

# *Enterprise Architecture Views and Viewpoints in ArchiMate*

Source: ArchiMate 1.0 Specification, chapter 9, [http://www.opengroup.org/archimate/doc/ts\\_archimate/chap9.html](http://www.opengroup.org/archimate/doc/ts_archimate/chap9.html)



# *Views and Viewpoints*

## ■ View:

- ◆ Part of an architecture description that
  - addresses a set of related concerns and
  - is addressed to a set of stakeholder
- ◆ A view is specified by means of a viewpoint

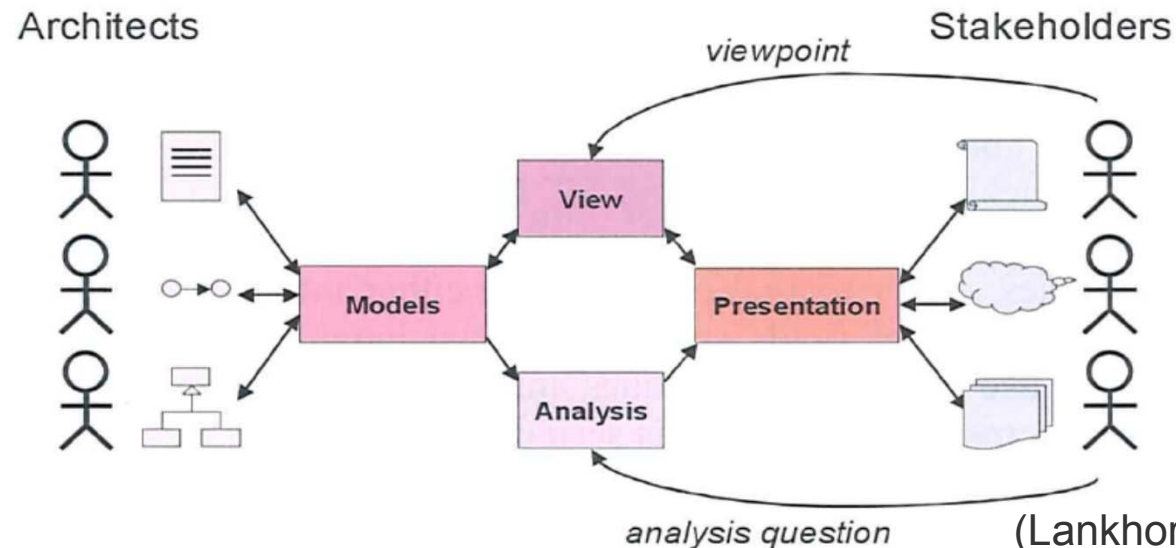
## ■ Viewpoint ...

- ◆ prescribes the concepts, models, analysis techniques, and visualizations that are provided by the view

*A view is what you see and  
a **viewpoint** is where you are looking from*

# Communicating about Architecture

- Viewpoints are designed for the purpose of communicating certain aspects of an architecture.
- Viewpoints are a means to focus on particular aspects of the architecture;
- the aspects are determined by the concerns of the stakeholder with whom communication takes place.
- The architect informs the stakeholders, and the stakeholders give feedback on the presented aspects.



(Lankhorst et al. 2005, p. 4)

# *Examples of Stakeholders and Concerns*

## **End Users**

- ◆ What are the consequences for his workplace?

## **Architect**

- ◆ What is the consequence for the maintainability of a system?

## **Upper-level Management**

- ◆ How can we ensure that our policies are followed in the development and operation of processes and systems?

## **Operational Manager** – responsible for exploitation or maintenance

- ◆ Is there a need to adapt maintenance processes?

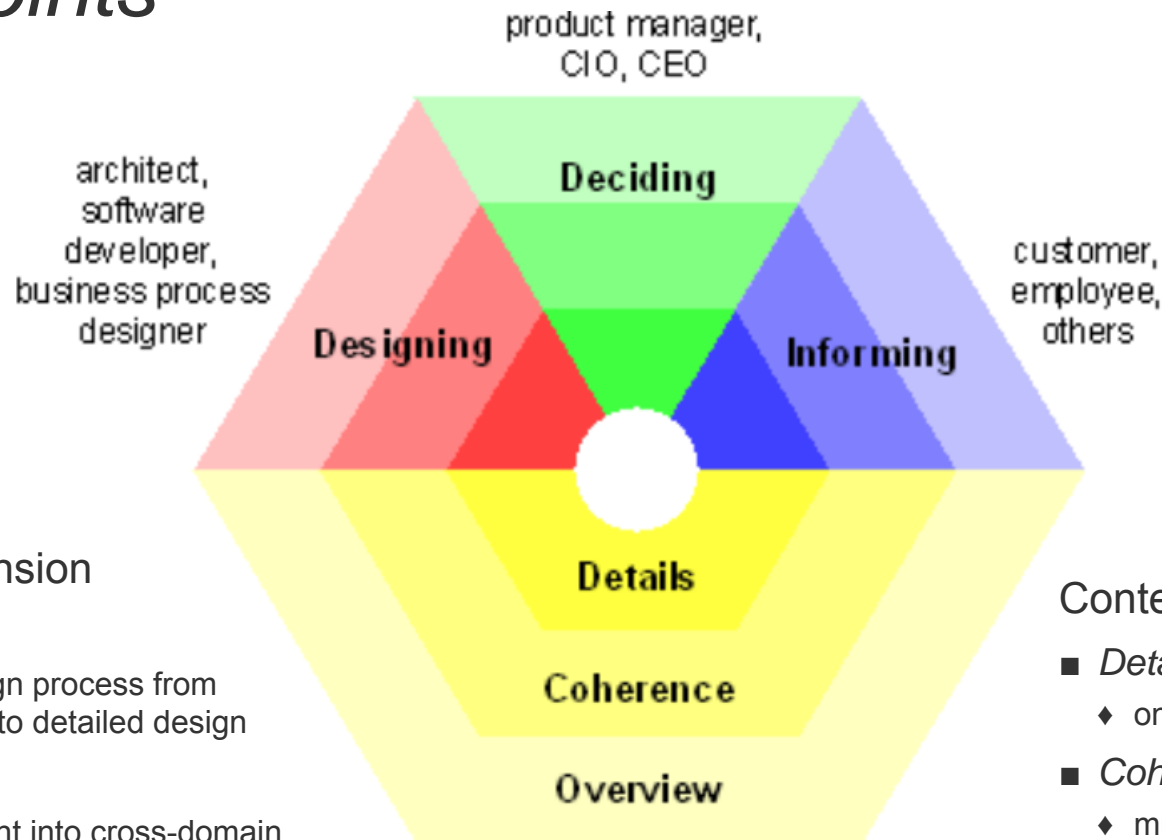
## **Project Manager** – responsible for development of new applications

- ◆ What is the dependence of business processes on the applications to be built?

## **Developer**

- ◆ What are the required modification with respect to the current situation?

# Classification of Enterprise Architecture Viewpoints



## Purpose Dimension

- *Designing*
  - ◆ support design process from initial sketch to detailed design
- *Deciding:*
  - ◆ offering insight into cross-domain architecture relations
- *Informing:*
  - ◆ achieve understanding, obtain commitment, convince

## Content Dimension

- *Details:*
  - ◆ one layer and one aspect
- *Coherence:*
  - ◆ multiple layers or multiple aspects
  - ◆ focus on architecture relations between layers or aspects
- *Overview:*
  - ◆ both multiple layers and aspects

# Classification of Enterprise Architecture Viewpoints: Purpose Dimension

	Typical Stakeholders	Purpose	Examples
<b>Designing</b>	architect, software developer, business process designer	navigate, design, support design decisions, compare alternatives	UML diagram, BPMN diagram, flowchart, ER diagram
<b>Deciding</b>	manager, CIO, CEO	decision-making	cross-reference table, landscape map, list, report
<b>Informing</b>	employee, customer, others	explain, convince, obtain commitment	animation, cartoon, process illustration, chart



# *Classification of Enterprise Architecture Viewpoints: Content Dimension*

	<b>Typical Stakeholders</b>	<b>Purpose</b>	<b>Examples</b>
<b>Details</b>	software engineer, process owner	design, manage	UML class diagram, BPMN process diagram
<b>Coherence</b>	operational managers	analyze dependencies, impact of-change	views expressing relations like “use”, “realize”, and “assign”
<b>Overview</b>	enterprise architect, CIO, CEO	change management	landscape map

# *Viewpoints in ArchiMate*

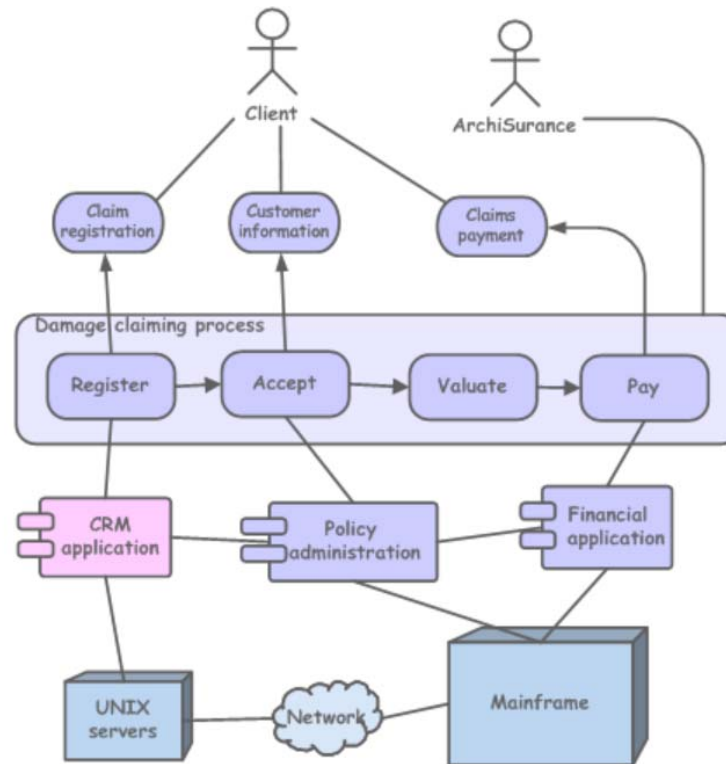
1. Introductory Viewpoint
2. **Organization** Viewpoint
3. **Actor** Co-operation Viewpoint
4. **Business Function** Viewpoint
5. **Business Process** Viewpoint
6. **Business Process** Co-operation Viewpoint
7. **Product** Viewpoint
8. **Application** Behavior Viewpoint
9. **Application** Co-operation Viewpoint
10. **Application** Structure Viewpoint
11. **Application** Usage Viewpoint
12. **Infrastructure** Viewpoint
13. **Infrastructure** Usage Viewpoint
14. Implementation and Deployment Viewpoint
15. **Information Structure** Viewpoint
16. Service Realization Viewpoint
17. Layered Viewpoint
18. Landscape Map Viewpoint

In the viewpoints we find aspects of some other enterprise architecture frameworks (see colors)



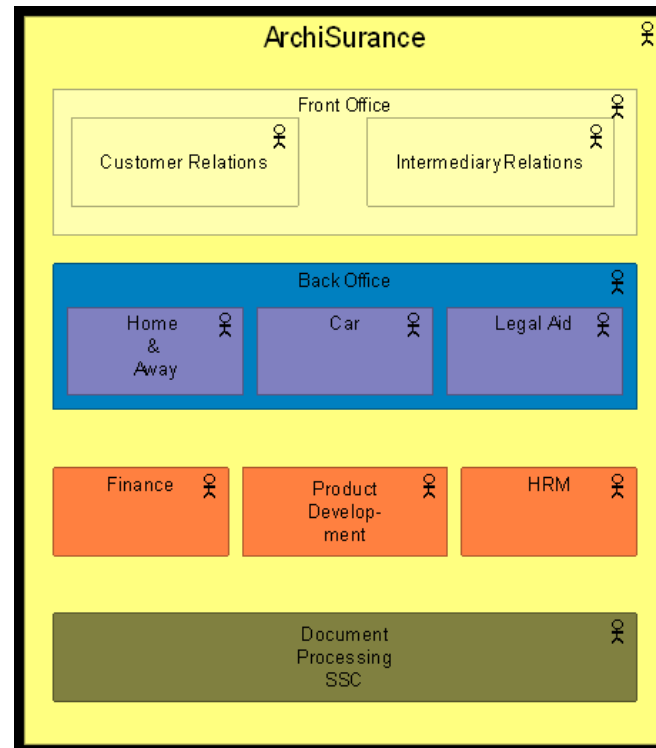
# Example for Viewpoint Models: Introductory Viewpoint

A subset of the full ArchiMate language using a simplified notation. Typically used at the start of a design trajectory, when not everything needs to be detailed or to avoid the impression that the architectural design is already fixed.



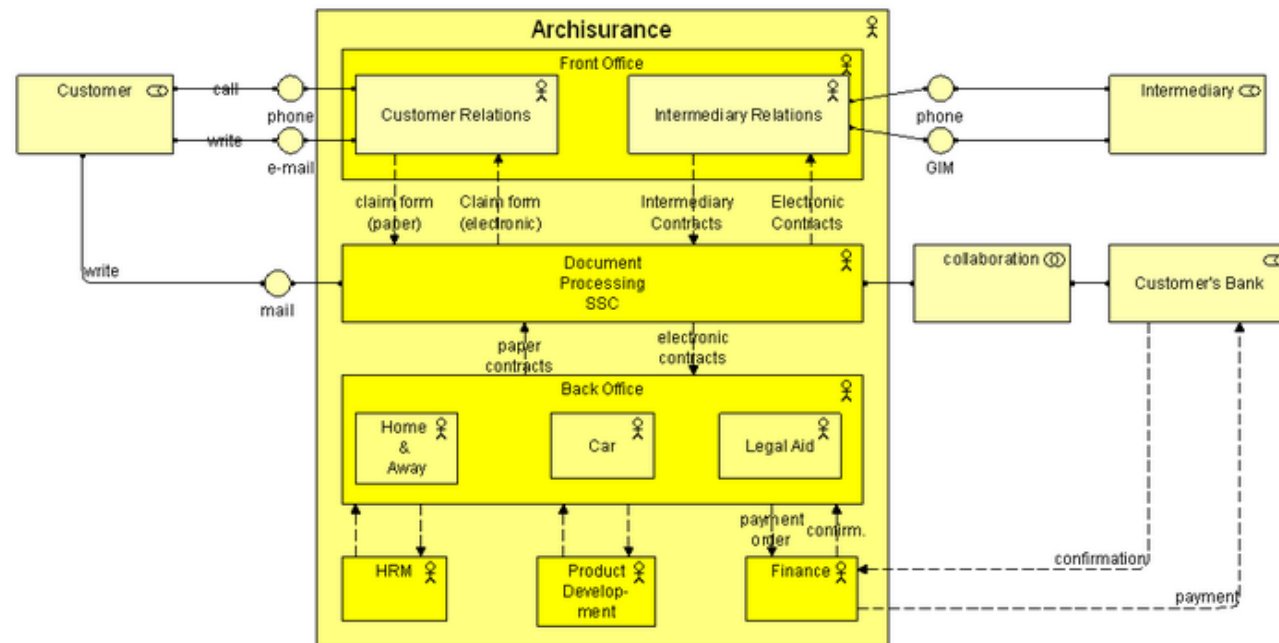
# Example for Viewpoint Models: Organization Viewpoint

- (Internal) organization of a company, a department, a network of companies. Could be modeled as nested diagrams or as organizational charts.
- Useful in identifying competencies, authority, and responsibilities



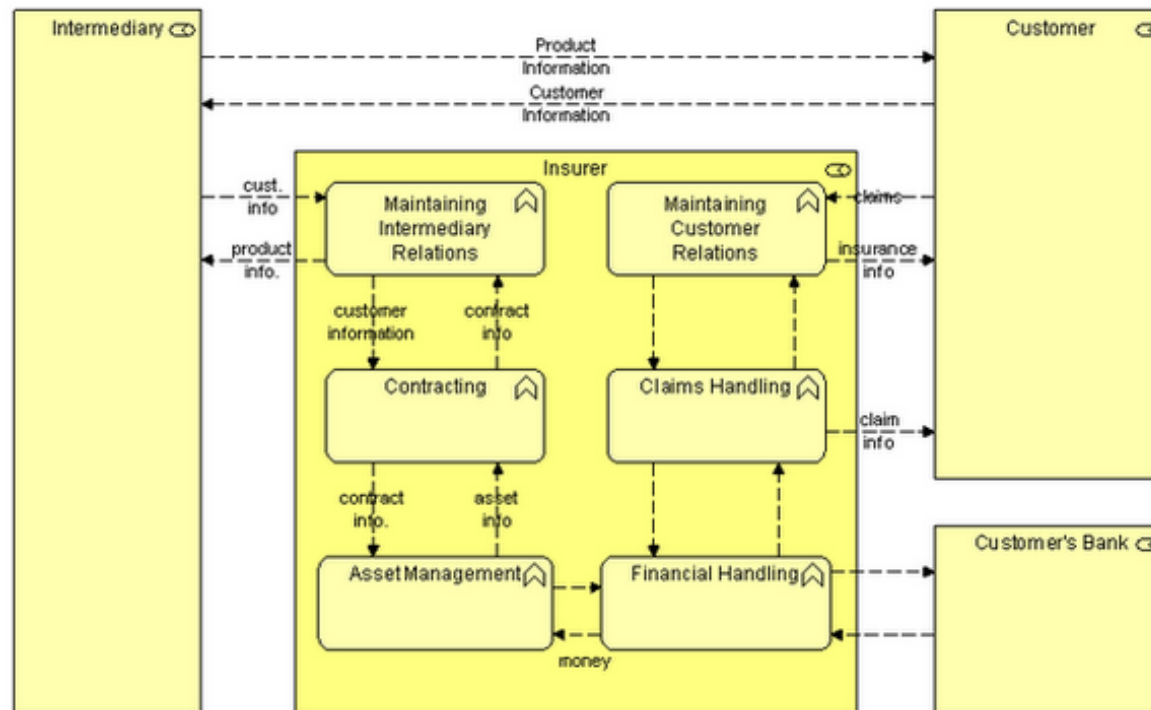
# Example for Viewpoint Models: Actor Co-operation Viewpoint

- Extending the Organization Viewpoint with a focus on the relations of actors with each other and their environment
- Useful in determining external dependencies and collaborations; shows the value chain or network in which the actor operates.
- Can show how a number of co-operating business actors and/or application components together realize a business process



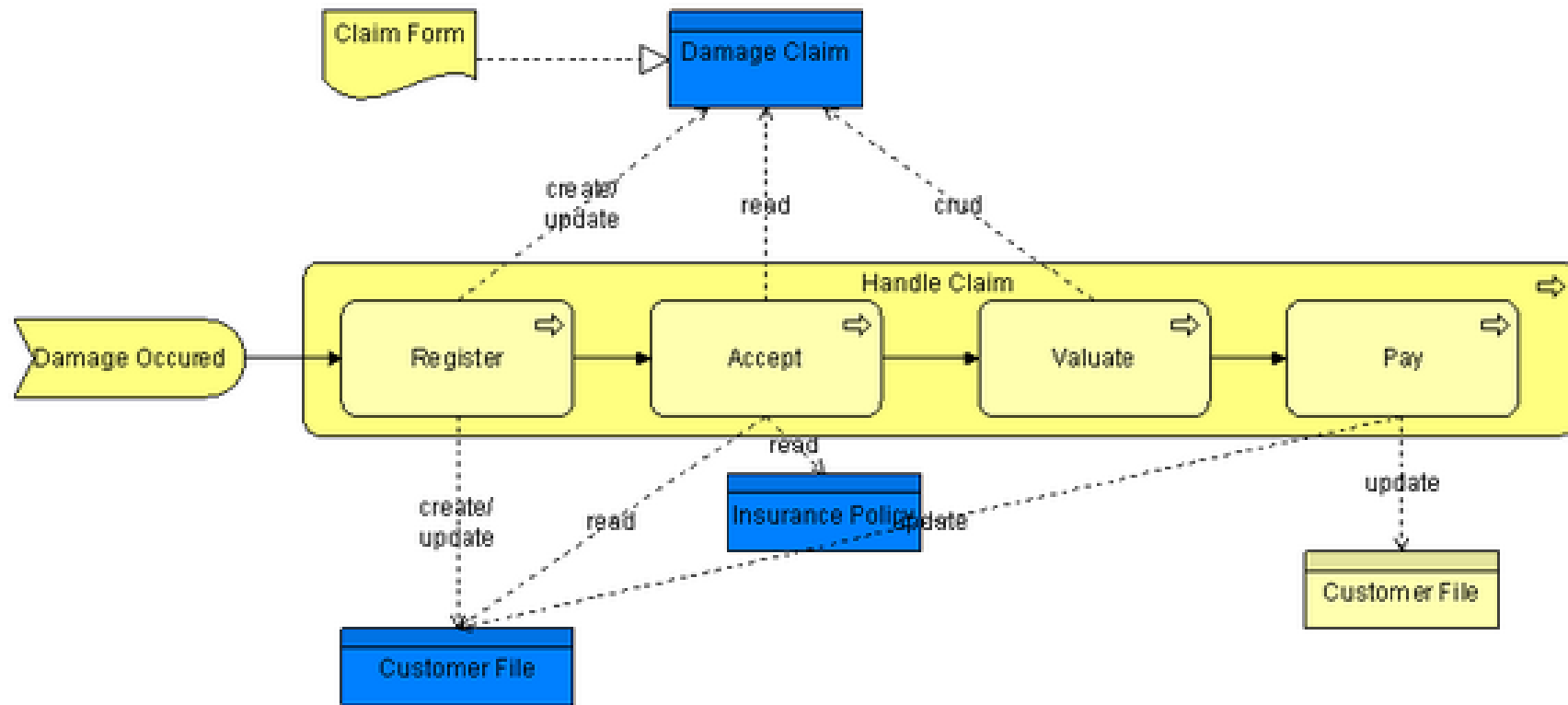
# Example for Viewpoint Models: Business Function Viewpoint

- Shows the main business functions of an organisation and their relations in terms of flow of information, value or goods between them.



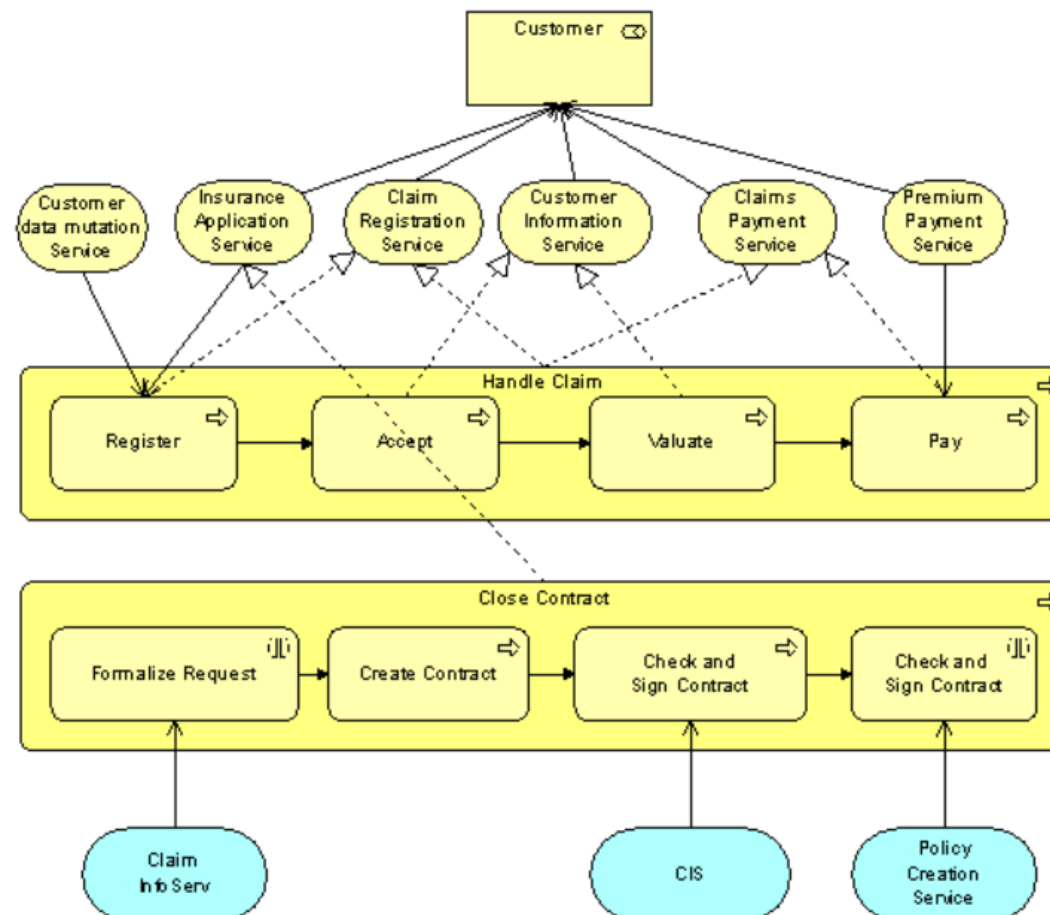
# Example for Viewpoint Models: Business Process Viewpoint

Structure and composition of one or more business processes and directly related concepts like products, roles, and information



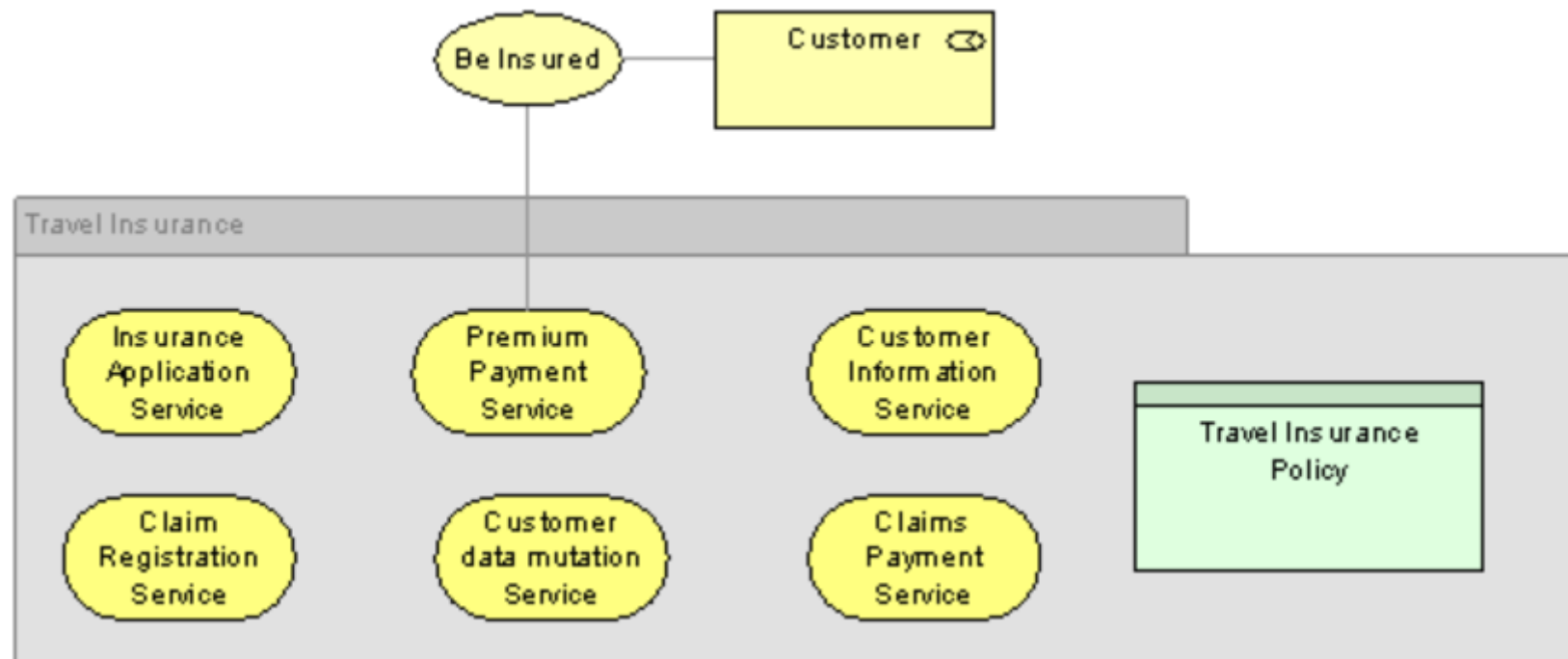
# Example for Viewpoint Models: Business Process Co-operation Viewpoint

Relations of one or more business processes with each other and/or the environment.



# Example for Viewpoint Models: Product Viewpoint

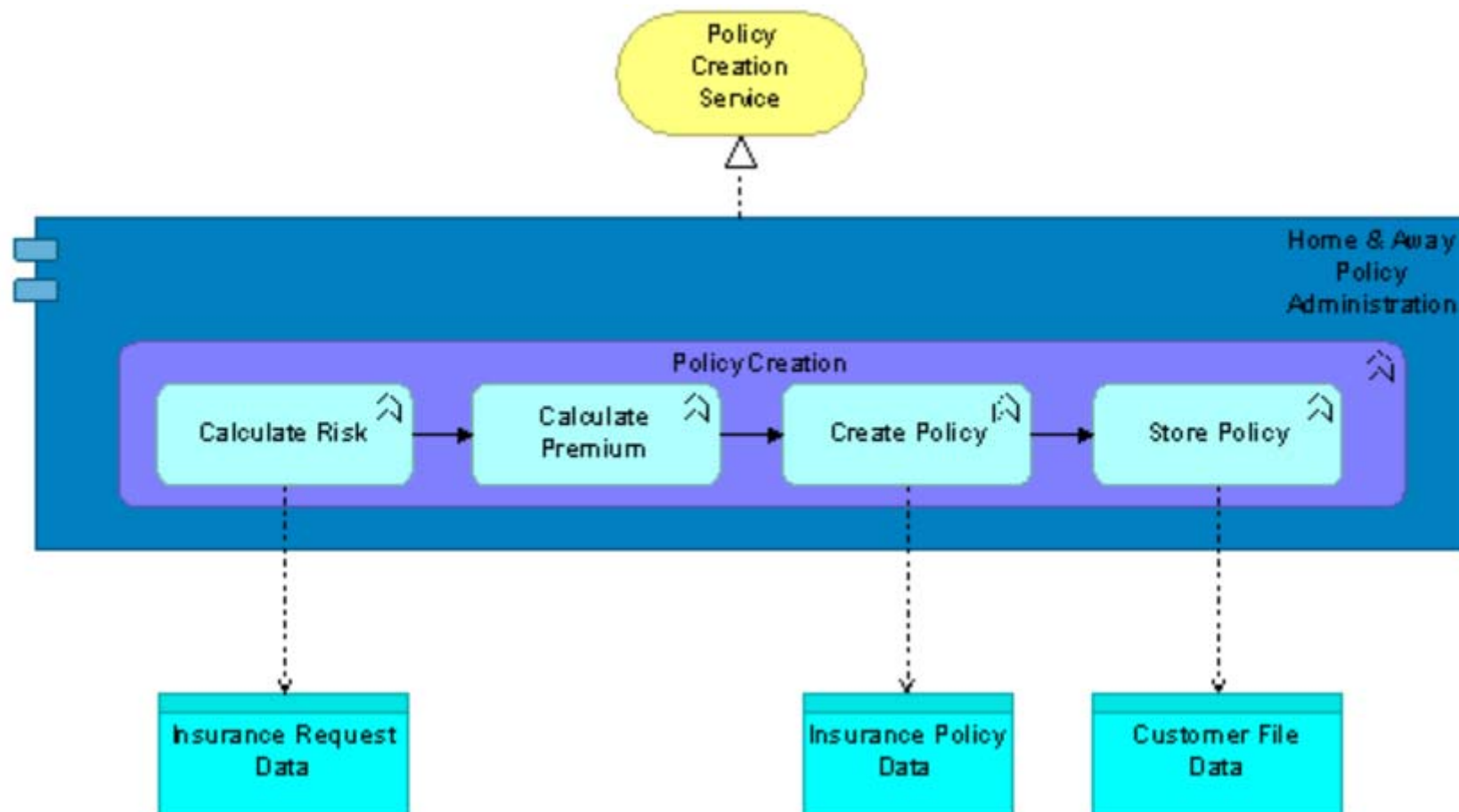
Composition of products, the associated contract(s) or agreements, and the products' value to customers and other external parties..





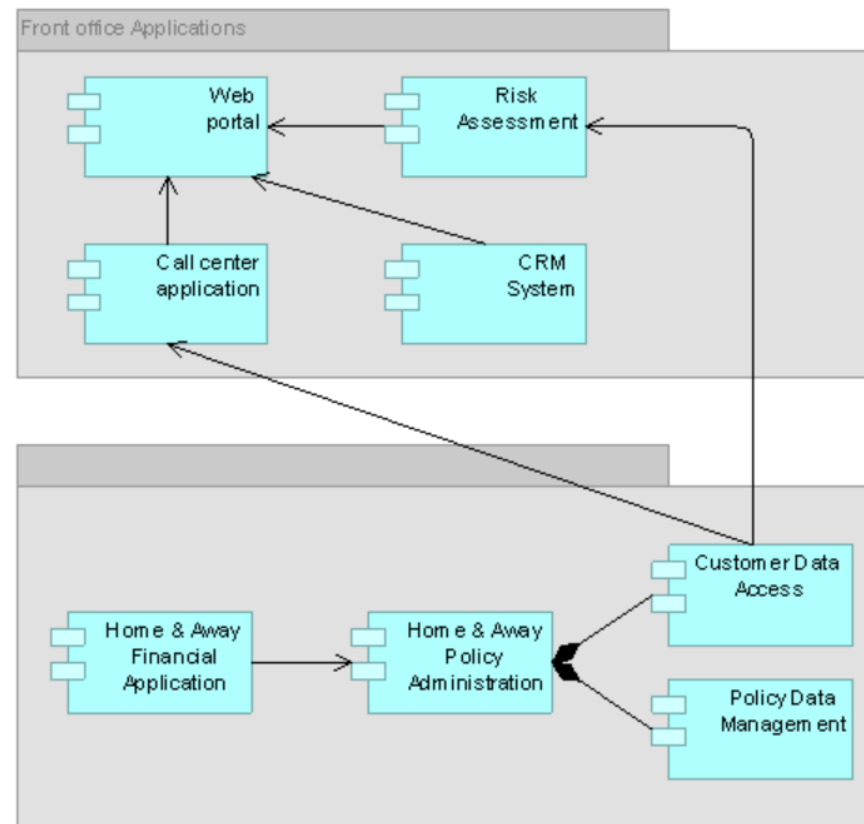
# *Example for Viewpoint Models: Application Behavior Viewpoint*

Internal behavior of an application, e.g. as it realizes one or more services



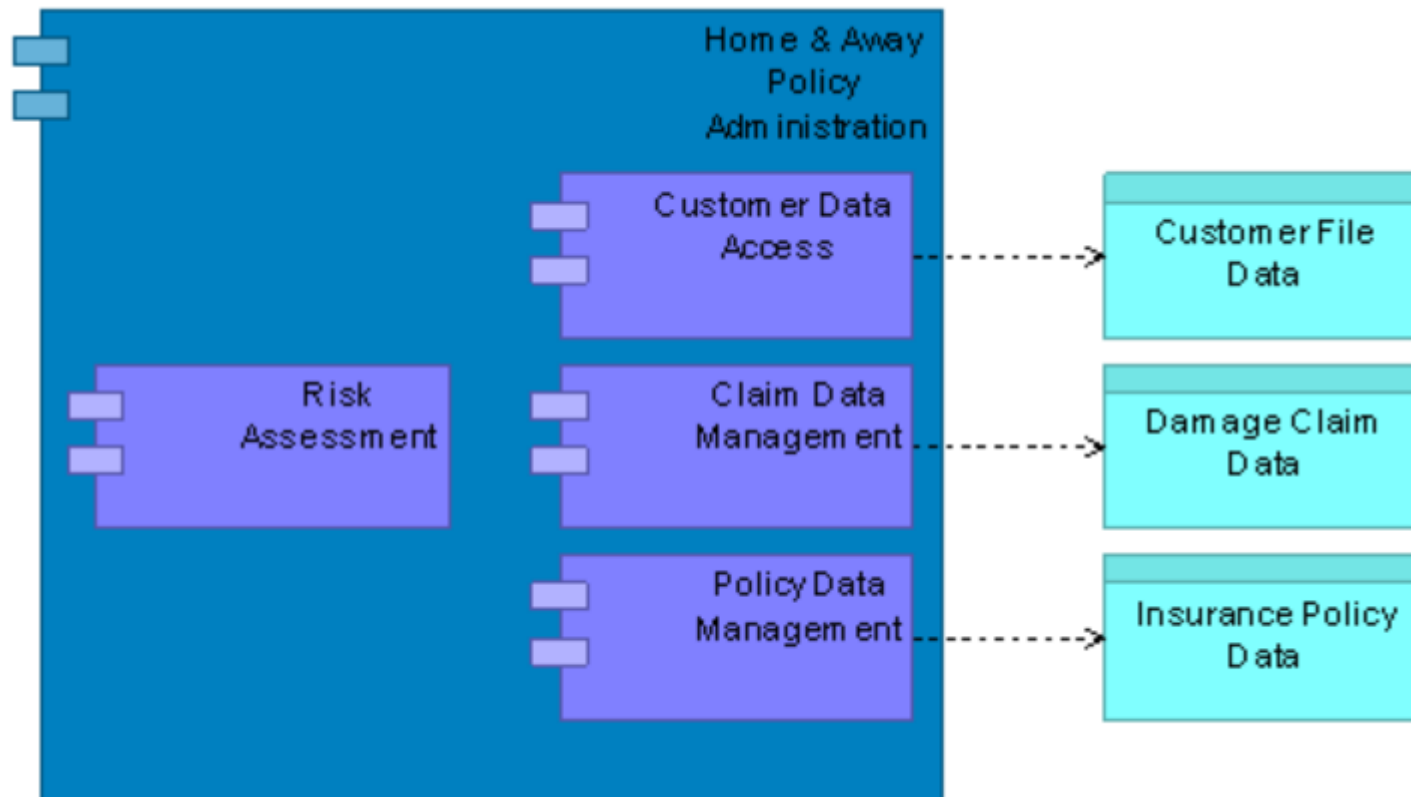
# Example for Viewpoint Models: Application Co-operation Viewpoint

Relations between applications components in terms of the information flows between them, or in terms of the services they offer and use.



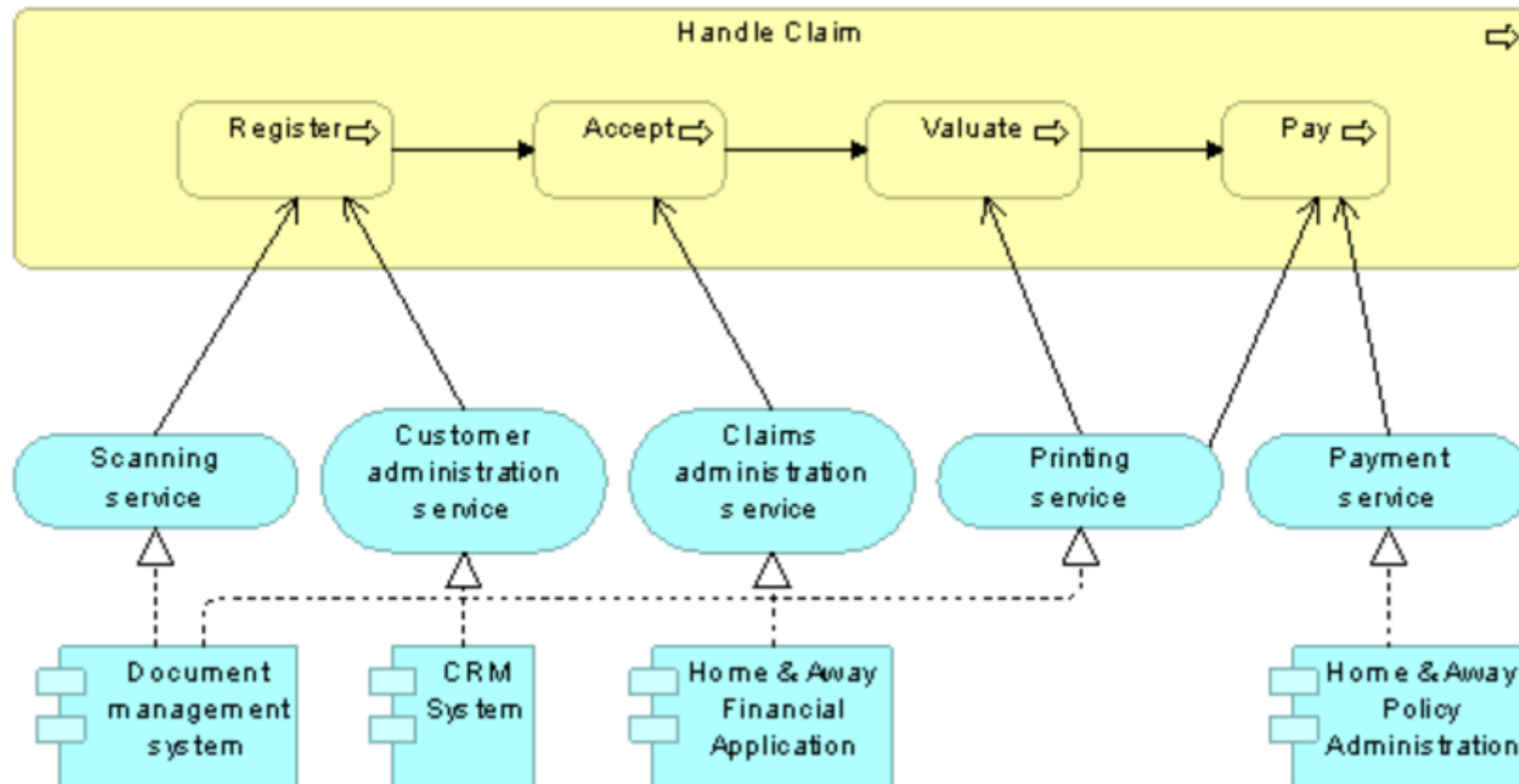
# Example for Viewpoint Models: Application Structure Viewpoint

Structure of one or more applications or components. This viewpoint is useful in designing or understanding the main structure of applications or components and the associated data



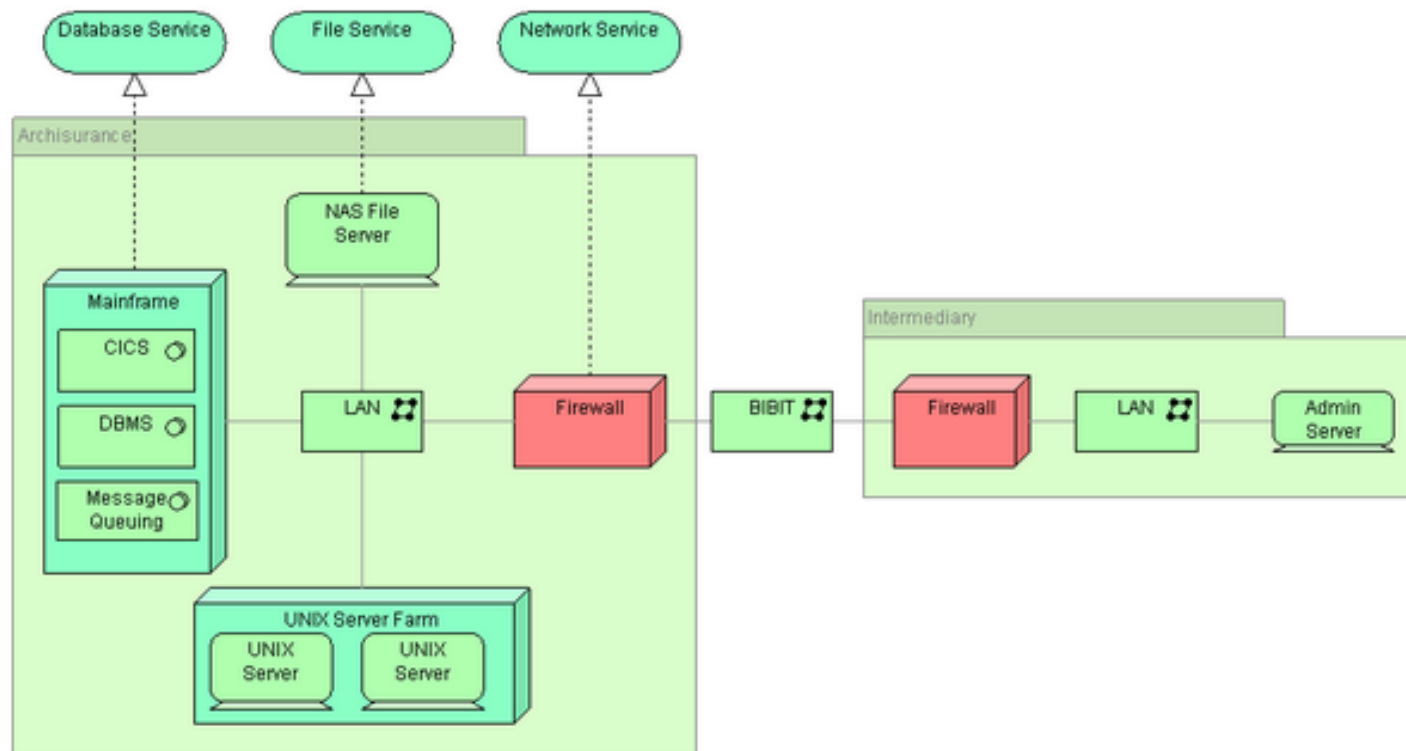
# Example for Viewpoint Models: Application Usage Viewpoint

Describes how applications are used to support one or more business processes, and how they are used by other applications



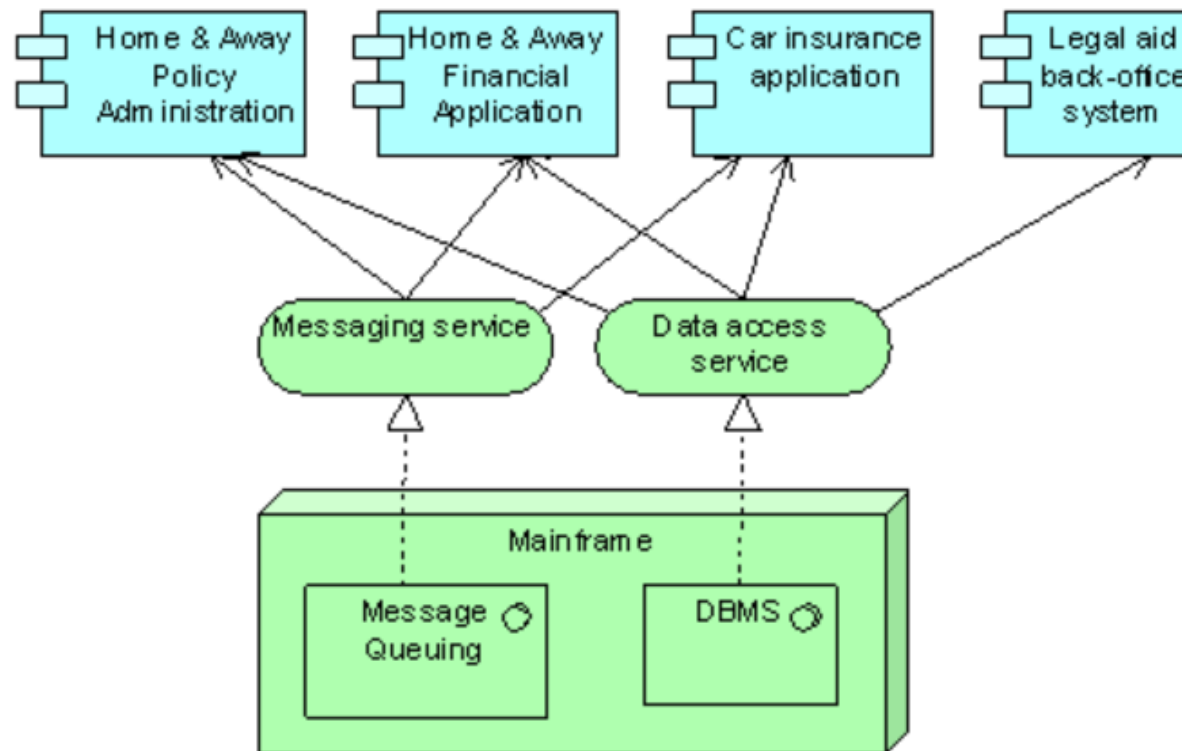
# Example for Viewpoint Models: Infrastructure Viewpoint

Software and hardware infrastructure elements supporting the application layer, such as physical devices, networks, or system software (e.g., operating systems, databases, and middleware).



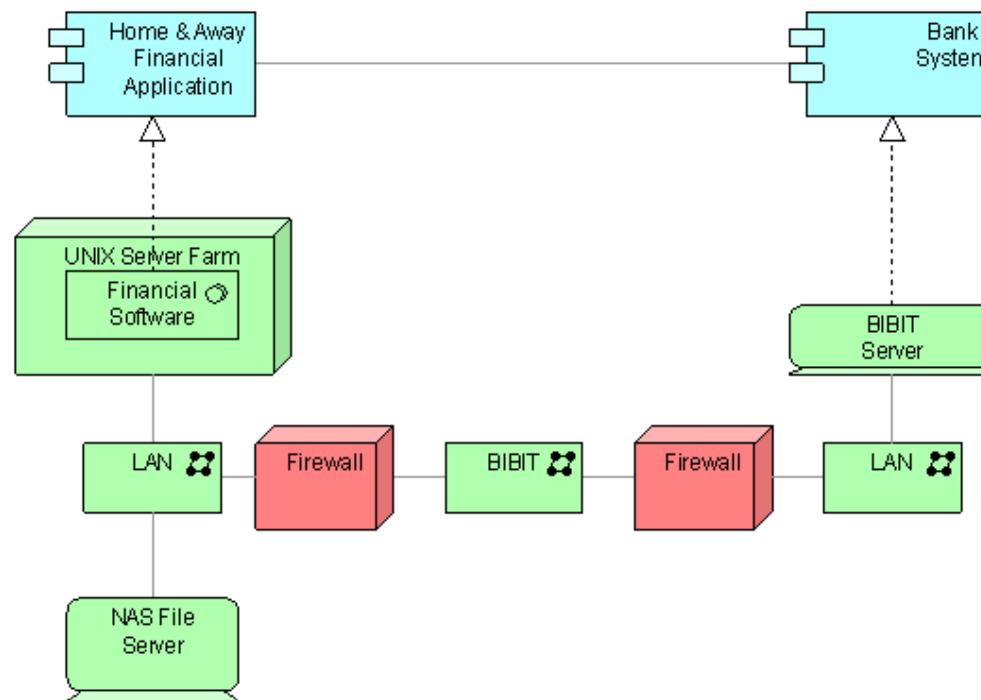
## *Example for Viewpoint Models: Infrastructure Usage Viewpoint*

How applications are supported by the software and hardware infrastructure: the infrastructure services are delivered by the devices; system software and networks are provided to the applications



# Example for Viewpoint Models: Implementation and Deployment Viewpoint

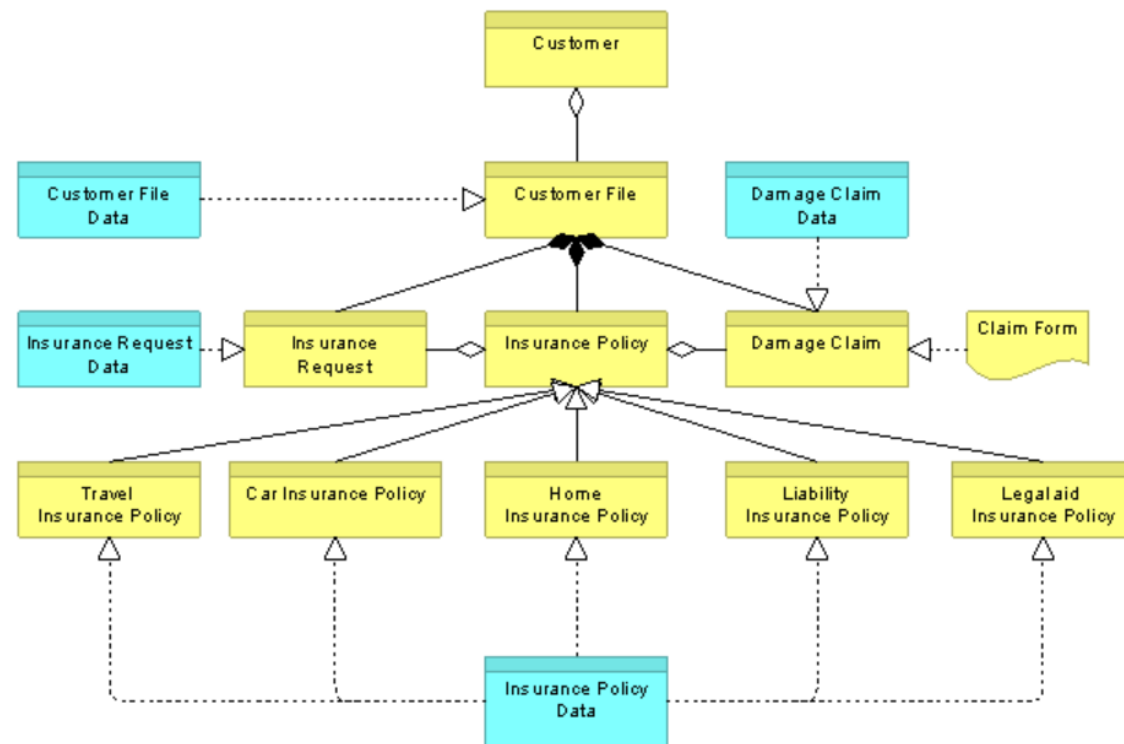
How one or more applications are realized on the infrastructure. This comprises the mapping of (logical) applications onto (physical) artifacts, such as Enterprise Java Beans, and the mapping of the information used by these applications onto the underlying storage infrastructure; e.g., database tables or other files.





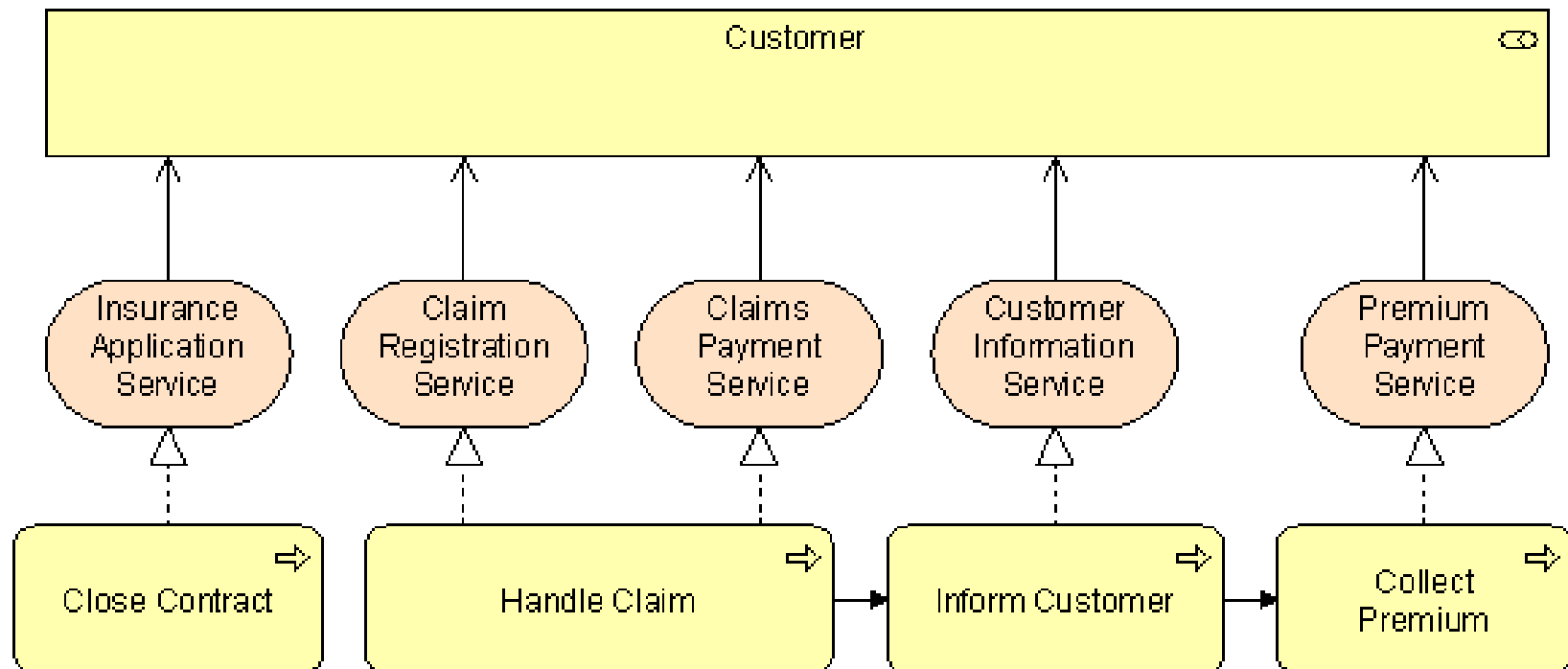
# Example for Viewpoint Models: Information Structure Viewpoint

It shows the structure of the information used in the enterprise or in a specific business process or application, in terms of data types or (object-oriented) class structures. It is comparable to the traditional information models created in the development of almost any information system.



# Example for Viewpoint Models: Service Realization Viewpoint

How one or more business services are realized by the underlying processes (and sometimes by application components). Thus, it forms the bridge between the business products viewpoint and the business process view.

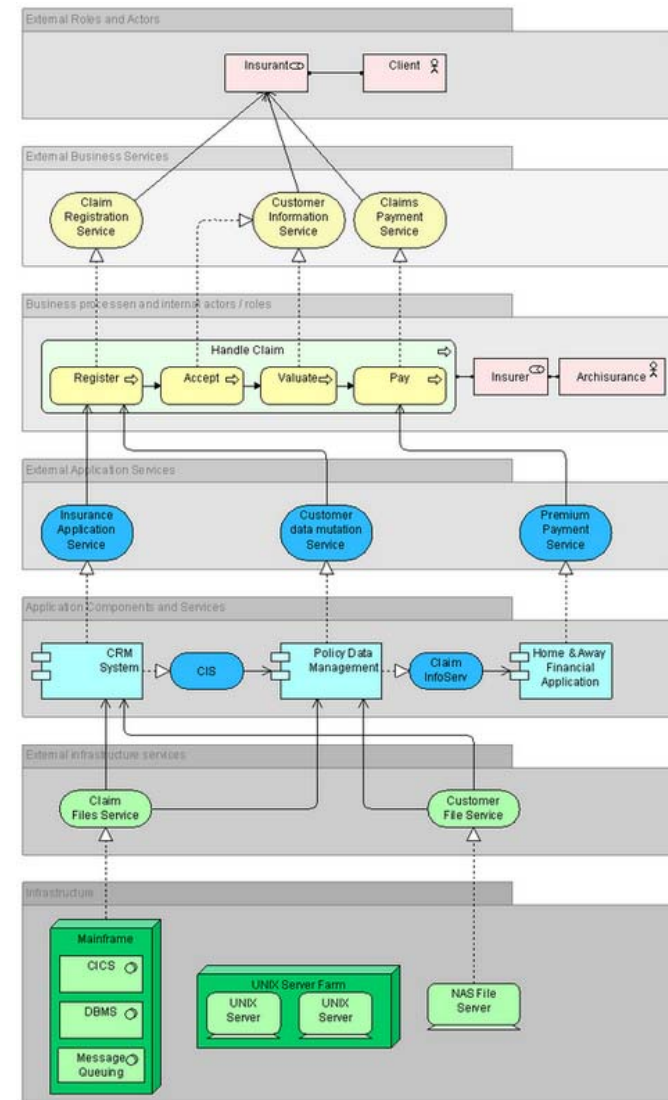


# Example for Viewpoint Models: Layered Viewpoint

The Layered viewpoint pictures several layers and aspects of an enterprise architecture in one diagram.

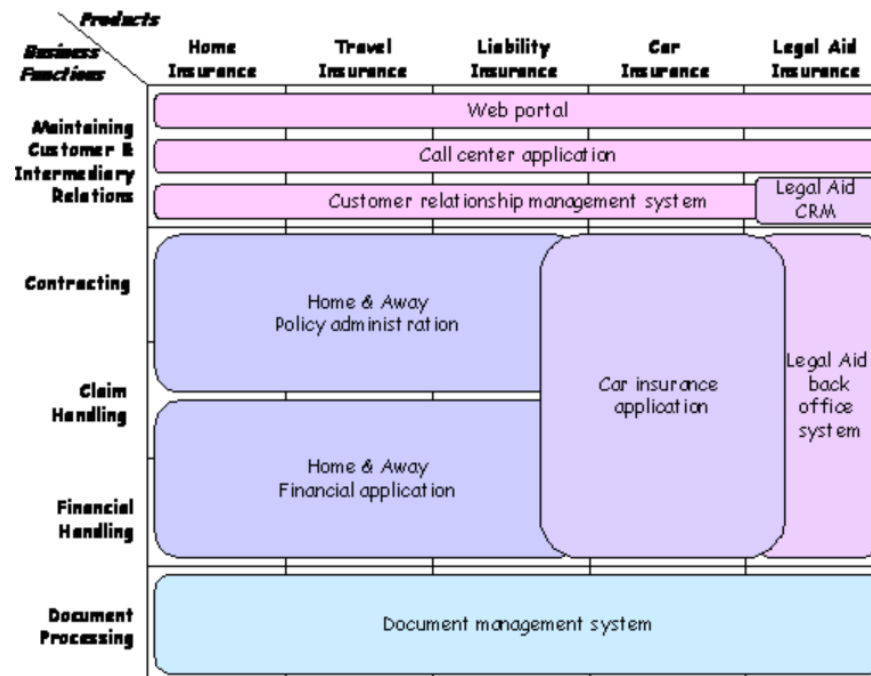
The layers are the result of the use of the “grouping” relation for a natural partitioning of the entire set of objects and relations that belong to a model.

Each dedicated layer exposes, by means of the “realization” relation a layer of services, which are further on “used by” the next dedicated layer.



# Example for Viewpoint Models: Service Realization Viewpoint

A landscape map is a matrix that represents a three-dimensional coordinate system that represents architectural relations. In practice, often dimensions are chosen from different architectural domains; for instance, business functions, application components, and products. A landscape map uses the ArchiMate concepts, but not the standard *notation* of these concepts..



# Classification of Enterprise Architecture Viewpoints

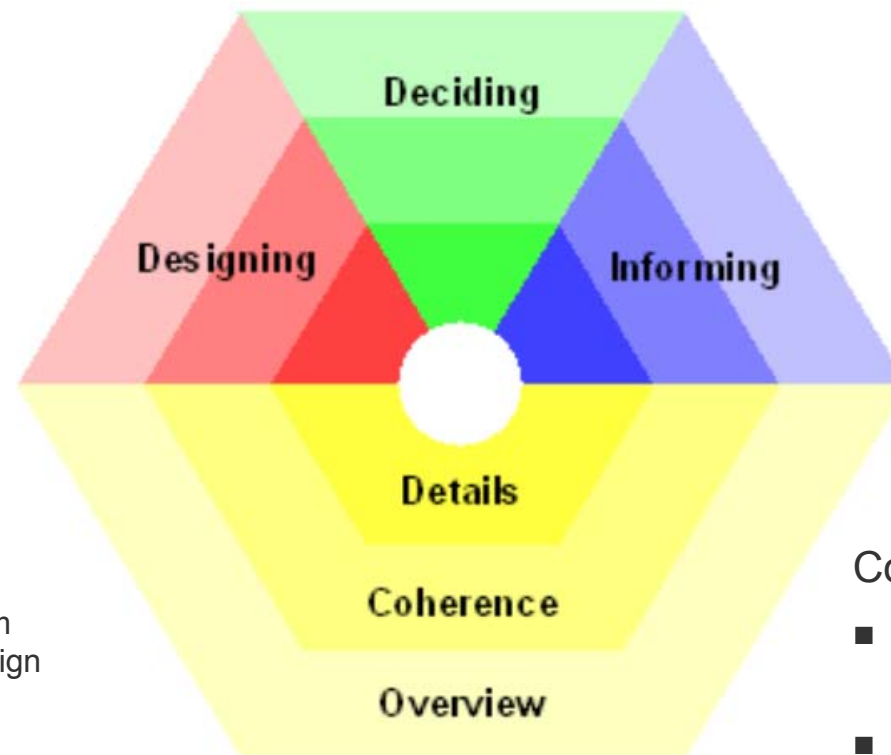
## Purpose Dimension

- *Designing*
  - ◆ support design process from initial sketch to detailed design
  - ◆ Examples: diagrams like in UML
- *Deciding:*
  - ◆ offering insight into cross-domain architecture relations
  - ◆ Examples: cross-reference tables, landscape maps, lists, reports
- *Informing:*
  - ◆ achieve understanding, obtain commitment, convince
  - ◆ Examples: illustrations, animations

## Content Dimension

- *Details:*
  - ◆ one layer and one aspect in ArchiMate
  - ◆ Examples: BPMN process diagram, UML class diagram
- *Coherence:*
  - ◆ multiple layers or multiple aspects
  - ◆ focus on architecture relations between layers or aspects
  - ◆ Examples: process-uses-system oder application-uses-object
- *Overview:*
  - ◆ both multiple layers and aspects
  - ◆ stakeholders: enterprise architects and decision makers like CEO, CIO

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