Enterprise Architecture Modelling with ArchiMate 3 - Overview

Knut Hinkelmann
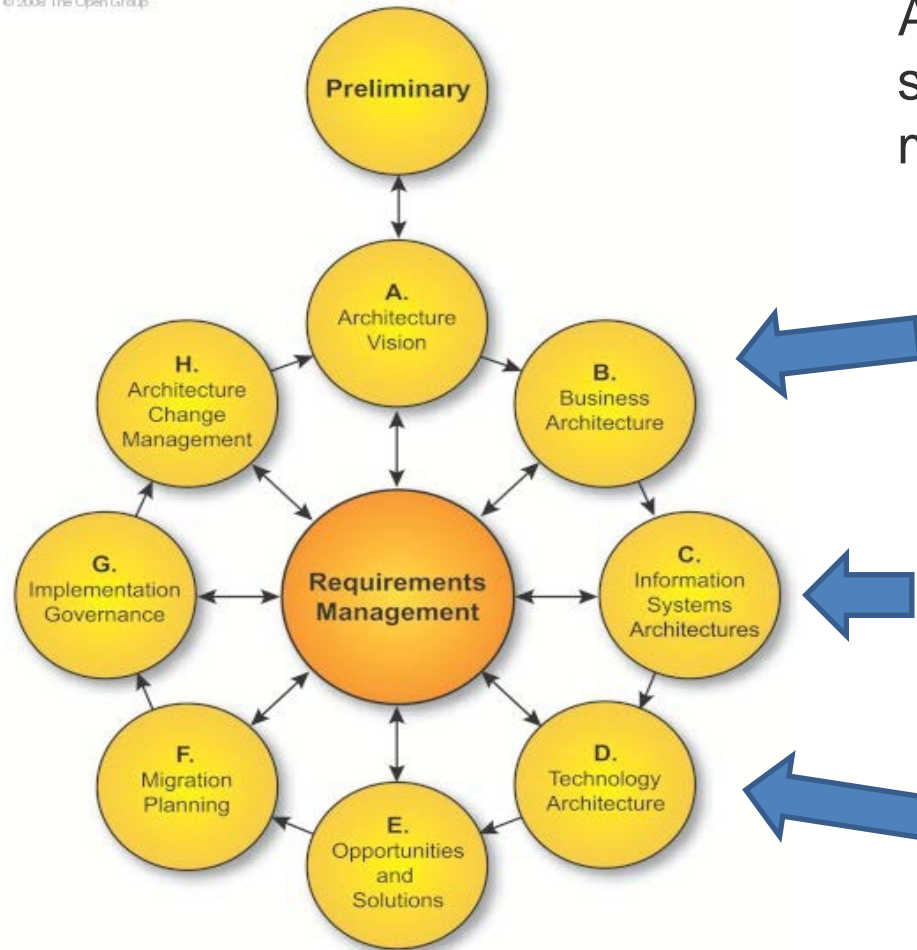
Reference

■ The ArchiMate 3 specification is available at
http://pubs.opengroup.org/architecture/archimate3-doc/

■ It is referenced in this presentation as ArchiMate 3

TOGAF Architecture Views

ArchiMate is a modeling language that supports the TOGAF content metamodel and the TOGAF ADM
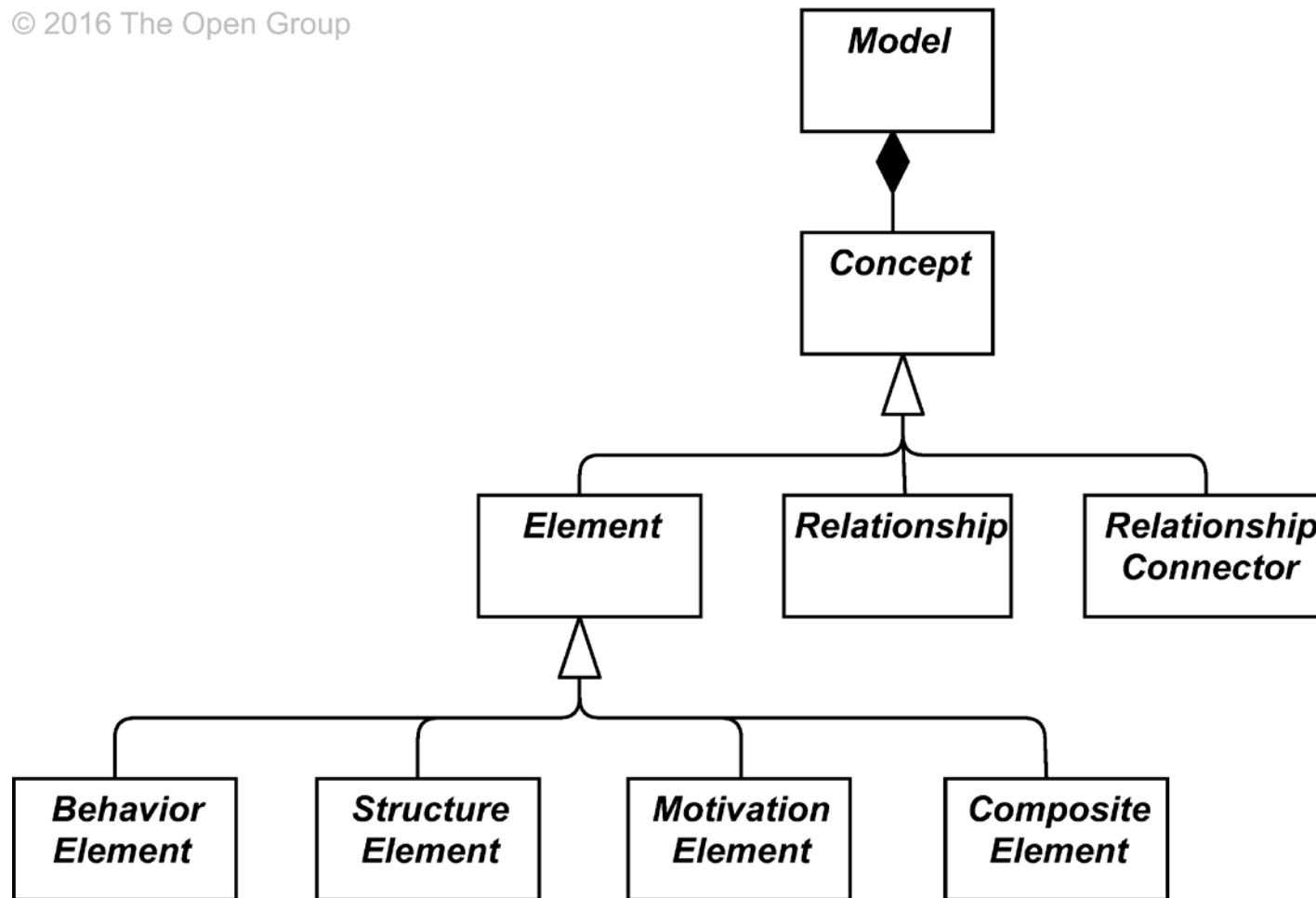
Business Architecture

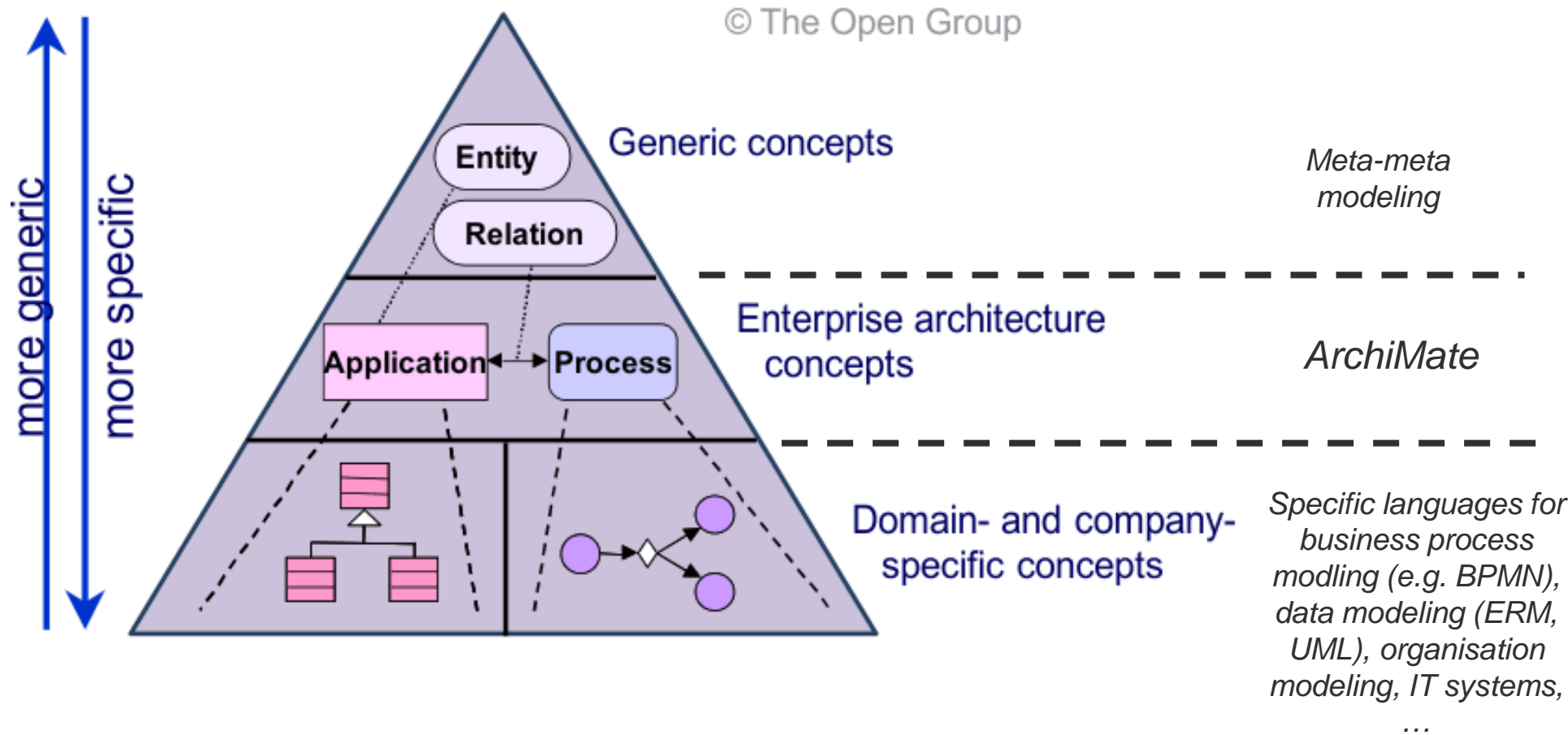**Data Architecture** | **Application Architecture**

Technology Architecture

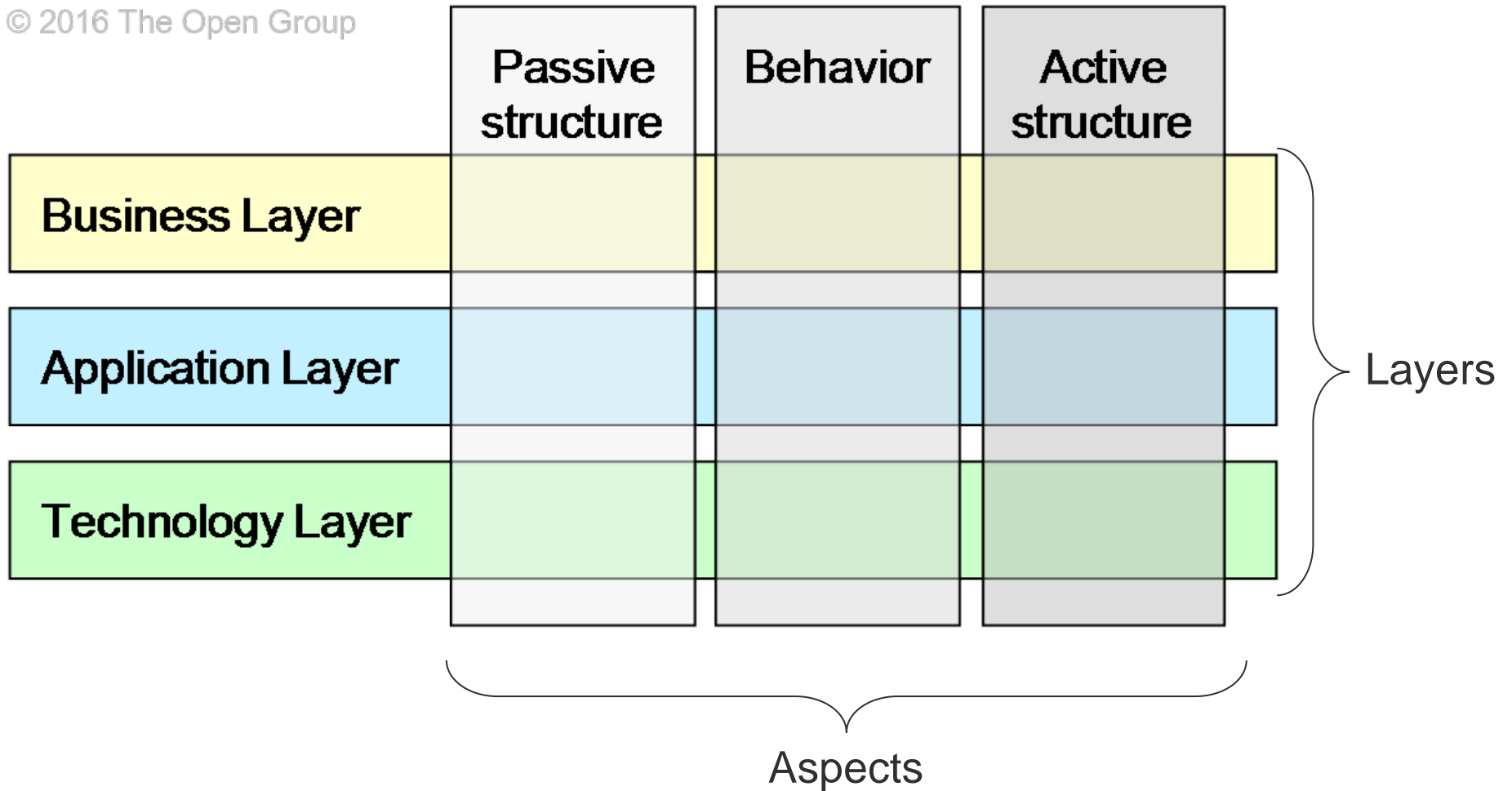# Top-Level Hierarchy of ArchiMate Concepts

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ArchiMate 3, section 3.2

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Metamodel Structure of ArchiMate

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more generic — more specific

Entity — **Generic concepts** — *Meta-meta modeling*

Relation

Application ↔ **Process** — **Enterprise architecture concepts** — *ArchiMate*

Domain- and company-specific concepts — *Specific languages for business process modling (e.g. BPMN), data modeling (ERM, UML), organisation modeling, IT systems, …*

Source: ArchiMate 2.1 Specification, http://pubs.opengroup.org/architecture/archimate2-doc/chap02.html

The ArchiMate Core Framework

	Passive structure	Behavior	Active structure
Business Layer			
Application Layer			
Technology Layer			

Layers

Aspects

ArchiMate 3, section 3.4

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Layers in ArchiMate

■ *Business Layer*

 ♦ business services offered to customers, which are realized in the organization by business processes performed by business actors.

■ *Application Layer*

 ♦ application services that support the business, and the applications that realize them.

■ *Technology Layer*

 ♦ technology services such as processing, storage, and communication services needed to run the applications

 ♦ computer and communication hardware and system software that realize those services.

 ♦ Physical elements for modeling physical equipment, materials, and distribution networks (new in ArchiMate 3)

ArchiMate 3, section 3.4

Aspects in ArchiMate

■ *Active Structure*

 ♦ represents the structural elements (the business actors, application components, and devices that display actual behavior).
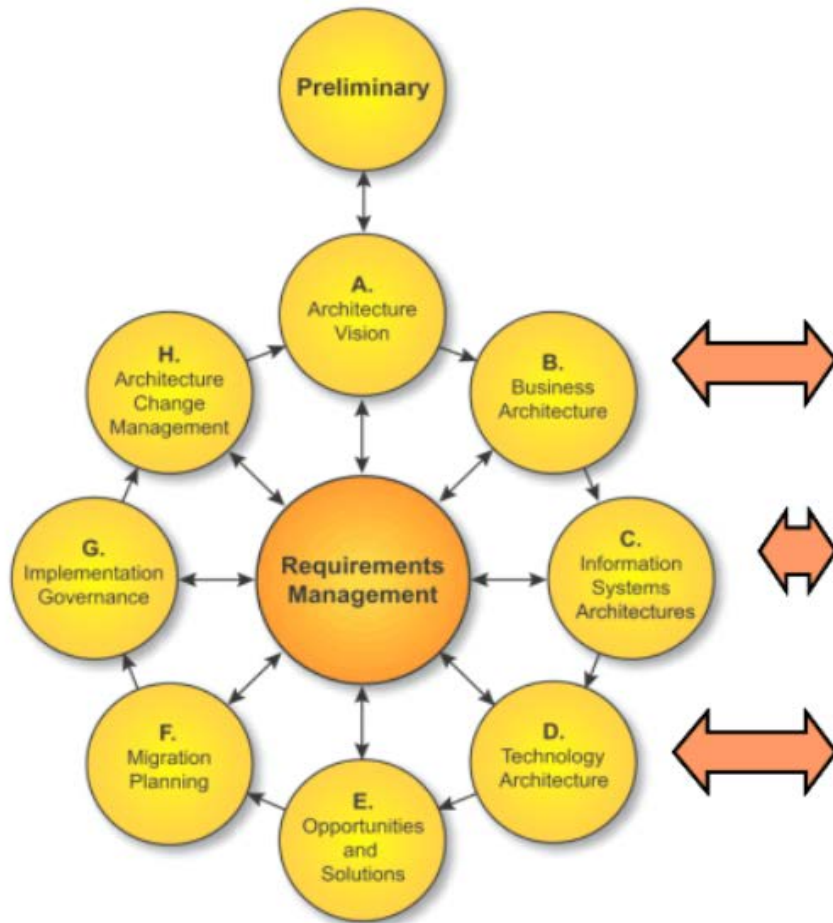
■ *Behavior*

 ♦ represents the behavior (processes, functions, events, and services) performed by the actors.

 ♦ Structural elements are assigned to behavioral elements, to show who or what displays the behavior.

■ *Passive Structure*

 ♦ represents the objects on which behavior is performed. These are usually information objects in the Business Layer and data objects in the Application Layer, but physical objects.

ArchiMate 3, section 3.4

TOGAF Architecture Views

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TOGAF ADM

ArchiMate

ArchiMate and TOGAF

TOGAF ADM
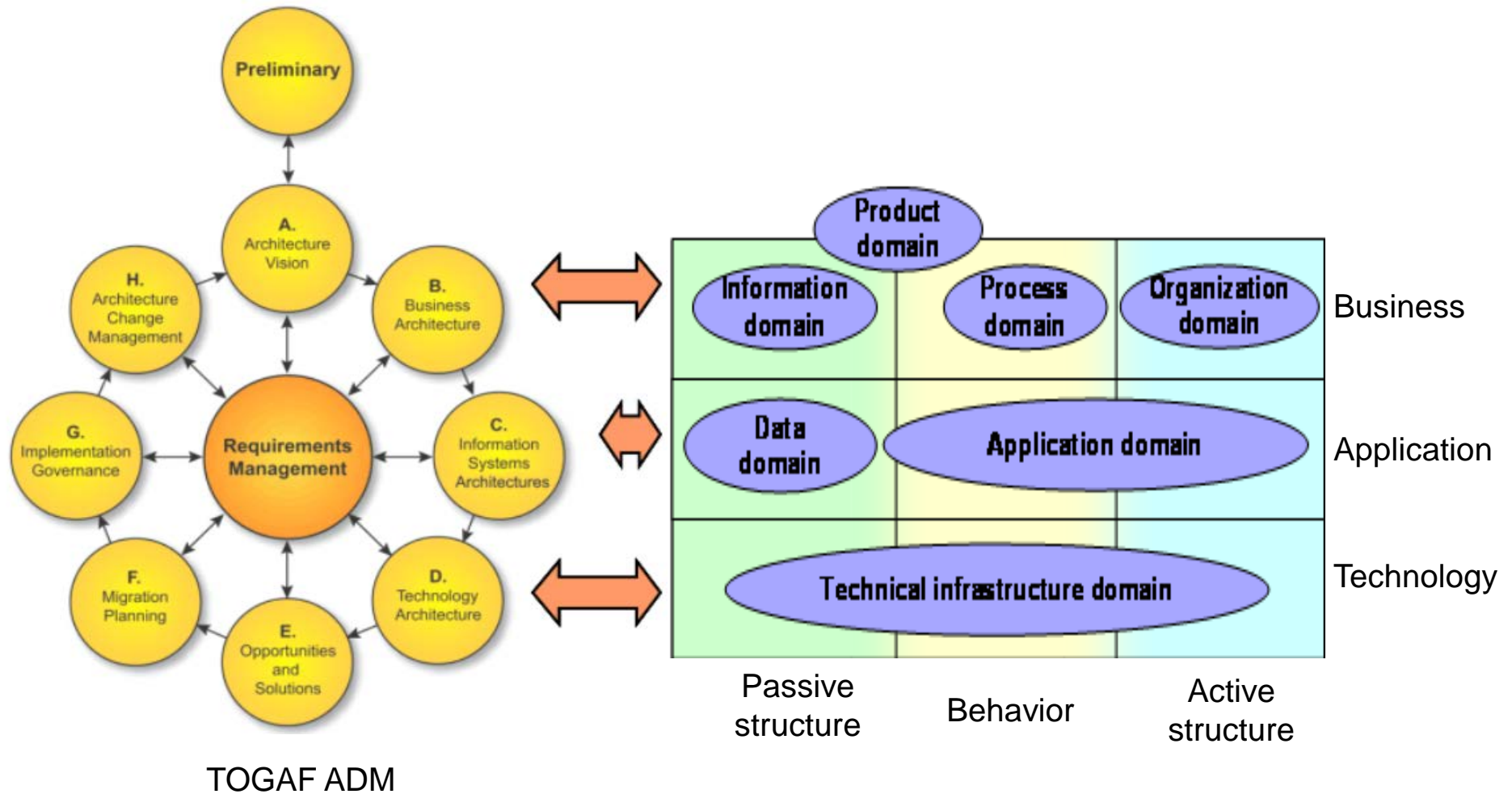
Abstractions in ArchiMate (1)

■ Separate Behavior from active structure

♦ *Behavior*: *what* the system must do and how the system does it

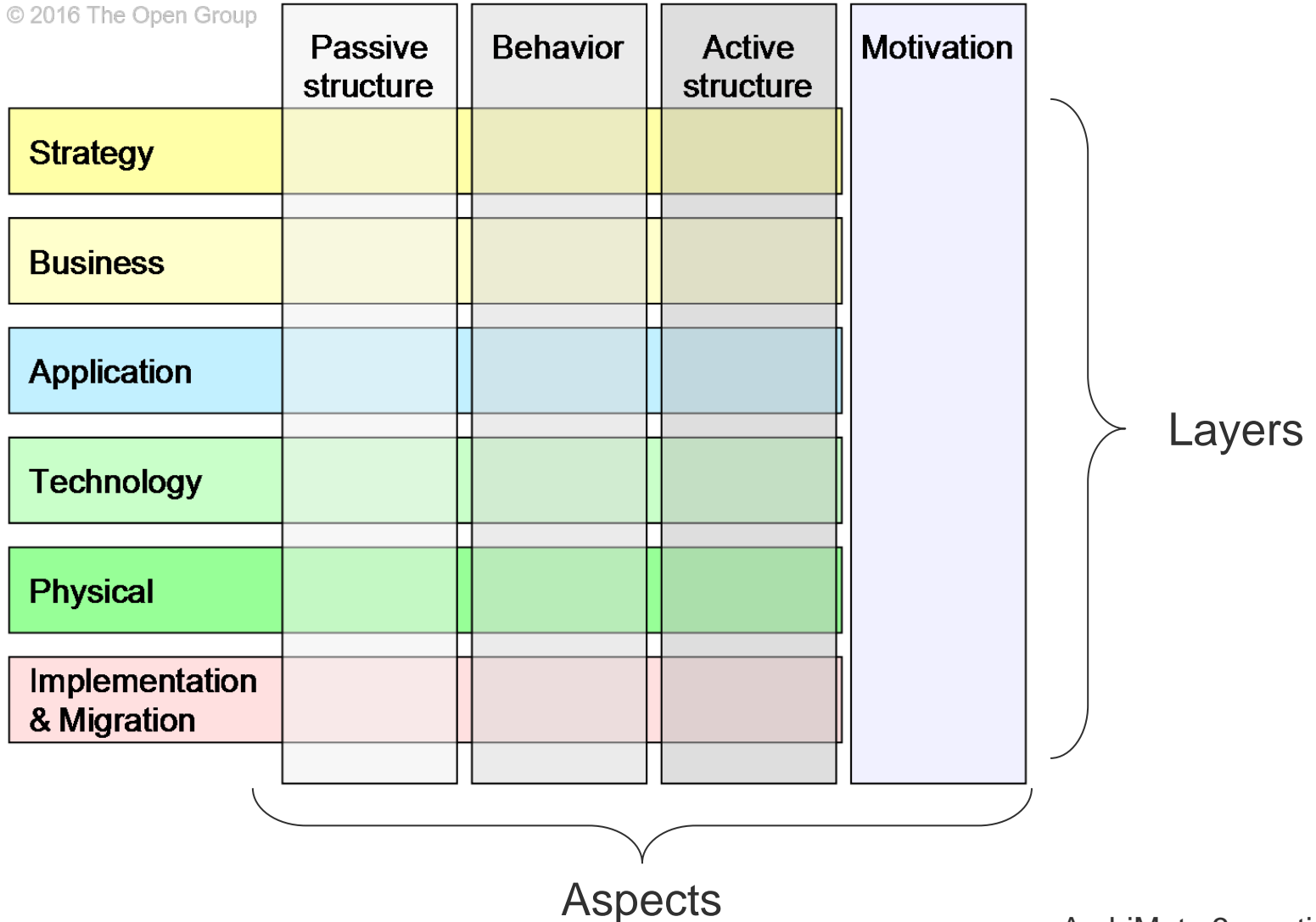♦ *Active structure*: the system constituents (people, applications, and infrastructure) that do it

■ External vs. internal behavior :

♦ *External view:* *what* the system has to do for its environment (e.g. a service)

♦ *Internal view:* *how* it does this (e.g. the process or application realising the service)

ArchiMate 3, section 3.6

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Abstractions in ArchiMate (2)

- Conceptual, logical, and physical abstraction levels

  - ♦ *conceptual elements* represent the information the business finds relevant;

  - ♦ *logical elements* provide logical structure to this information for manipulation by information systems;

  - ♦ *physical elements* describe the storage of this information; for example, in the form of files or database tables.

- In the ArchiMate language, this corresponds with business objects, data objects, and artifacts, and the realization relationships between them

ArchiMate 3, section 3.6

The ArchiMate Full Framework

	Passive structure	Behavior	Active structure	Motivation
Strategy				
Business				
Application				
Technology				
Physical				
Implementation & Migration				

Layers

Aspects

ArchiMate 3, section 3.5

Hierarchy of Behavior and Structure Elements

ArchiMate 3, section 4.1

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