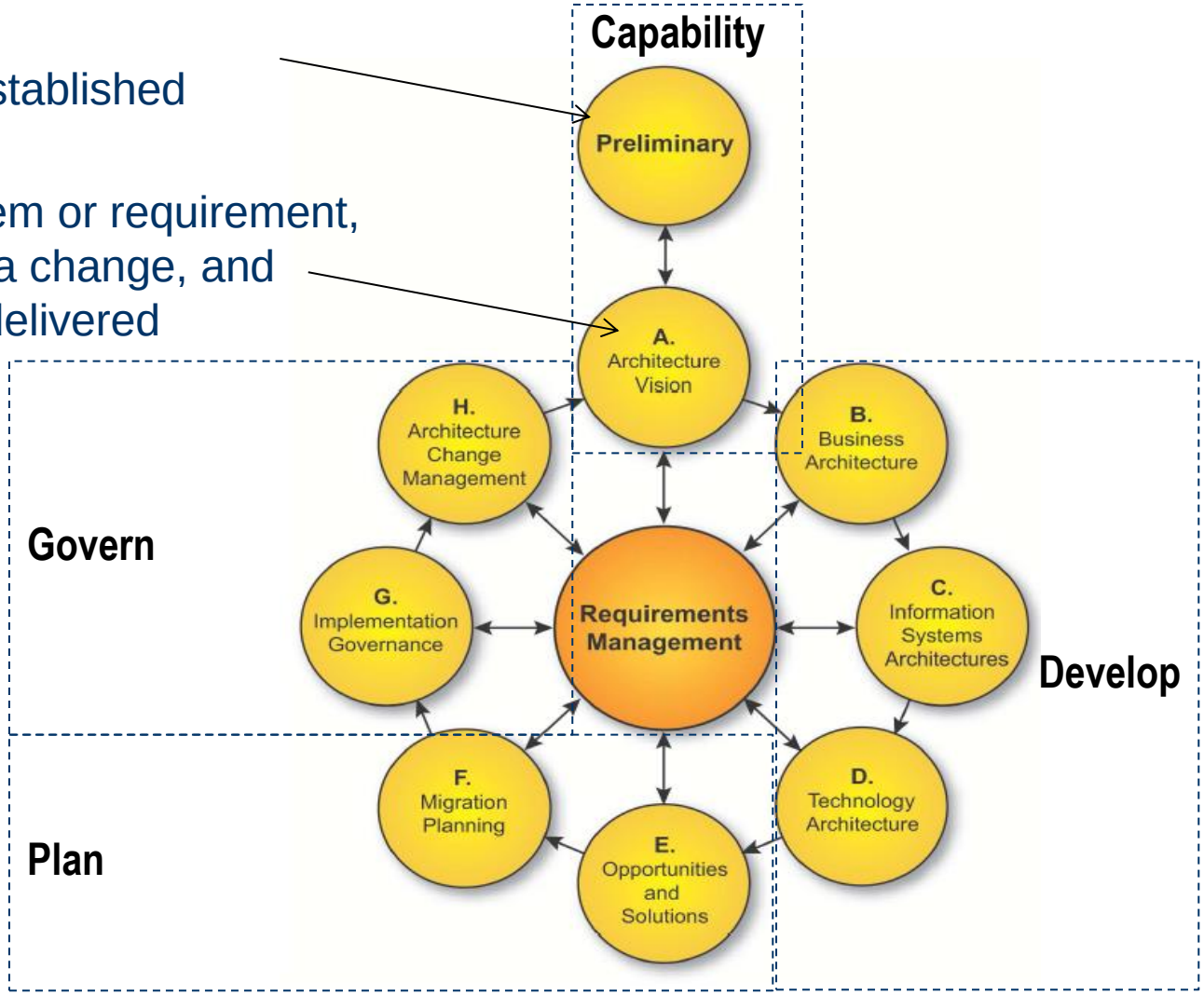

Figure 5-1 Architecture Development Cycle

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Part 2

Business architecture

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Figure 5-1 Architecture Development Cycle

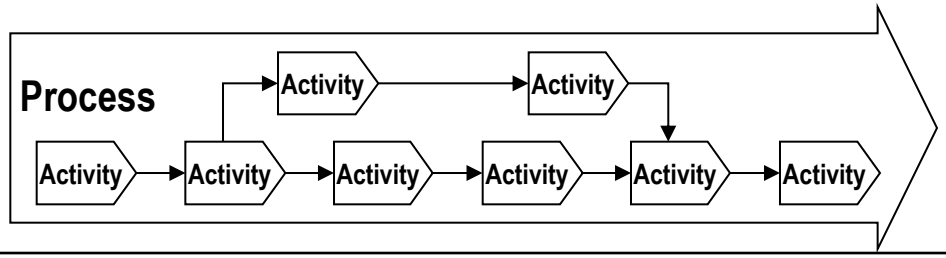
External behaviour

Services requested of a business or a function

Business Service | Business Service | Business Service

Internal behaviour

Process Flow Diagram



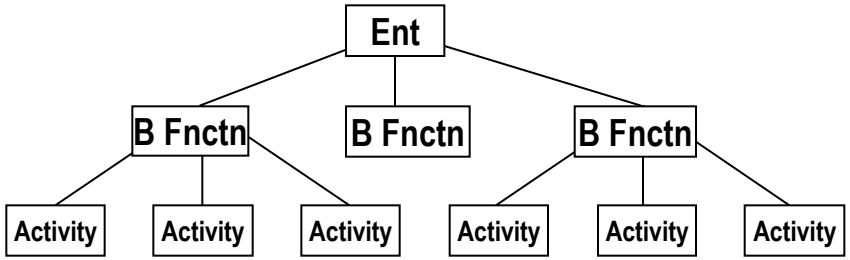
Activity
= Elementary business process
= Elementary business function

Data entity / business function

	Activity	Activity
Data entity		
Data entity		
Data entity		

Logical structure

Functional Decomposition Diagram

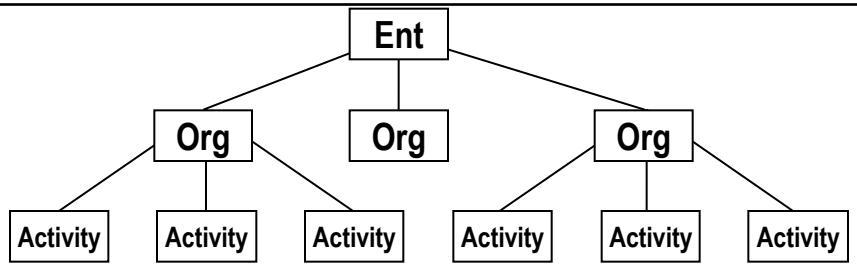


Function / Org matrix

	Activity	Activity
Org unit		
Org unit		
Org unit		

Physical structure

Organization Decomposition Diagram



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Part 2

Data architecture

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Informal - no data types

Formal - data types

Conceptual

Conceptual Data Diagram

XML Schema

	LDM	LDM	LDM	LDM
Entity				
Entity	Data dissemination view			
Entity				

Logical

Figure 5-1 Architecture Development Cycle

Logical Data Diagram

Data Model Management

Interface Catalogue

Physical

Physical Data Component

Real

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Part 2

Application architecture

Avancier

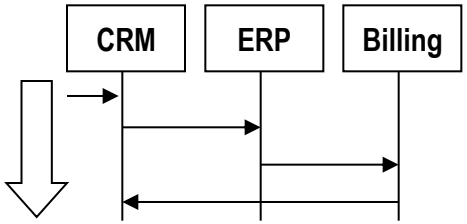
External behaviour

Uses of apps - by business roles/functions or other apps

Figure 5-1 Architecture Development Cycle

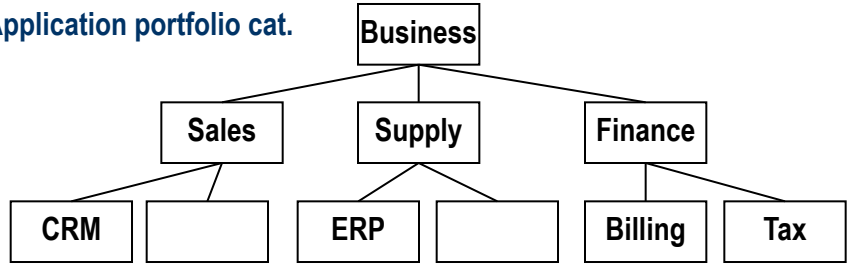
Internal behaviour

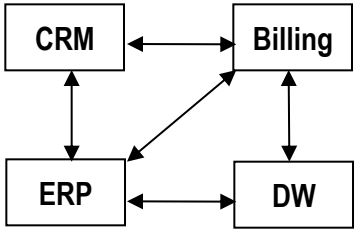
Process application realisation diagram



Logical structure

Application portfolio cat.

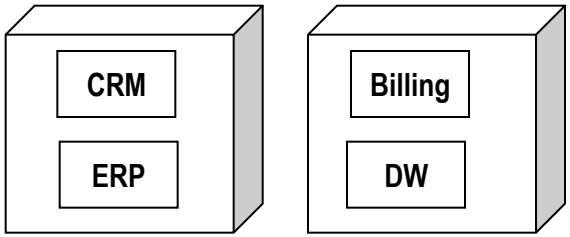




App comm. diagram

Physical structure

Various diagrams showing deployment of apps components to technology components



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Part 2

Technology architecture - rationalisation

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External behaviour

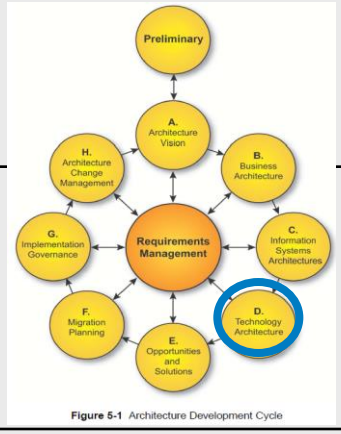

Figure 5-1 Architecture Development Cycle

Platform Services | Platform Service | TRM | Platform Service | Platform Service

200 platform services

210 services

Logical structure

10 * 30 platform services

Logical Technology

1 OS
1 DBMS
1 Bus

Physical structure

Physical Technology

2 OS
5 DBMS
3 ESB

Physical Technology

?
?
?

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Part 4

Deliverables

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- Architecture Building Blocks
- Architecture Contracts
- Architecture Definition Document
- Architecture Principles
- Architecture Repository
- Architecture Requirements
- Architecture Roadmap
- Architecture Vision
- Business Principles, Goals & Drivers
- Capability Assessment
- Change Request
- Communications Plan
- Compliance Assessment
- Implementation and Migration Plan
- Implementation Governance Model
- Organizational Model for Enterprise Architecture
- Request for Architecture Work
- Requirements Impact Assessment
- Solution Building Blocks
- Statement of Architecture Work
- Tailored Architecture Framework
- Transition Architectures

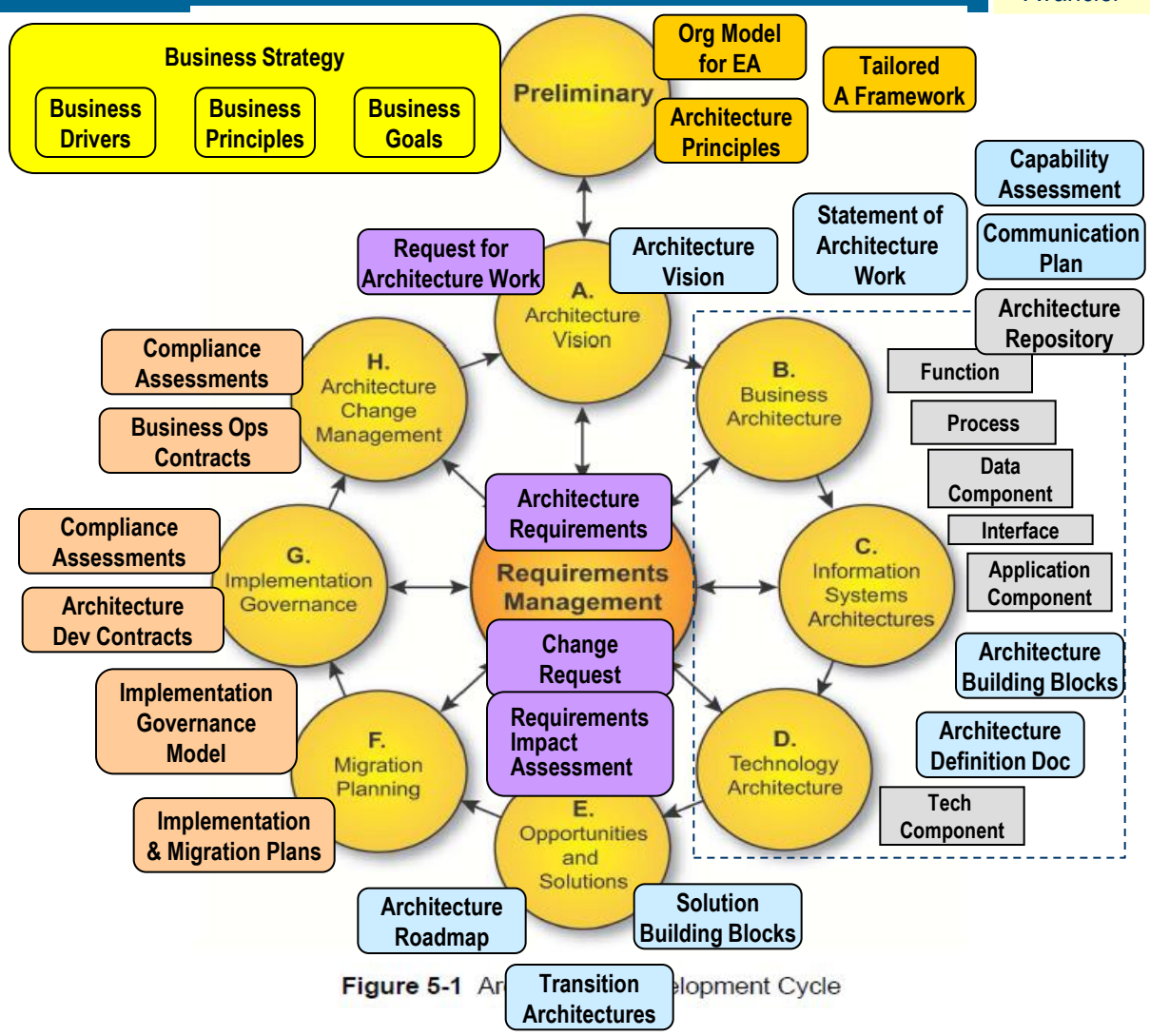

Figure 5-1 Ar elopment Cycle

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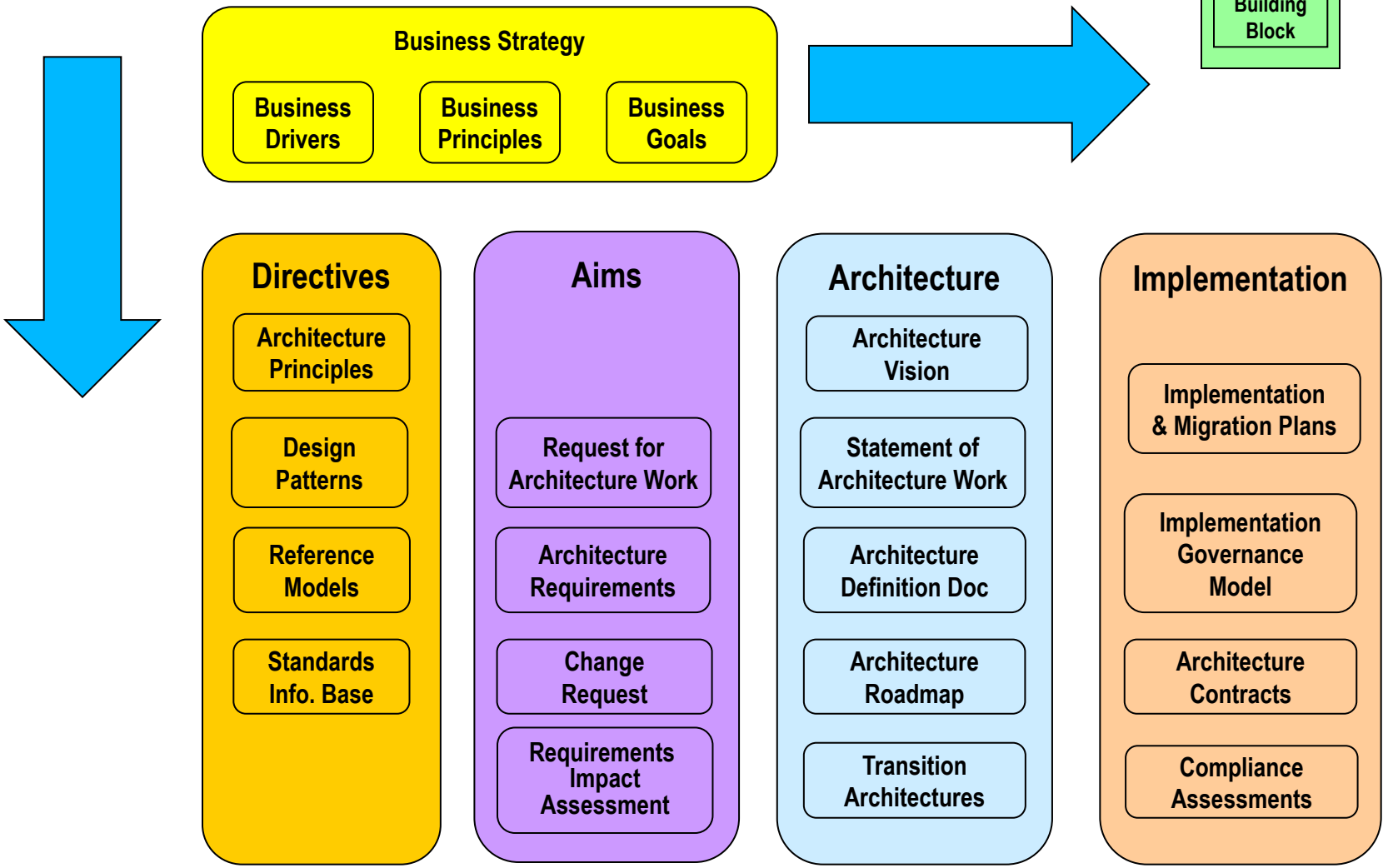
Part 4

The Drift of Deliverables



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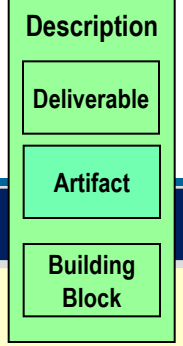
Part 4

Artefacts



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Preliminary Phase	Phase A: Architecture Vision artefacts		Phase E Opportunities and Solutions Artefacts
Principles Catlaog	Stakeholder Map Matrix Value Chain Diagram Solution Concept Diagram		Project Context Diagram Benefits Diagram
Phase B Business Architecture artefacts	**Phase C Data Architecture artefacts**	**Phase C Application Architecture artefacts**	**Phase D Technology Architecture artefacts**
Organization/Actor Catalog Role Catalog Business Service/Function Catalog Driver/Goal/Objective Catalog Location Catalog Process/Event/Control/Product Catalog Contract/Measure Catalog	Data Entity/Data Component Catalog	Application Portfolio Catalog Interface Catalog	Technology Portfolio Catalog Technical Reference Model Technology Standards Catalog
Business Interaction Matrix Actor/Role Matrix	Data Entity/Business Function Matrix Application/Data Matrix	Application/Organization Matrix Role/Application Matrix Application/Function Matrix Application Interaction Matrix	Application/Technology 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	Conceptual Data Diagram Logical Data Diagram Data Dissemination Diagram Data Security Diagram (or matrix) Data Migration Diagram Data Lifecycle Diagram Class Hierarchy Diagram	Application Communication Diagram Application and User Location Diagram System Use-Case Diagram Enterprise Manageability Diagram Process/Application Realization Diagram Software Engineering Diagram Application Migration Diagram Software Distribution Diagram	Environments and Locations Diagram Platform Decomposition Diagram Processing Diagram Networked Computing/Hardware Diagram Communications Engineering Diagram

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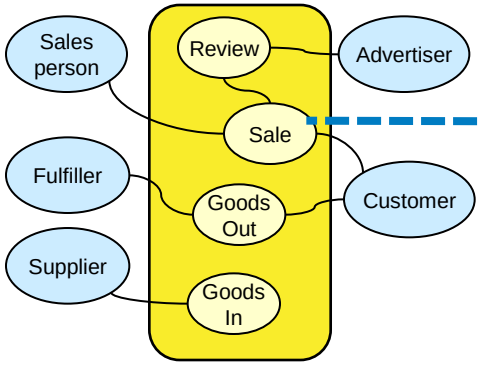
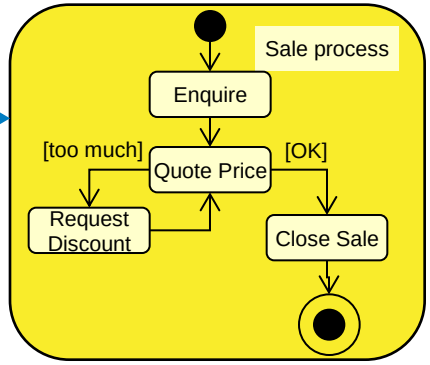
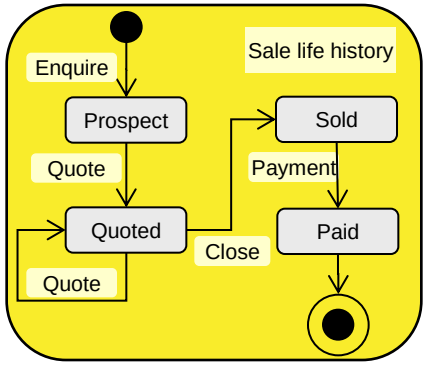
Business Use Case Diagram



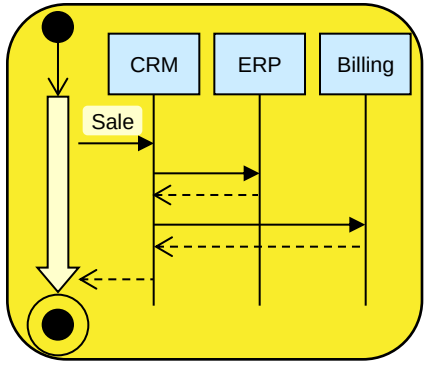
Process Flow Diagram



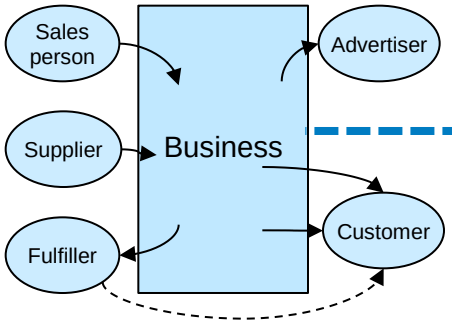
Product Life Cycle Diagram



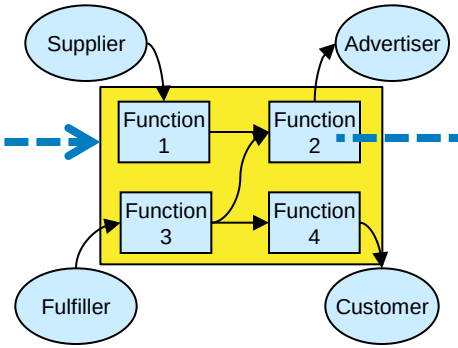
Process Application Realisation Diagram



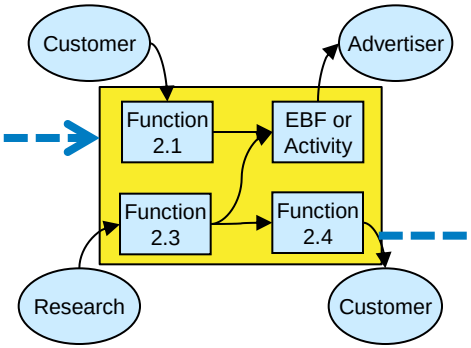
Business Service/Information Diagram



Business Service/Information Diagram



Business Service/Information Diagram

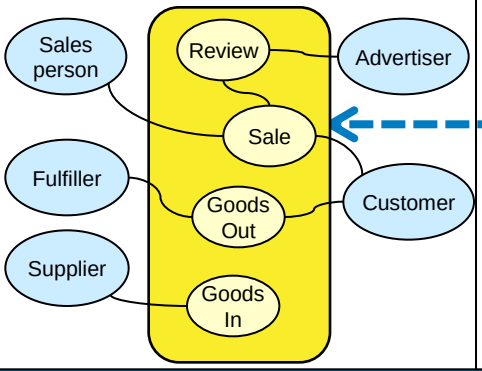


Interface (data flow) catalogue

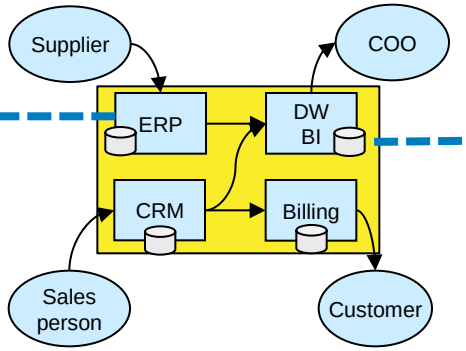
Flow Name
Trigger
Content (see below)
Source
Destination
Qualities (NFRs)

- Time / Duration
- Volume
- Availability
- Price
- Etc.

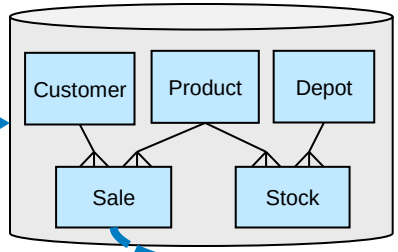
System Use Case Diagram



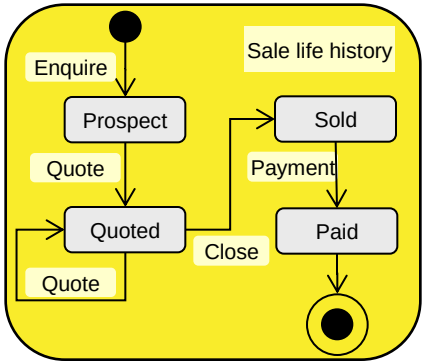
Application Communication Diagram



Logical Data Diagram



Data Life Cycle Diagram



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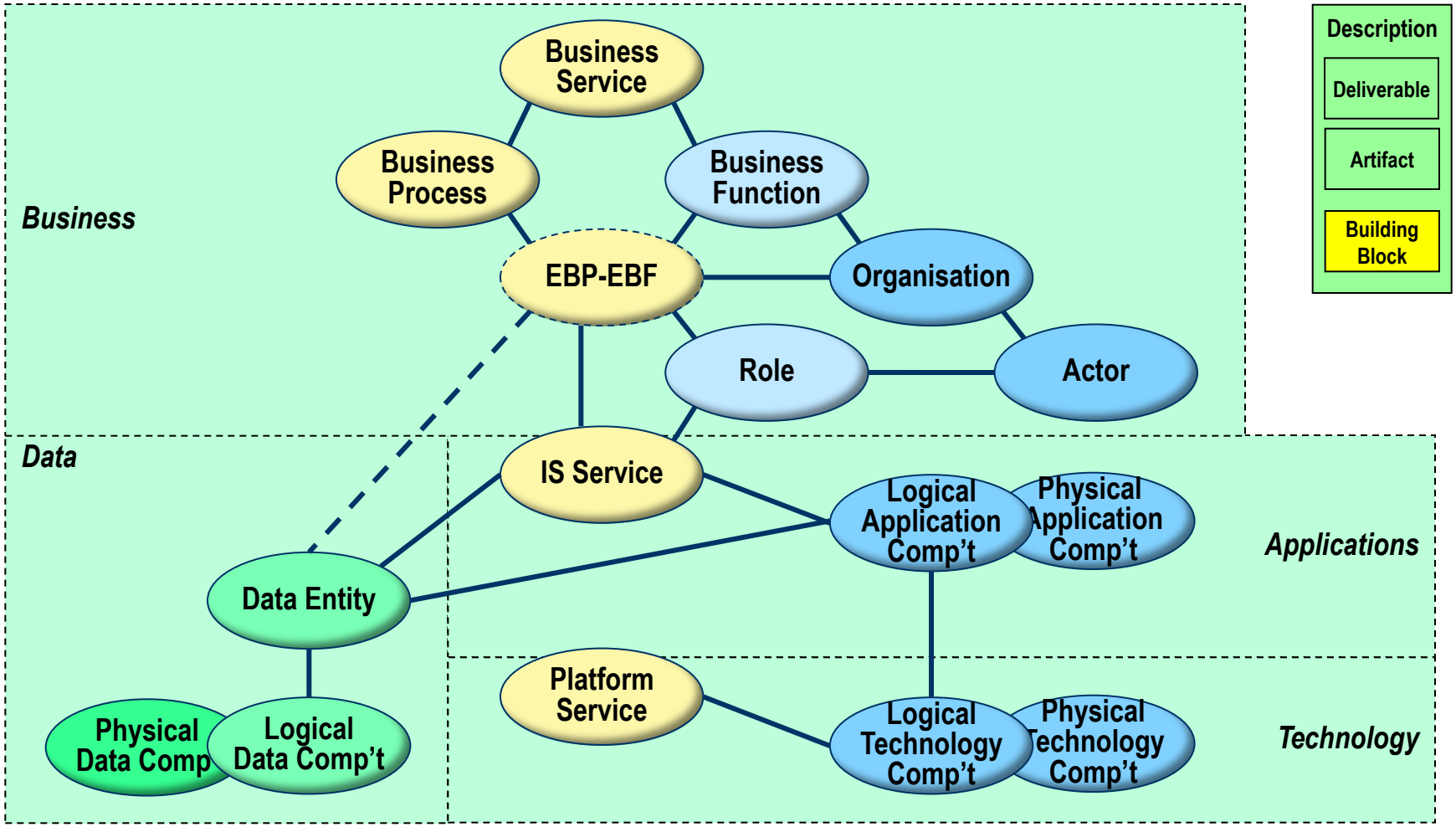
Building Blocks - Meta model – simplified



TOGAF has logical and physical version of data, app and technology components

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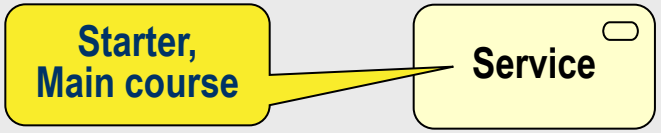
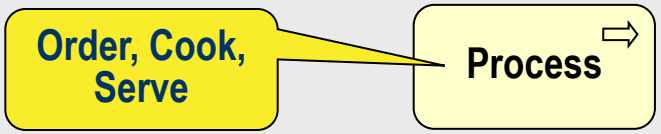
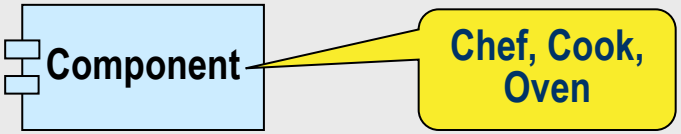
ArchiMate generic meta model of activity system concepts

	Behaviour	Structure
External	A discrete event or operation that is required of or provided by a system. Definable in a service contract with no reference to the logical control flow of the processes that deliver it. 	A structured collection of services (to the left) that is presented to consumers and provided by one or more components (below).
Internal	 What a system does. A logical sequence of activities that is performed by components and can be encapsulated behind a service contract.	 What a system is made of. A subsystem that performs activities and can be encapsulated behind an interface.

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Enterprise Continuum

- Two-dimensional Classification schemes or “Taxonomies”

TOGAF’s Enterprise Continuum	Foundation	Common System	Industry	Organisation
Requirements and Context	Ideal to Real	Generic to specific		
Architecture continuum				
Solutions continuum				
Deployed solutions				

Zachman Framework	What	How	Where	Who	When	Why
Contextual	Ideal to Real					
Conceptual						
Logical						
Physical						
Real						

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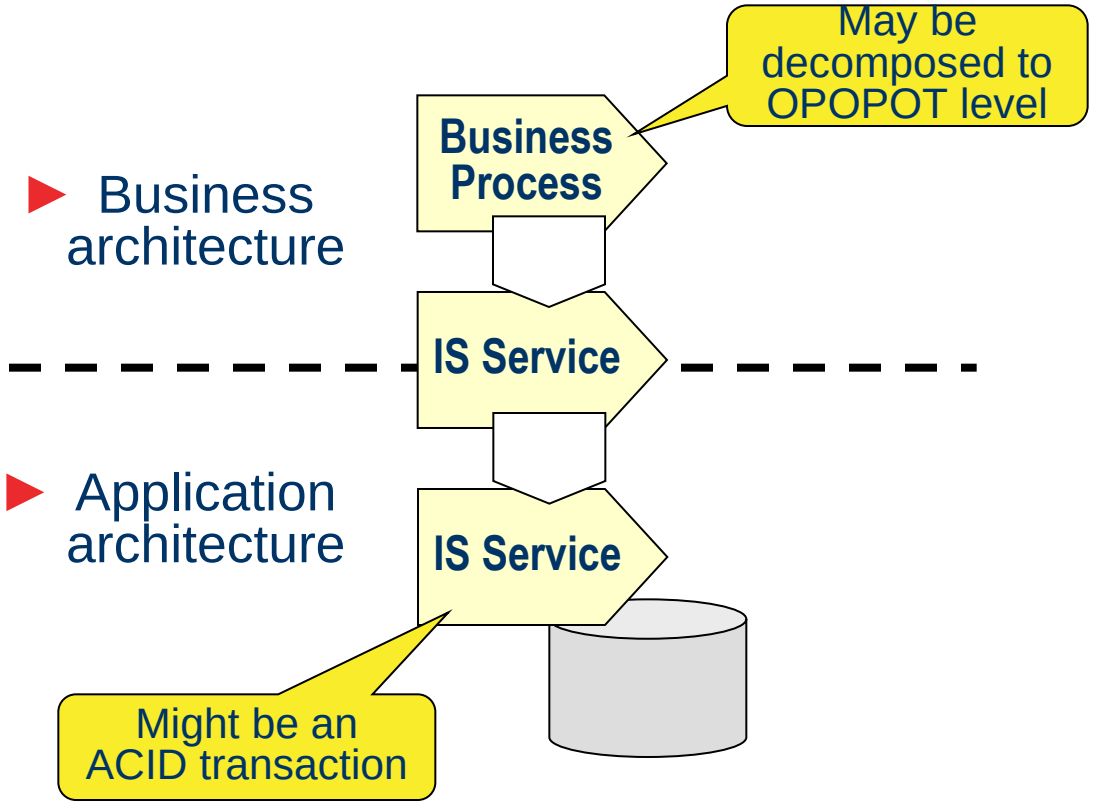
Process automation hierarchy

- A simple model for process decomposition and automation



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Part 6

III-RM

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Figure 5-1 Architecture Development Cycle

Business architecture

Business Services
Business Function
Business Services
Business Function
Business Services
Business Function
Business Services
Business Function

Application architecture

IS Services
Application Component
IS Services
Application Component

Use Case IS Services
User App
Use Case IS Services
User App
Business IS Services
Broker App
Data IS Services
Data App
Data IS Services
Data App

III-RM Integrated Information Infrastructure Reference Model

An SOA design pattern for Application architecture

Technology architecture

Platform Services
Technology Component
Platform Services
Technology Component
Platform Services
Technology Component
Platform Services
Technology Component

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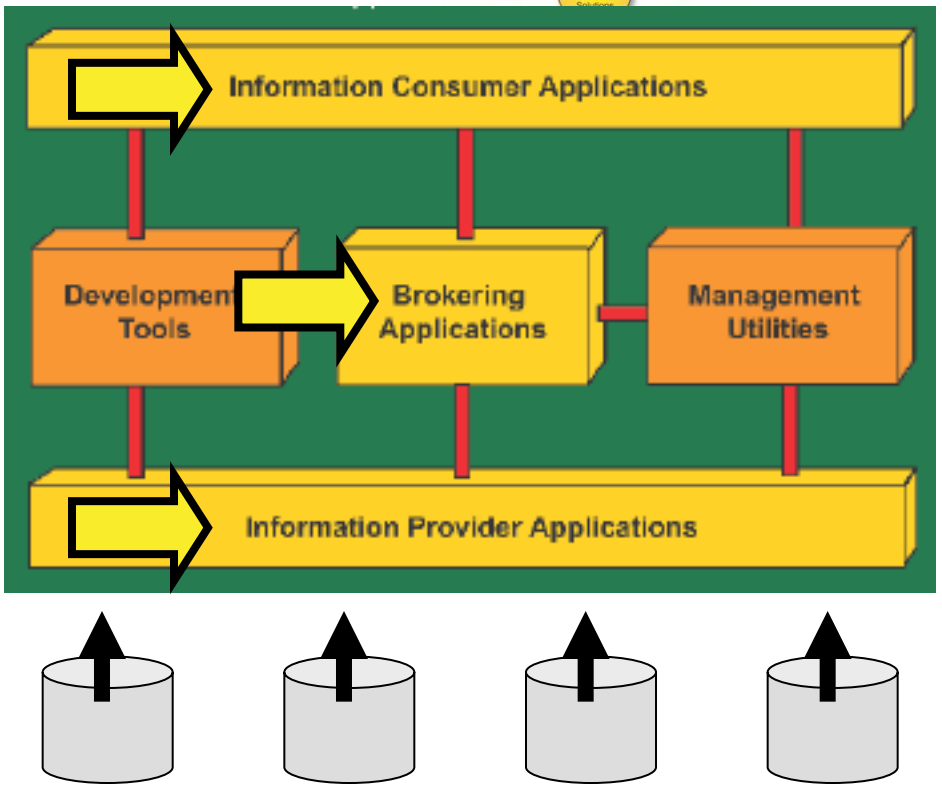
TOGAF-speak for these ideas

- **Information Consumer Applications**
  - deliver content to the user of the system, and provide services to request access to information in the system on the user's behalf
- **Brokering Applications**
  - manage the requests from any number of clients to and across any number of Information Provider Applications
- **Information Provider Applications**
  - provide responses to client requests and rudimentary access to data managed by a particular server
- The overall set creates an environment that provides a rich set of end-user services for transparently accessing heterogeneous systems, databases, and file systems.
- **TOGAF v9**



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A Technical Reference Model (TRM)

Figure 5-1 Architecture Development Cycle

Business architecture

Business Services
Business Function
Business Services
Business Function
Business Services
Business Function
Business Services
Business Function

Application architecture

IS Services
Application Component
IS Services
Application Component
Use Case IS Services
User App
Use Case IS Services
User App
Business IS Services
Broker App
Data IS Services
Data App
Data IS Services
Data App

Technology architecture

Platform Services
Technology Component
Platform Services
Technology Component
Platform Services
Technology Component
Platform Services
Technology Component

TRM Technical Reference Model
A hierarchical catalogue of platform services

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TOGAF uses abstraction

- to classify and divide up architecture descriptions.

In Architecture Development Method		In Enterprise Continuum	
Composition	**Omission**	**Idealisation**	**Generalisation**
High level	**Business**	**Ideal**	**Generic**
Enterprise / Strategy	Business	Requirements	Foundation
x Segments	Data	Architecture building blocks	Common System
x * y Capabilities	Applications	Solution building blocks	Industry
	Technologies	Deployed Solutions	Organisation
Low level	**Technology**	**Real**	**Specific**

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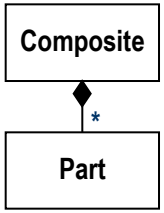
Kinds of abstraction: summary

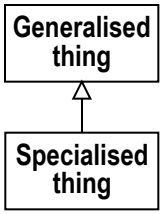
Omission	Composition	Generalisation	Idealisation
Vacuous	Coarse-grained composite	Universal	Concept
Sketchy	Mid-grained composite	Fairly generic	Logical Model
Elaborate	Fine-grained composite	Fairly specific	Physical Model
Complete	Elementary part	Uniquely configured	Physical Material
Elaboration	**Decomposition**	**Specialisation**	**Realisation**

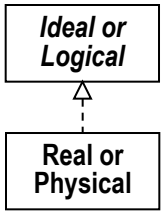
Architecture

Detailed Design

Implementation







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