Enterprise Architecture

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Dimensions of Architectural Modeling

Lecture 6
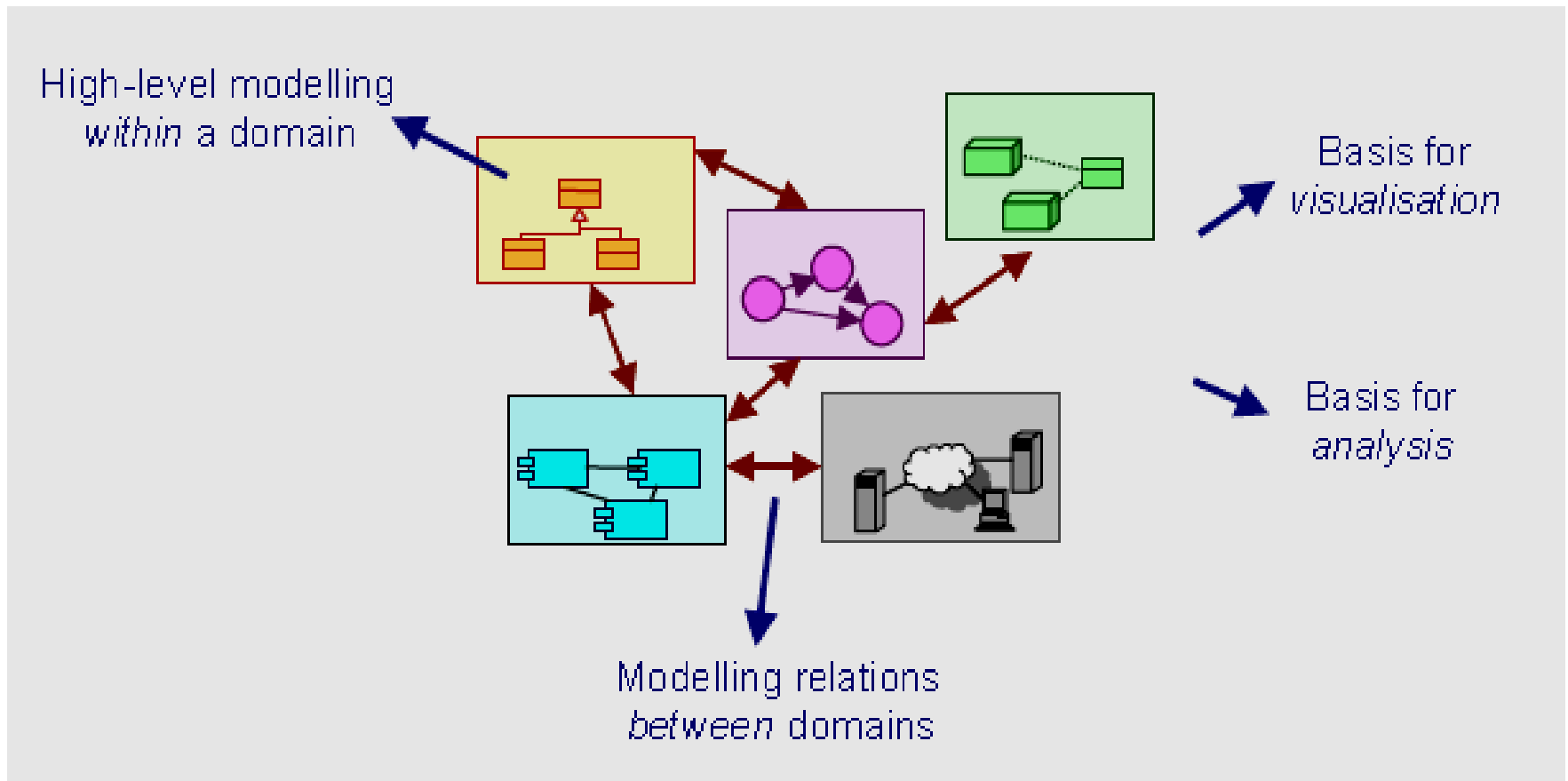
Week 6 Slides

King AbdulAziz University - FCIT

Overview

- **Relevant relations *between the domains***

- **Service Orientation and Layering**

- **Three Dimensions of Modeling**

- **Main concepts of the ArchiMate language**

- **Concepts of Layers**

- **Business, Application and Technology Concept**

Relevant relations *between domains*

- There are strong dependencies between the domains

- Examples:

- The goal of the (primary) business processes of an organization is to realize their products

- Software applications support business processes

- Technical infrastructure is needed to run the applications

- Architects are needed to align designs in the different domains, a clear picture of the domain interdependencies is indispensable

Relevant relations *between domains*

In diagram, the role that the enterprise architecture modeling language plays in our approach is summarized.

High-level modelling *within* a domain

Basis for *visualisation*

Basis for *analysis*

Modelling relations *between* domains

**The role of the ArchiMate language**

Relevant relations *between domains*

- ## **<u>The ArchiMate language</u>**

- Provides a means for *integration*

- Allows creation of models that show high-level structures within domains

- Show high-level relationships between domains

- Provides the basis for the visualization and analysis

Service Orientation and Layering

▪ A ***service*** is defined as a unit of functionality that some entity (e.g., a system, organization, or department) makes available to its environment

▪ It has some value for certain entities in the environment (typically the 'service users')

▪Service orientation supports current trends ranging from the service-based network economy to ICT integration with Web services

▪ Service orientation may typically lead to a layered view of enterprise architecture models, where the service concept is one of the main linking source
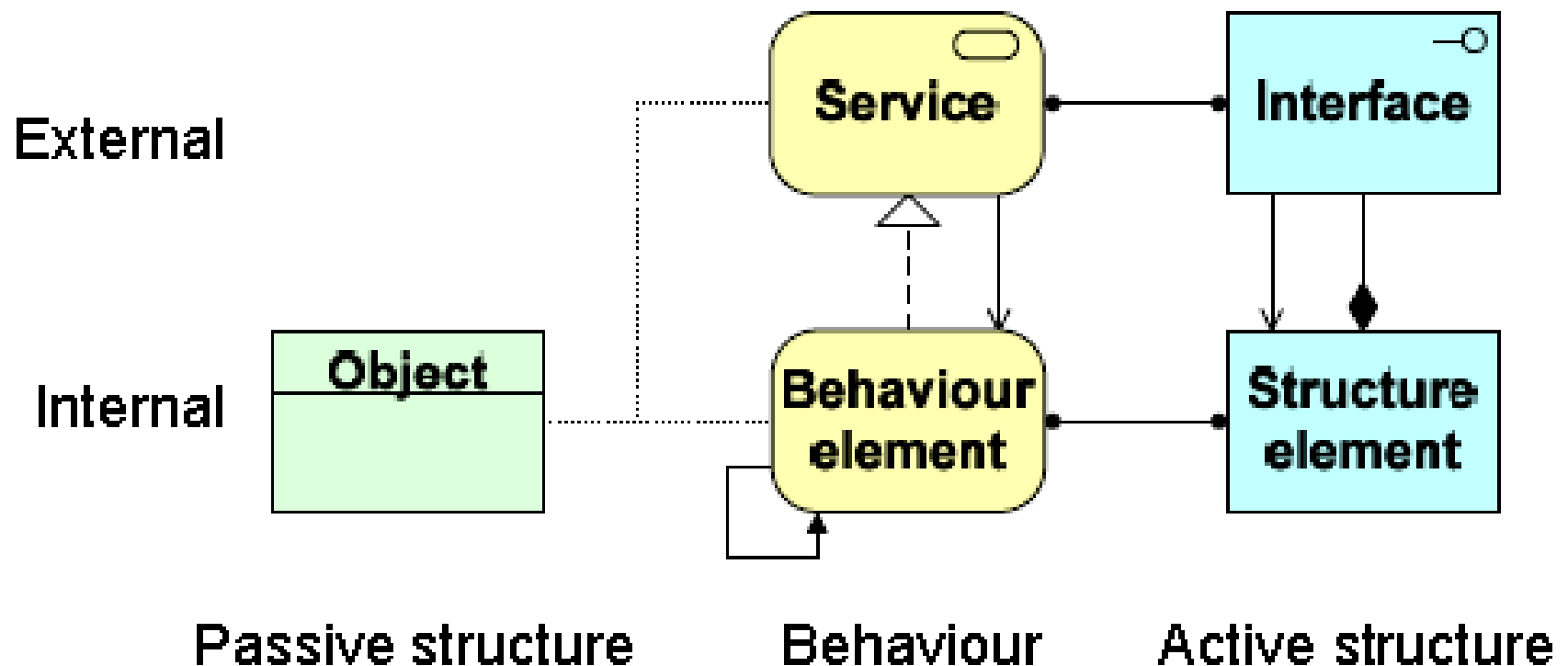
Service Orientation and Layering
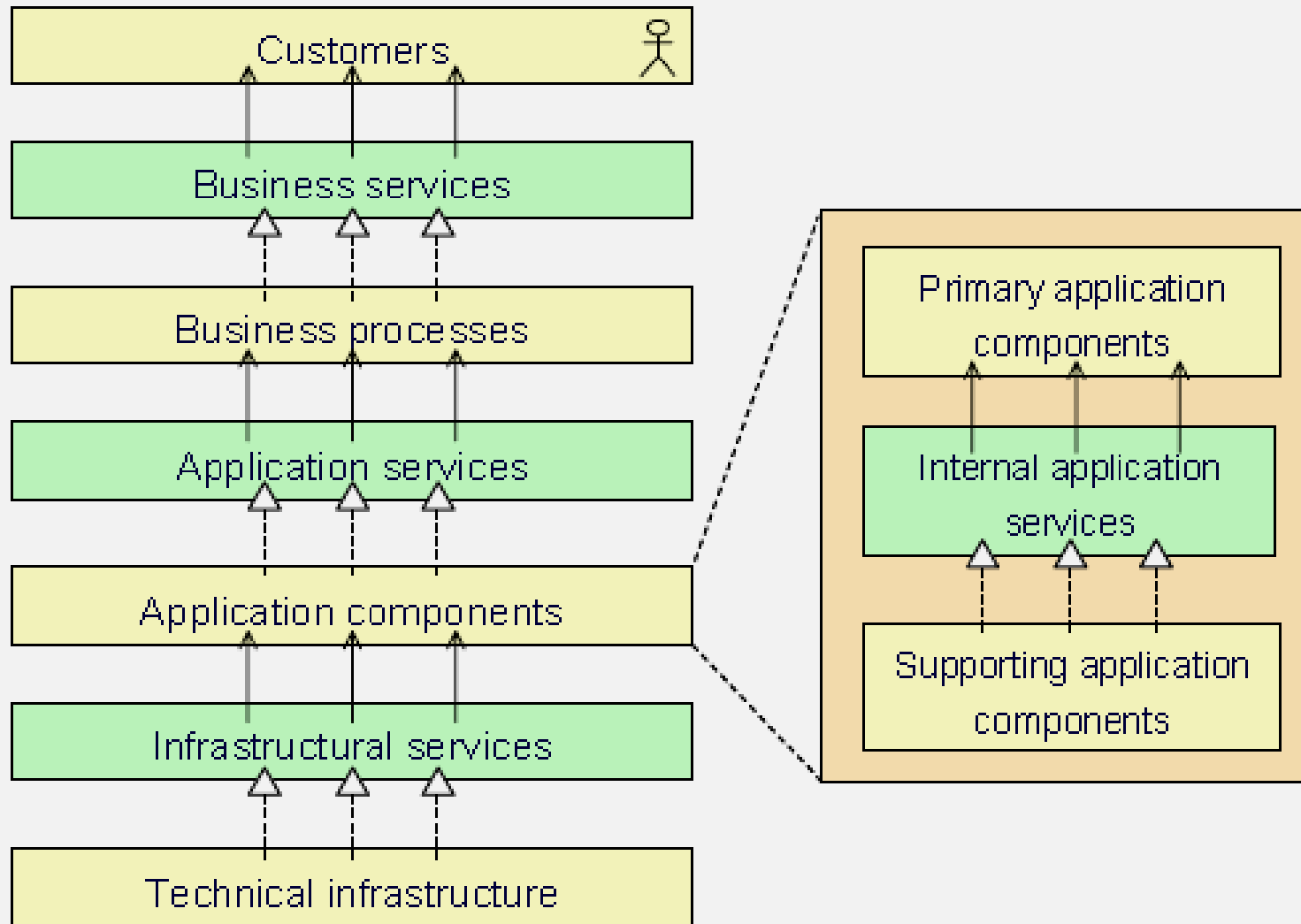
Service Layered View

Service Orientation and Layering

■ In an abstract level, the concepts that are used within each layer are similar, we define more concrete concepts that are specific for a certain layer. In this context, we distinguish three main layers:

1. The ***business layer*** *offers products and services to external customers,* which are realized in the organization by business processes (performed by business actors or roles)

2. The **application layer** supports the business layer with application services which are realized by (software) application components

3. The **technology layer** offers infrastructural services (e.g., processing, storage, and communication services) needed to run applications, realized by computer and communication devices and system software
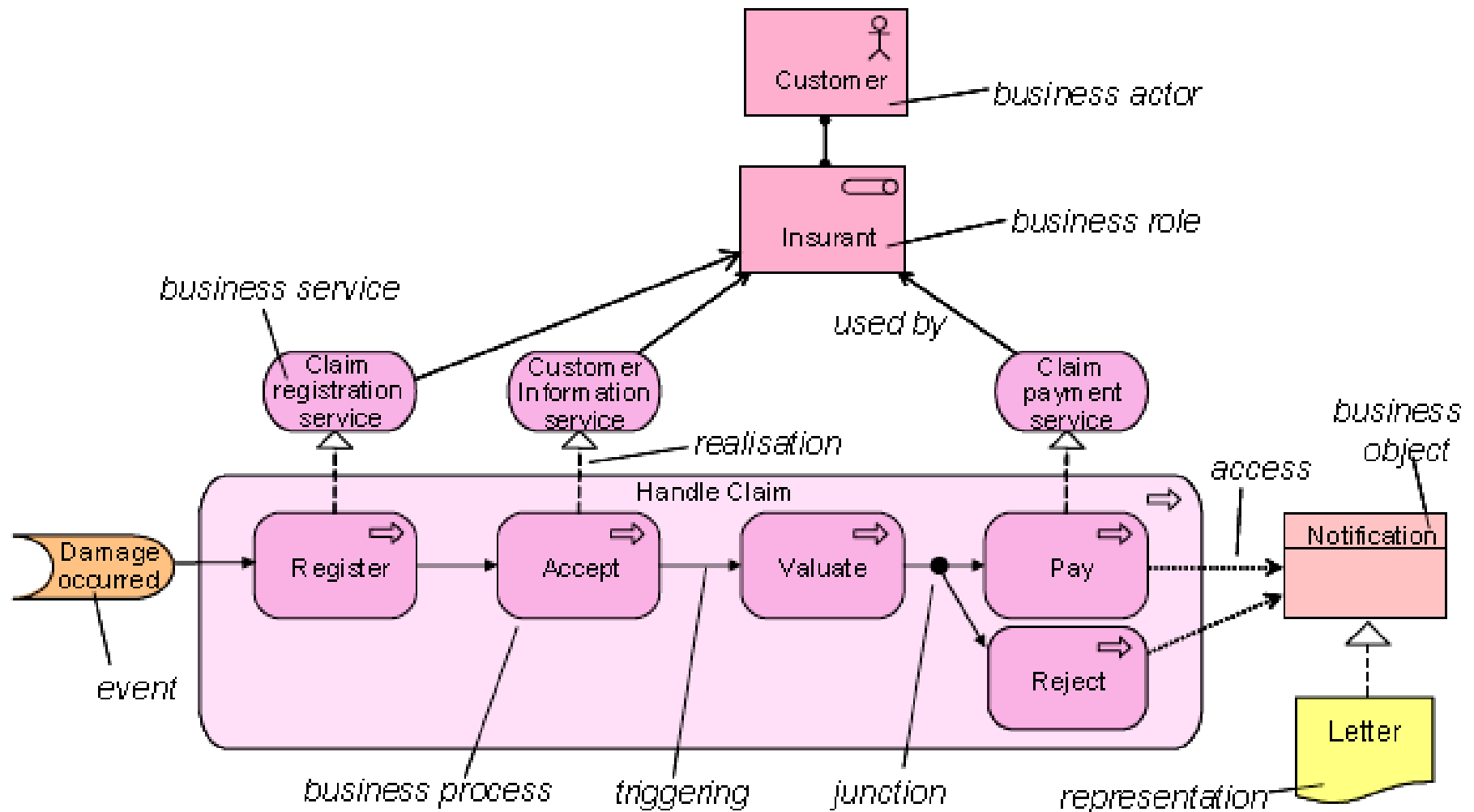
Concepts of the ArchiMate language

The Core Concept of the Archimate Language

ArchiMate , Service Orientation & Layering
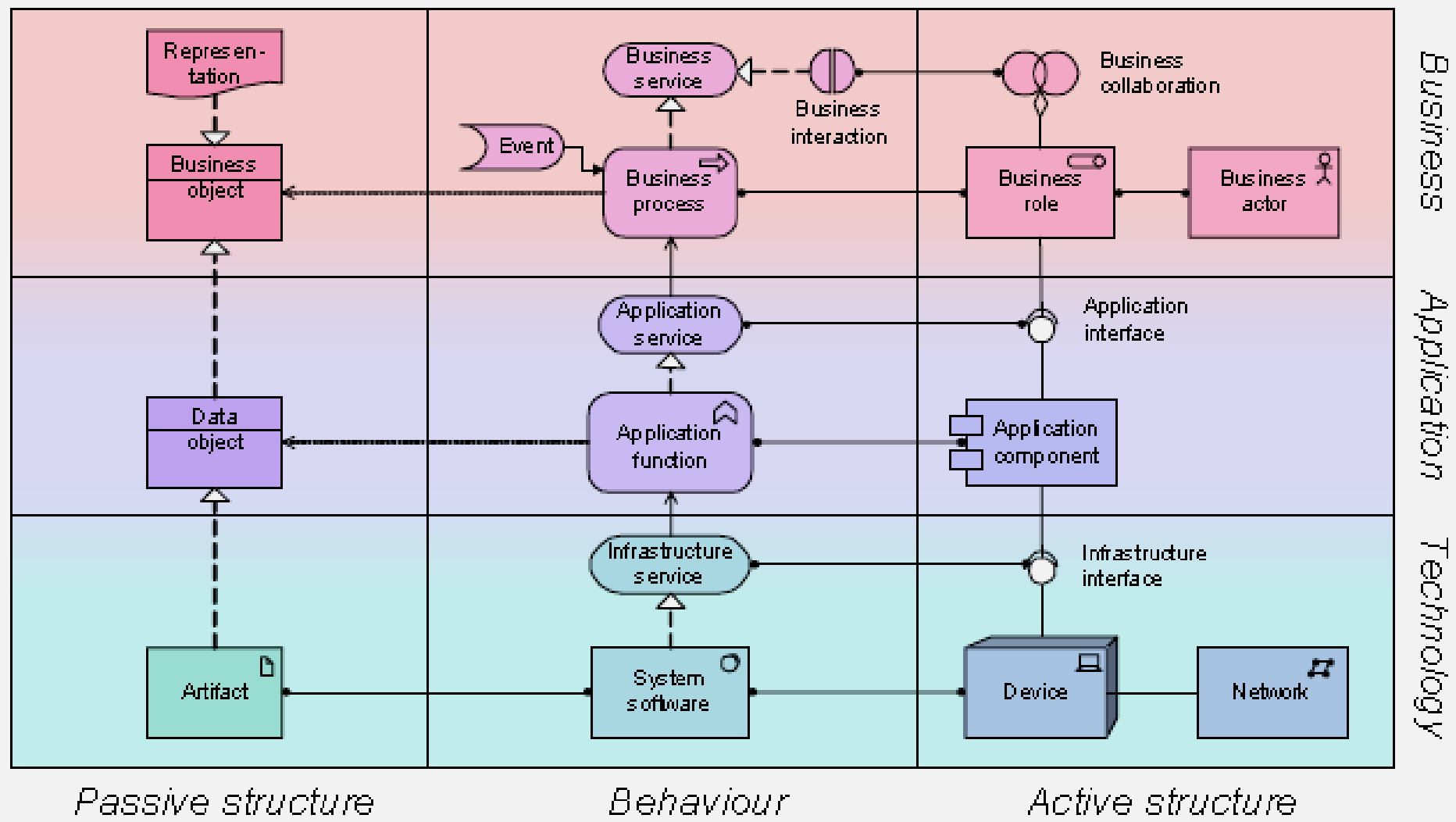
Layering and Service Orientation in ArchiMate
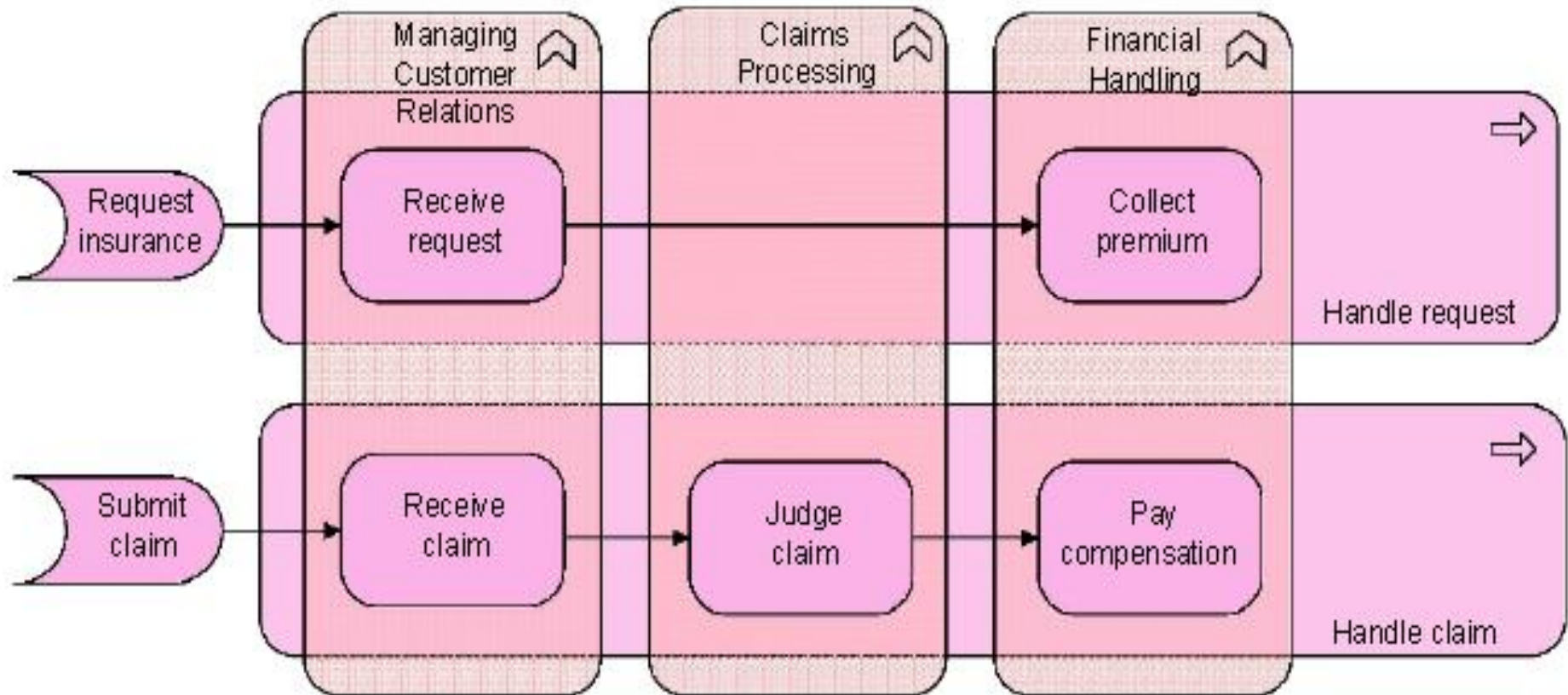
Business Layer Concepts in ArchiMate

Example of a business layer model

Business Structure Concepts

▪ ***Business process:*** a unit of internal behavior or collection of causally- related units of internal behavior intended to produce a defined set of products and services.

▪ ***Business function:*** a unit of internal behavior that groups behavior according to (for example) required skills, knowledge, resources, etc.

▪ ***Business service:*** the externally visible ('logical') functionality, which is meaningful to the environment and is realized by business behavior (business process, business function or business interaction)

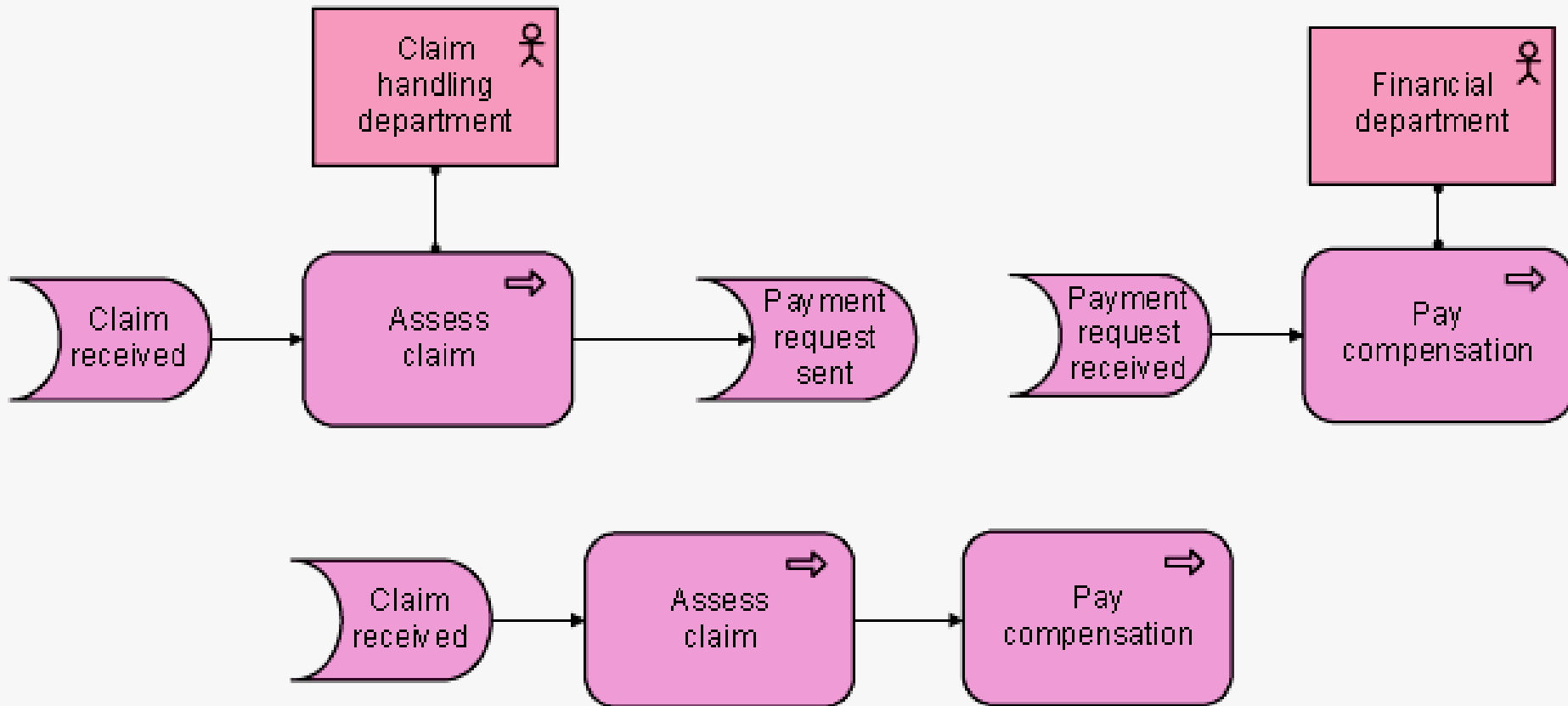# Business Structure & Behavior Concepts in ArchiMate

- Illustration of Business processes versus business functions

Interaction versus service use, in ArchiMate
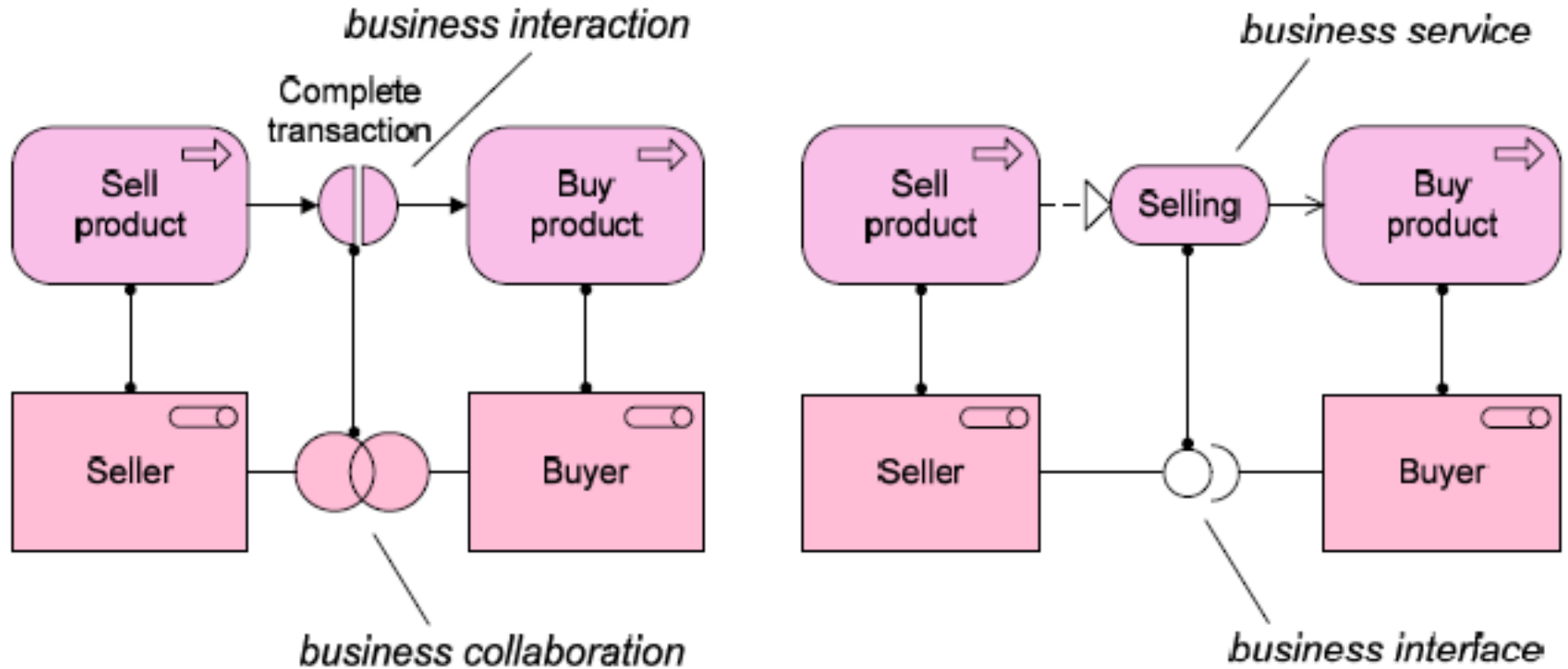
# Events to decouple processes, in ArchiMate

Higher-Level Business Concepts

- The higher-level business concepts provide a way to link the operational side of an organization to its business goals.

- These concepts are also concerned with the products or services that an organization offers to its customers.

- We define a (financial or informational) product as of a collection of services, together with the rules for their use
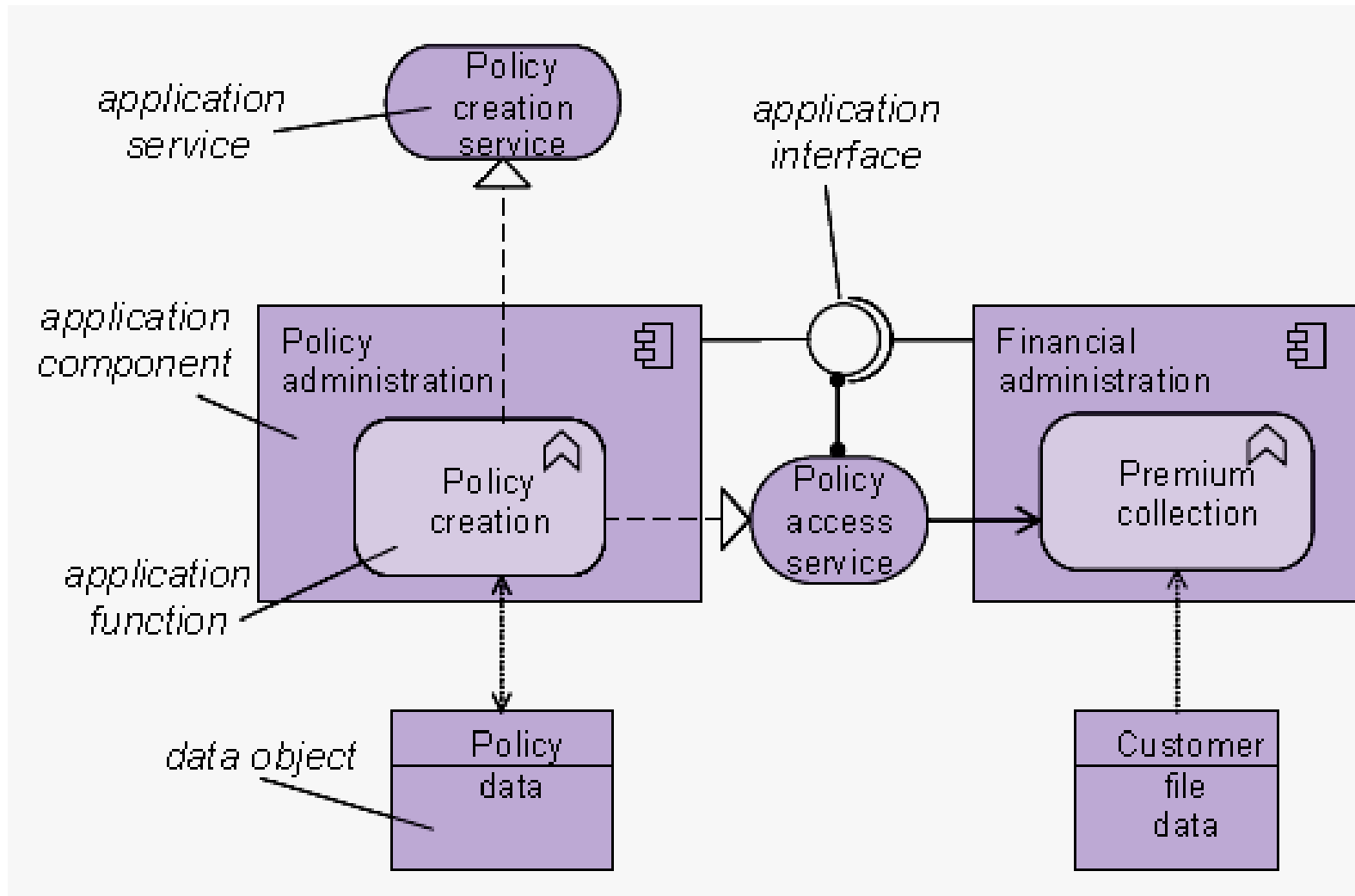
Product: a coherent collection of services accompanied by a _contract/_set of agreements, which is offered as a whole to (internal or external) customers.

Higher-Level Business Concepts
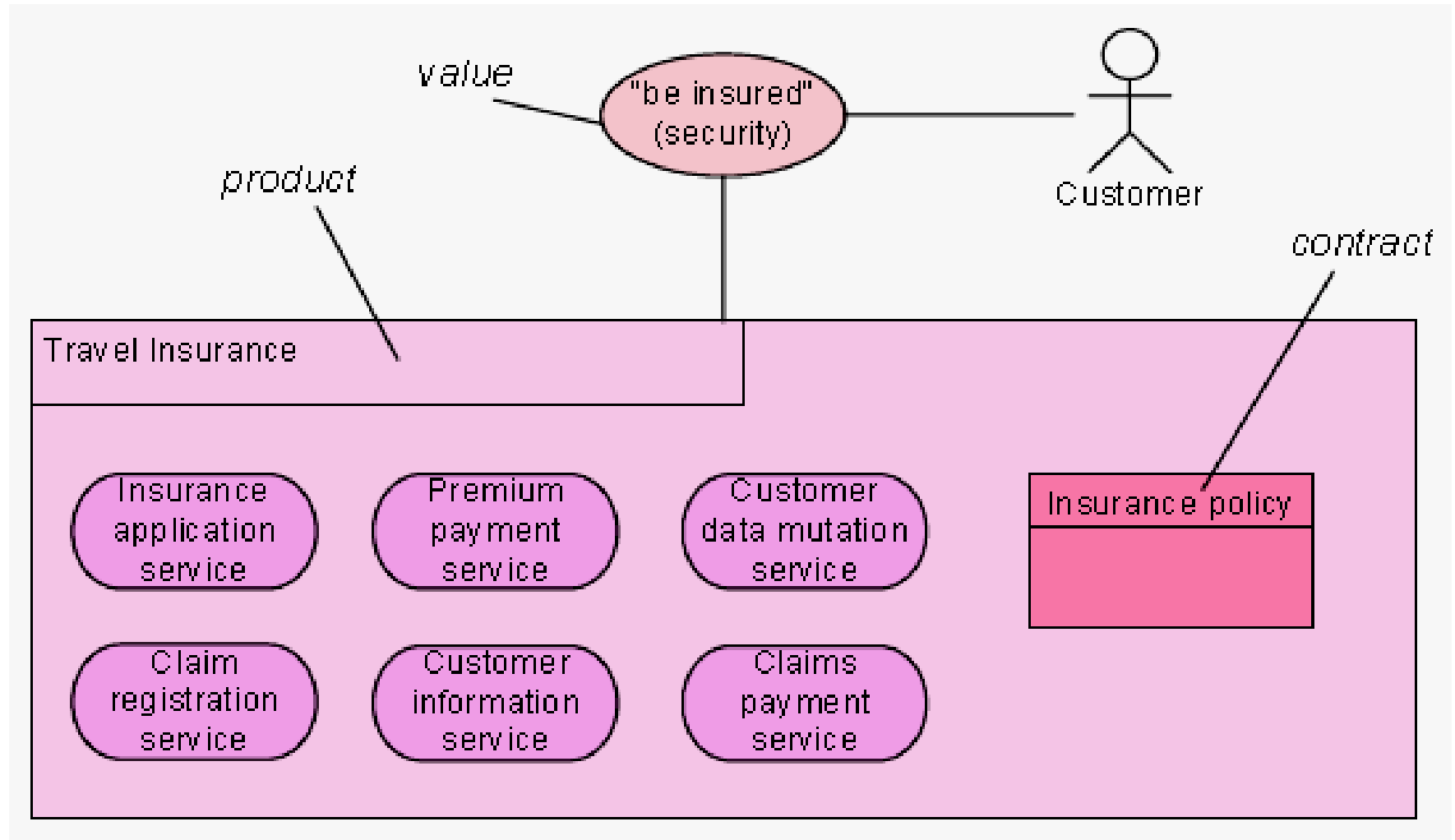
Services grouped into a product

Application Layer Concepts

Example of an application layer model

Business–Application Alignment

The application layer and the business layer can be easily linked in ArchiMate . Two types of relations provide this link:

1. Application services can be *used by business behavior and application* interfaces are *used by business actors roles, i.e., there is a support relation* between the application and business layers.

2. Data objects can *realize business objects; this means that a data object is* an electronic *representation of the business object, i.e., there is an implementation* relation between the application and business layers.

Business–Application Alignment
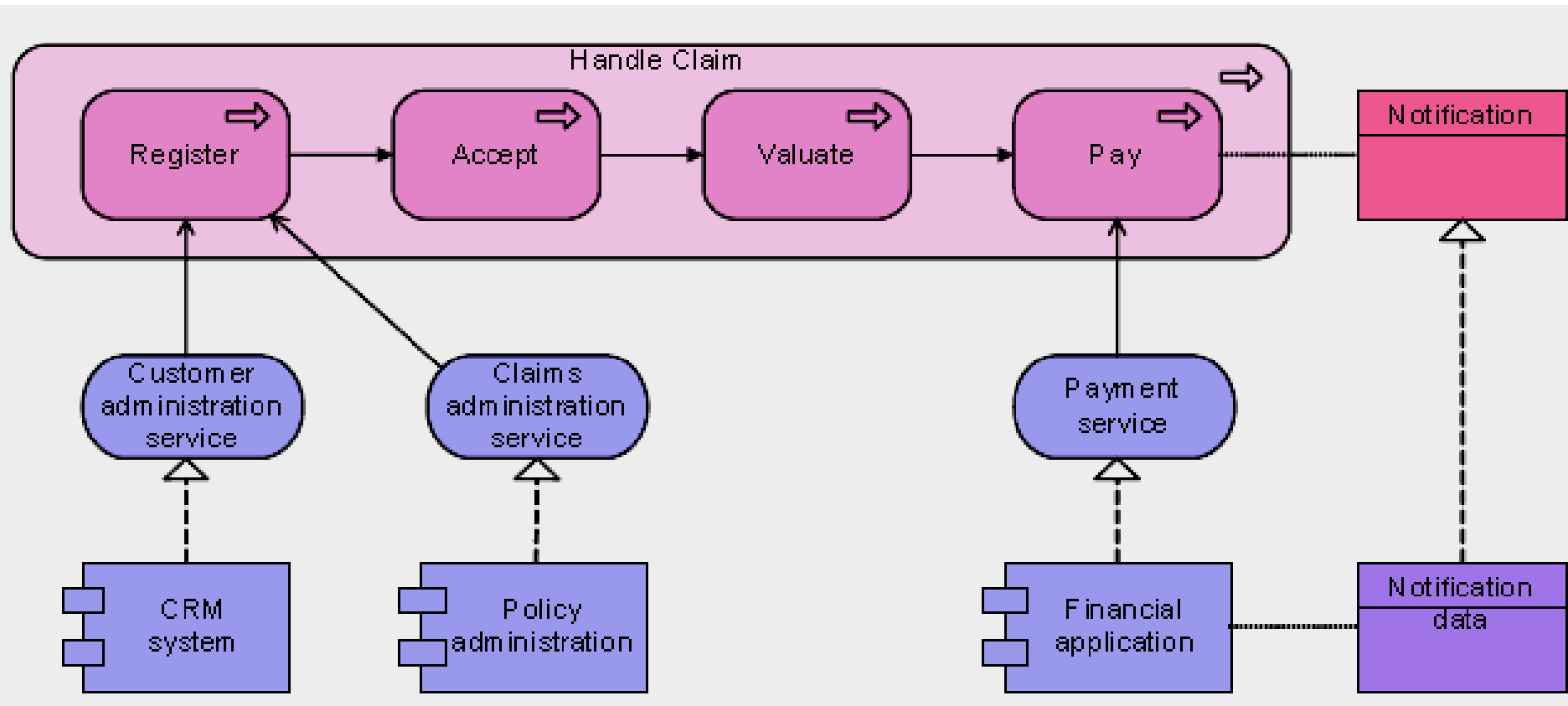
Example of a business–application alignment model