



Building strong organizations

ArchiMate Tutorial

The open standard language for modelling and
visualizing enterprise architecture

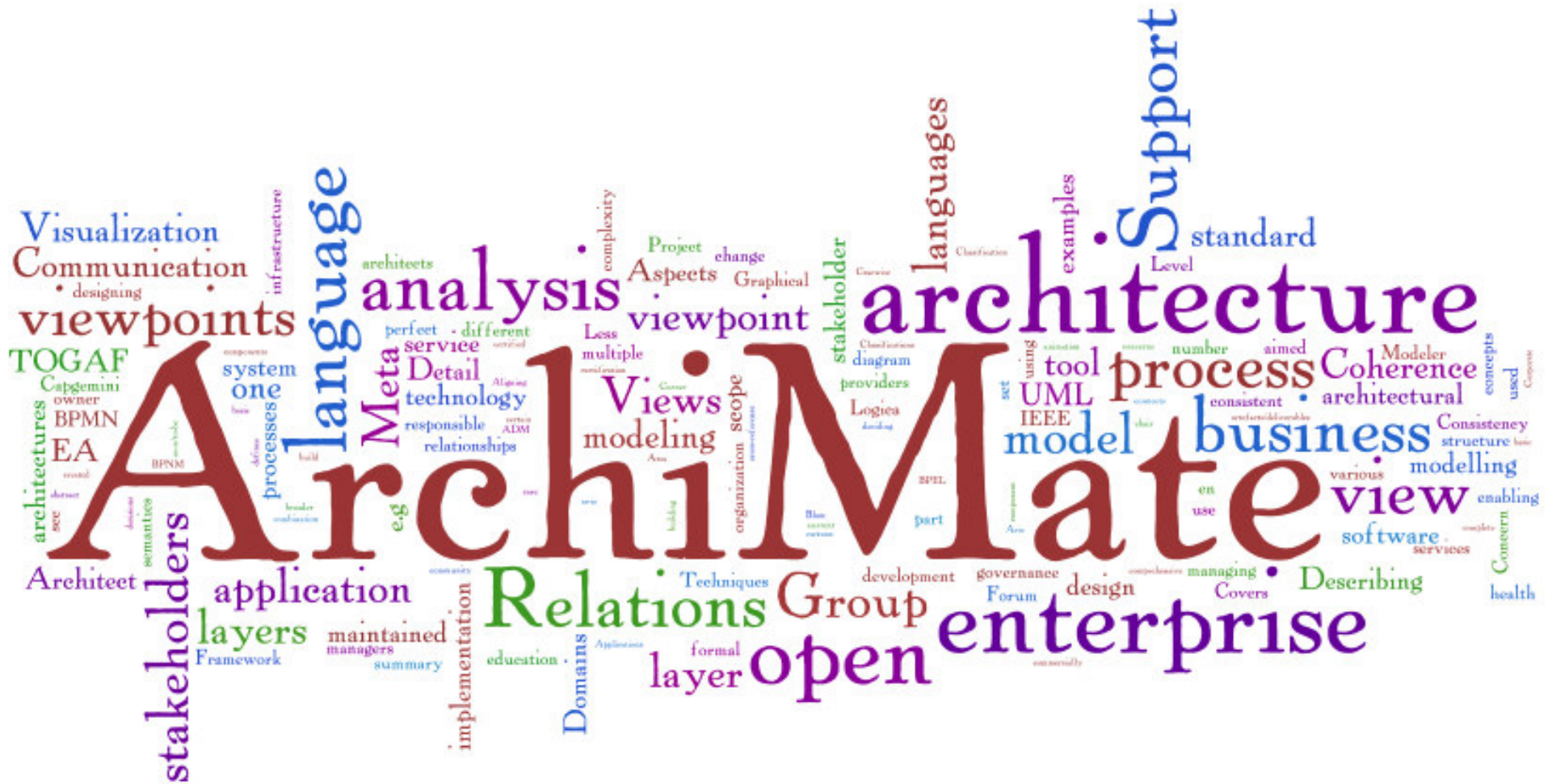


Remco Blom, BiZZdesign

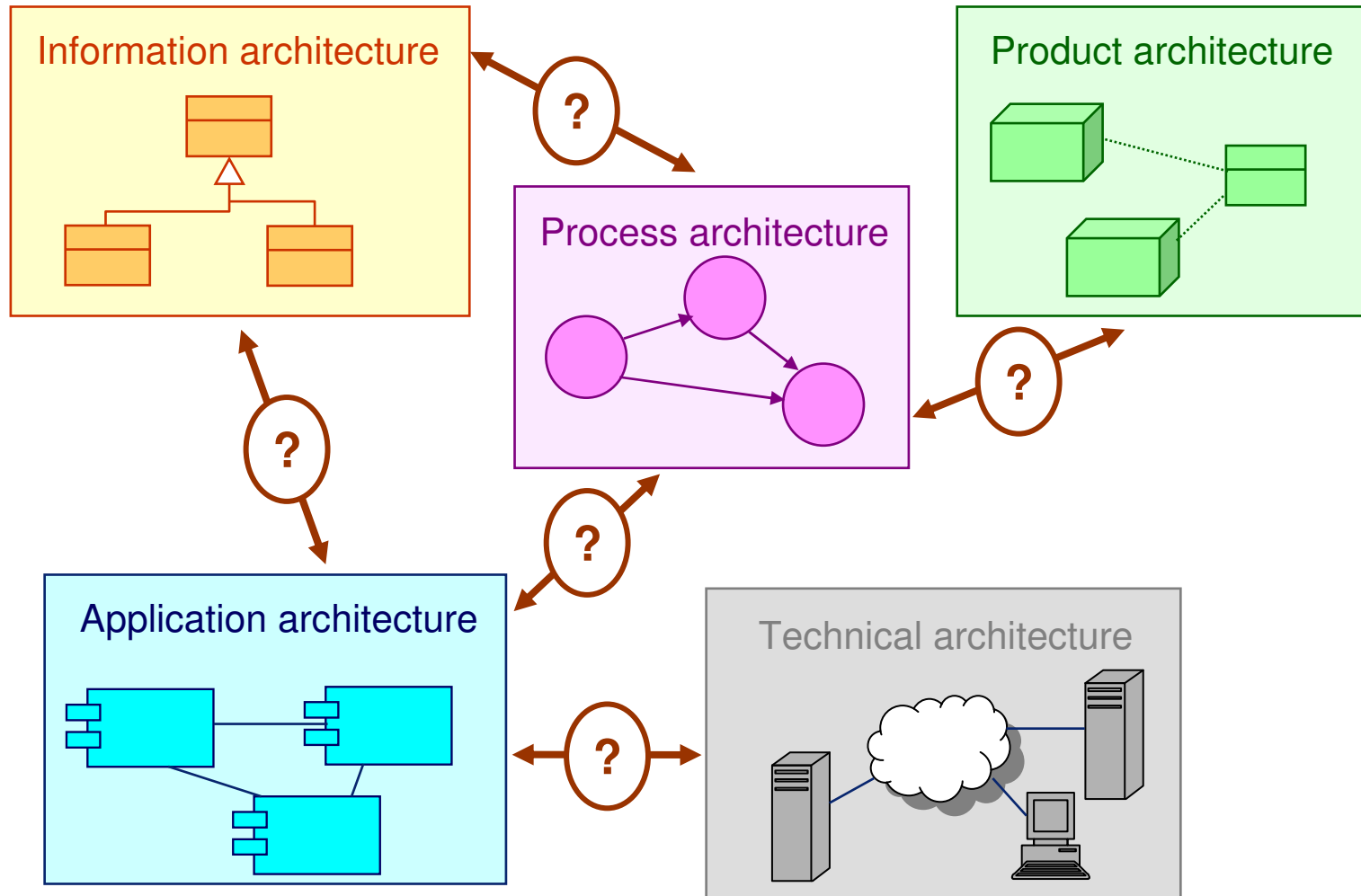


BiZZdesign

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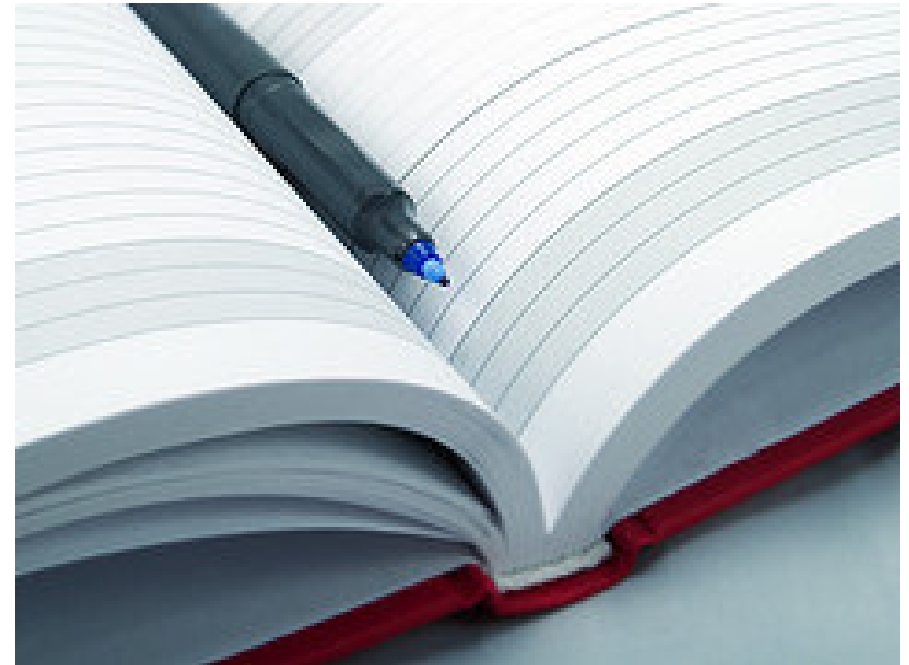


▶ Do you recognize this?



▶ Proposed schedule

- ▶ Introduction
- ▶ Enterprise Architecture
- ▶ ArchiMate
 - ▶ Motivation and scope
 - ▶ Framework
 - ▶ Examples
 - ▶ Meta model
 - ▶ Views and viewpoints
 - ▶ Relations with other languages
 - ▶ Support for ArchiMate
- ▶ Summary



▶ Enterprise Architecture

- ▶ Some basic concepts...



▶ Enterprise Architecture



ISO/IEC 42010:

Architecture: the structure of a system in terms of

- ▶ its *components*,
- ▶ their *externally visible properties*,
- ▶ their *relations*,
- ▶ and the underlying *principles*

“Structure with a vision”

▶ Why Enterprise Architecture?

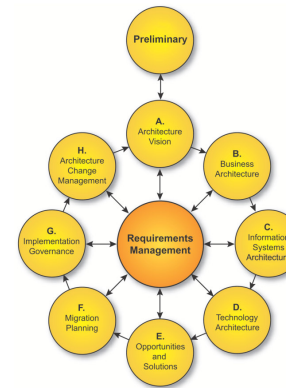
- ▶ Managing change and complexity:
 - ▶ Aligning business and IT
 - ▶ Outsourcing
 - ▶ Impact analysis
 - ▶ Project support (project start architectures)
 - ▶ Portfolio management
 - ▶ Communication with stakeholders
 - ▶ ...
- ▶ Obtaining insight in current situation (as-is)
- ▶ So enterprise architecture as a tool
 - ▶ for communication
 - ▶ for governance
 - ▶ for innovation



▶ Views on Enterprise Architecture?

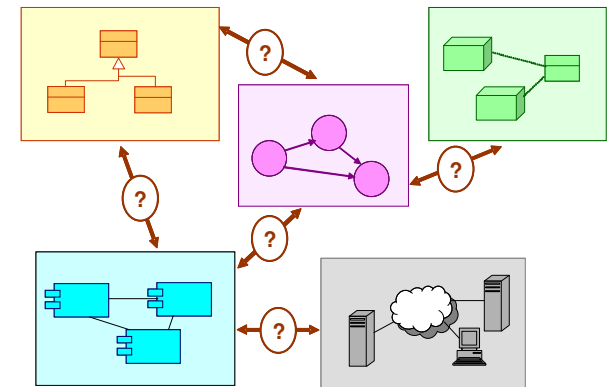
▶ *A process*

- ▶ Way of working
- ▶ Aimed at the development and use of enterprise architectures within an enterprise
- ▶ With people and resources



▶ *A product*

- ▶ A design that shows the coherence between products, processes, organisation, information supply and infrastructure, based on a vision and certain explicit starting points, principles and preferences
- ▶ With the objective of *steering changes*



▶ Important notions (IEEE 1471)

- ▶ A *stakeholder* is a person or organisation with a certain interest in (part of) an architecture
- ▶ A *view* is a representation of a system from the perspective of a set of concerns of one or more stakeholders. A view is what you see.
- ▶ A *viewpoint* is where you are looking from. It defines how to build a view, e.g. by means of a template.
- ▶ Different stakeholders
 - ▶ Have different interests and use different concepts
 - ▶ Have different views
 - ▶ Have different viewpoints
 - ▶ On the basis of one consistent architectural model

▶ Example viewpoint en view

Example 1

- ▶ Stakeholder: city council
- ▶ Concern: development plan
- ▶ Viewpoint: photo of district from the air
- ▶ View: Aerial

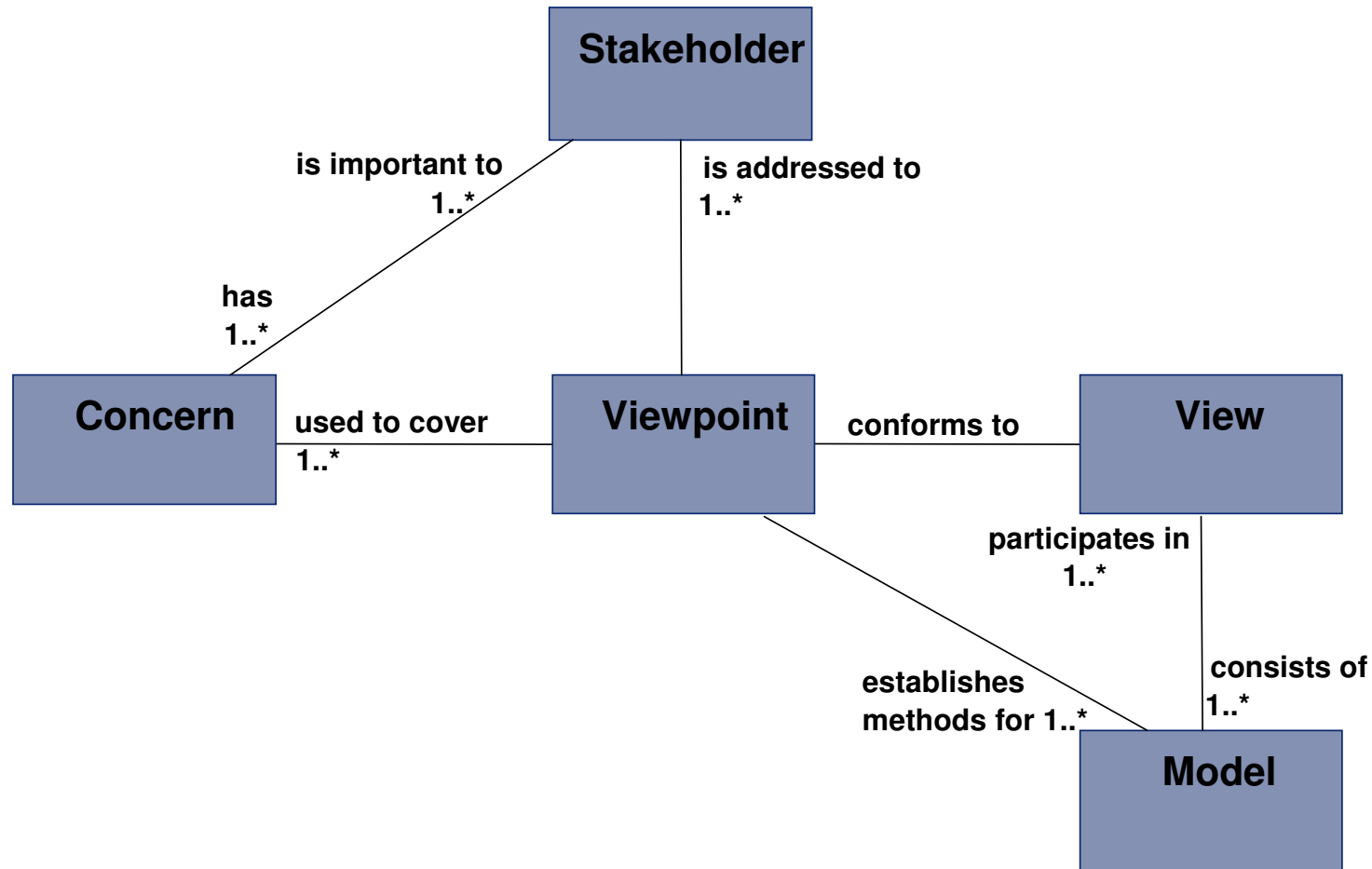


Example 2

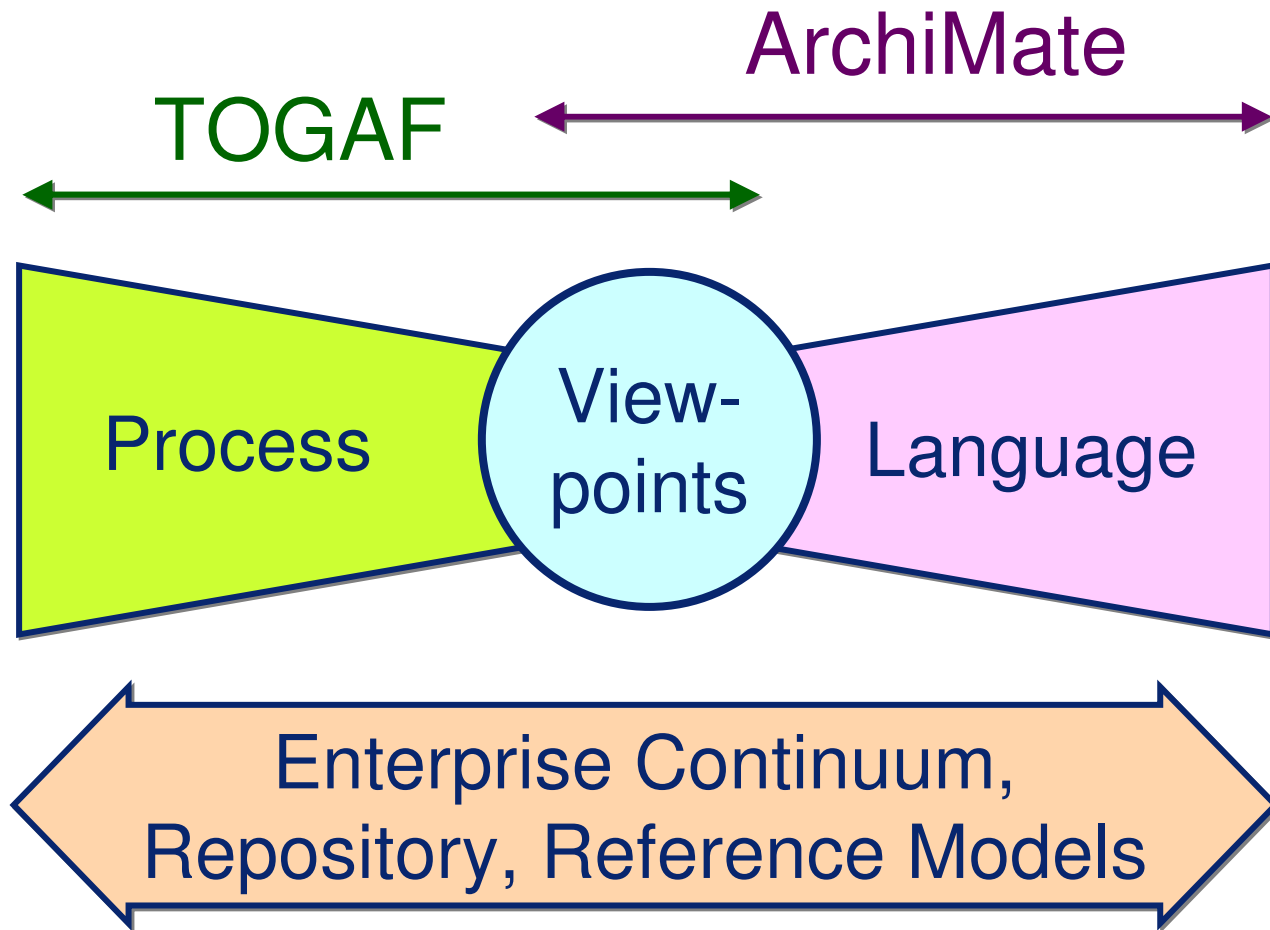
- ▶ Stakeholder: house owner
- ▶ Concern: building permit
- ▶ Viewpoint: Corner of the street, scope is one house
- ▶ View: Ground photo



▶ IEEE 1471 (summary)

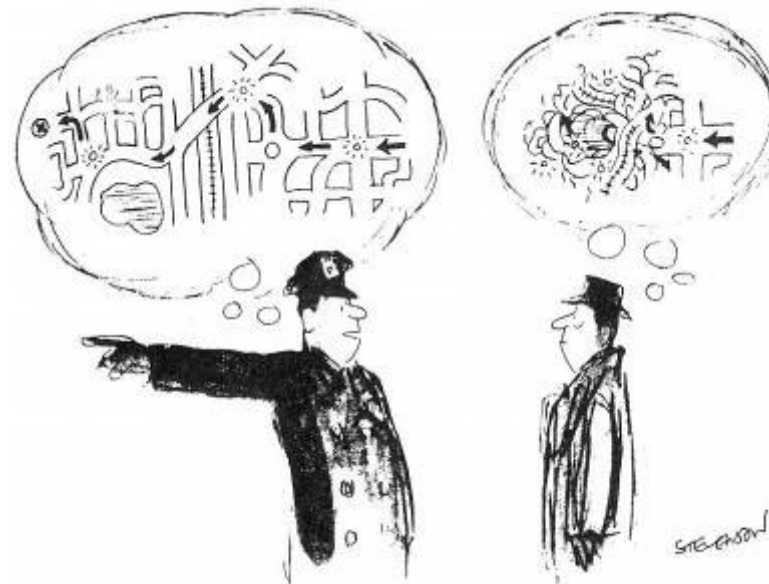


▶ Ingredients of an EA Approach



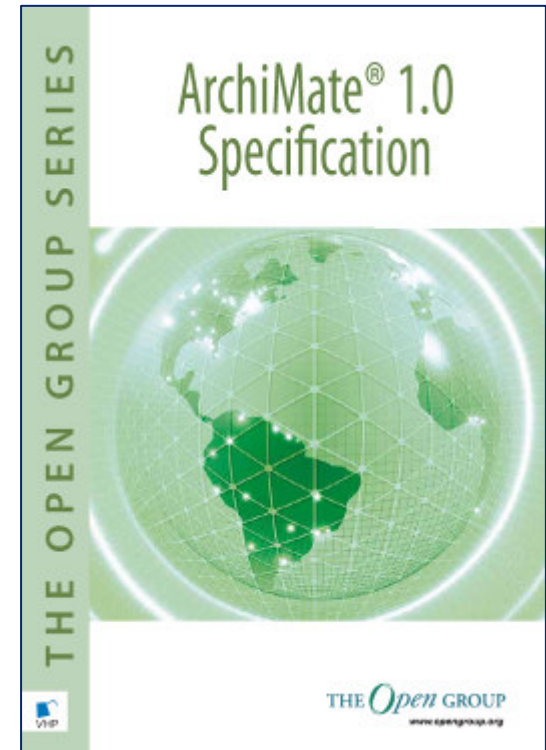
▶ Why one language?

- ▶ Communication
- ▶ No ambiguity
- ▶ Coherence
- ▶ Consistency
- ▶ Visualization
- ▶ Analysis
- ▶ ...

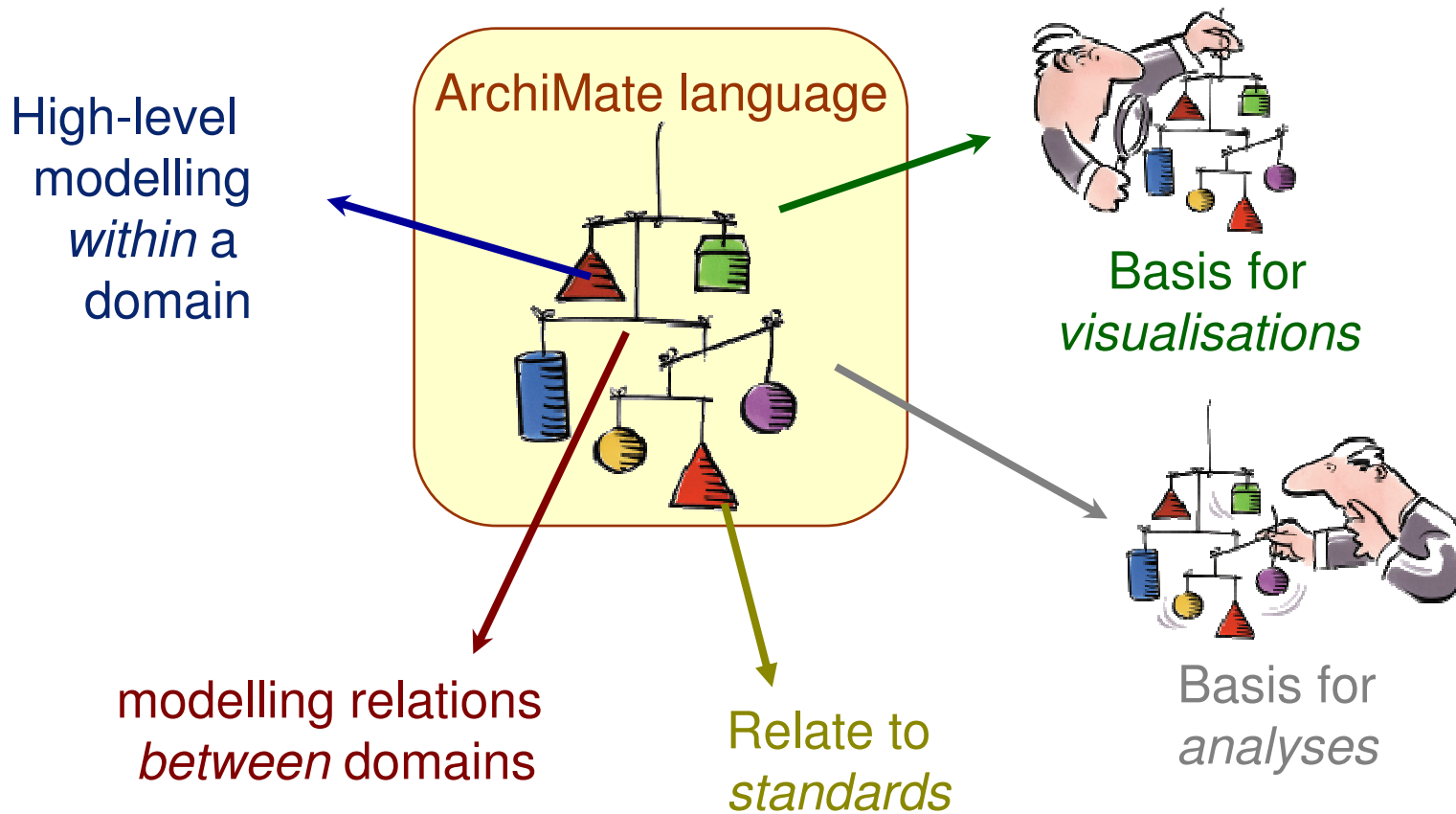


▶ ArchiMate

- ▶ *A language* for describing architectures
- ▶ Covers business, application and technology layers
 - ▶ With relations between these layers
- ▶ Graphical language with formal semantics, enabling analysis and tool support
- ▶ Techniques for *visualization* and *analysis*, aimed at various stakeholders
- ▶ Open standard maintained by The Open Group
- ▶ See www.opengroup.org/archimate or www.archimate.org

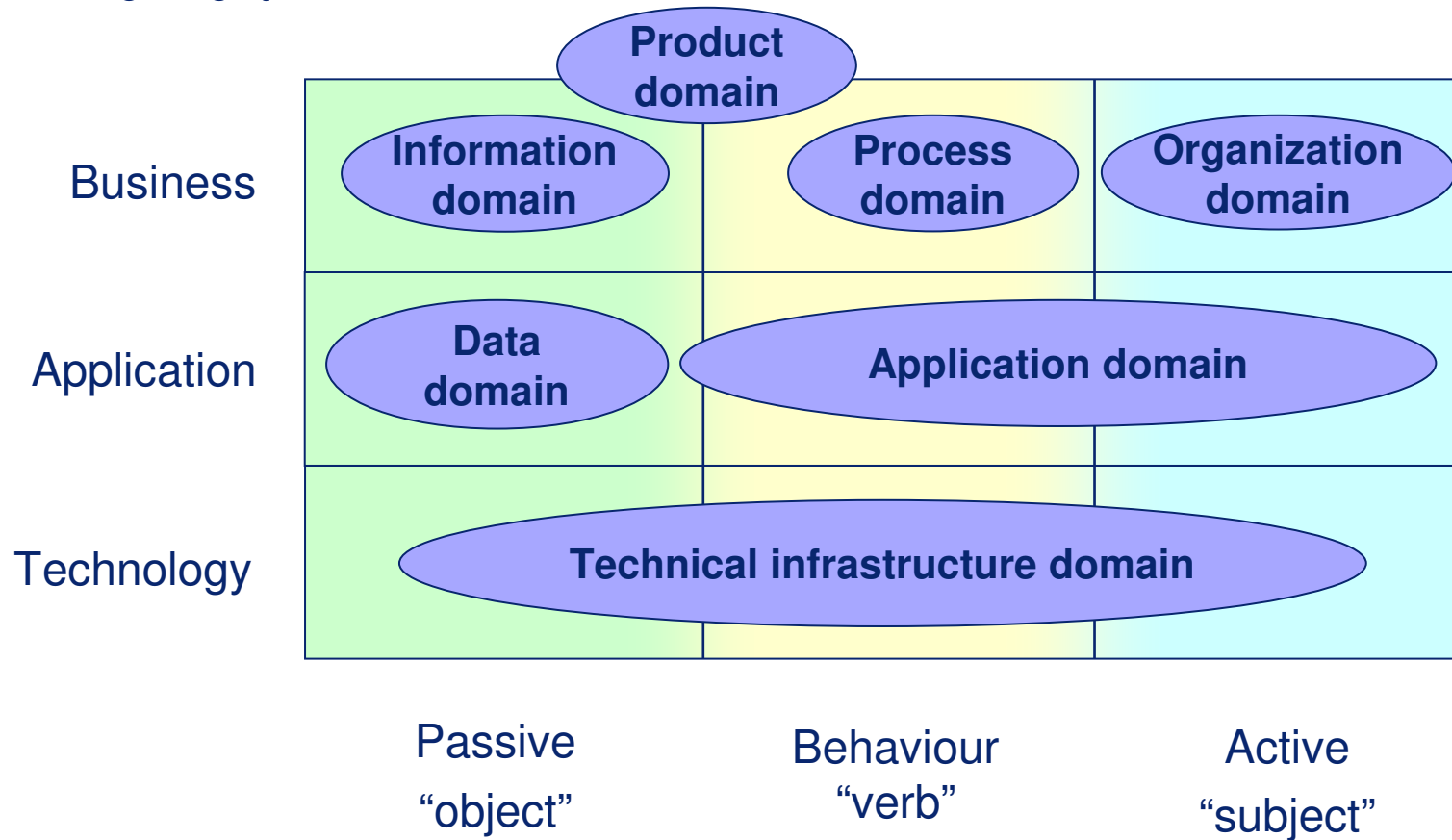


▶ The ArchiMate Language

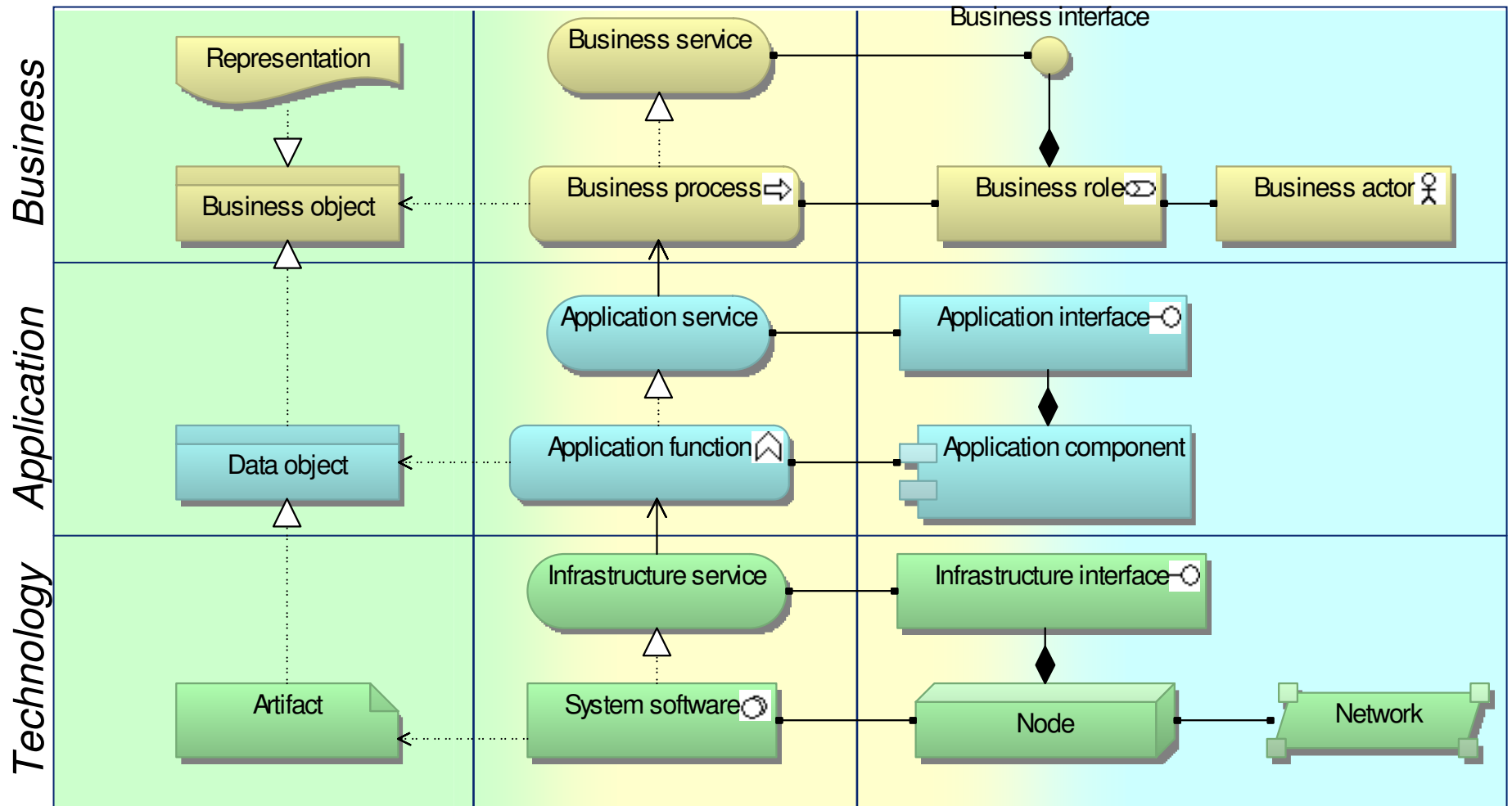


► Layers, Aspects, and Domains

Environment

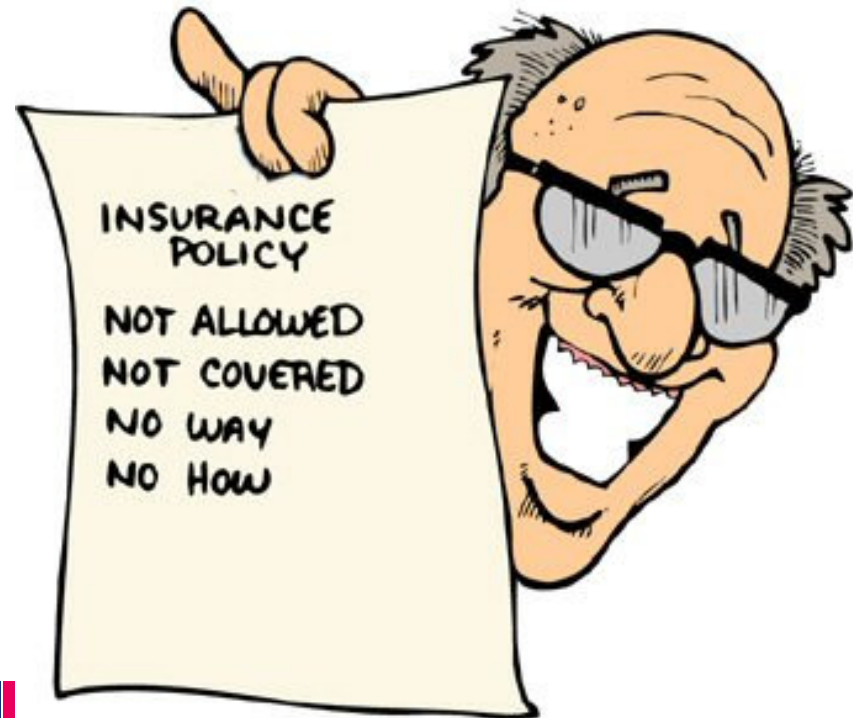


▶ Language summary

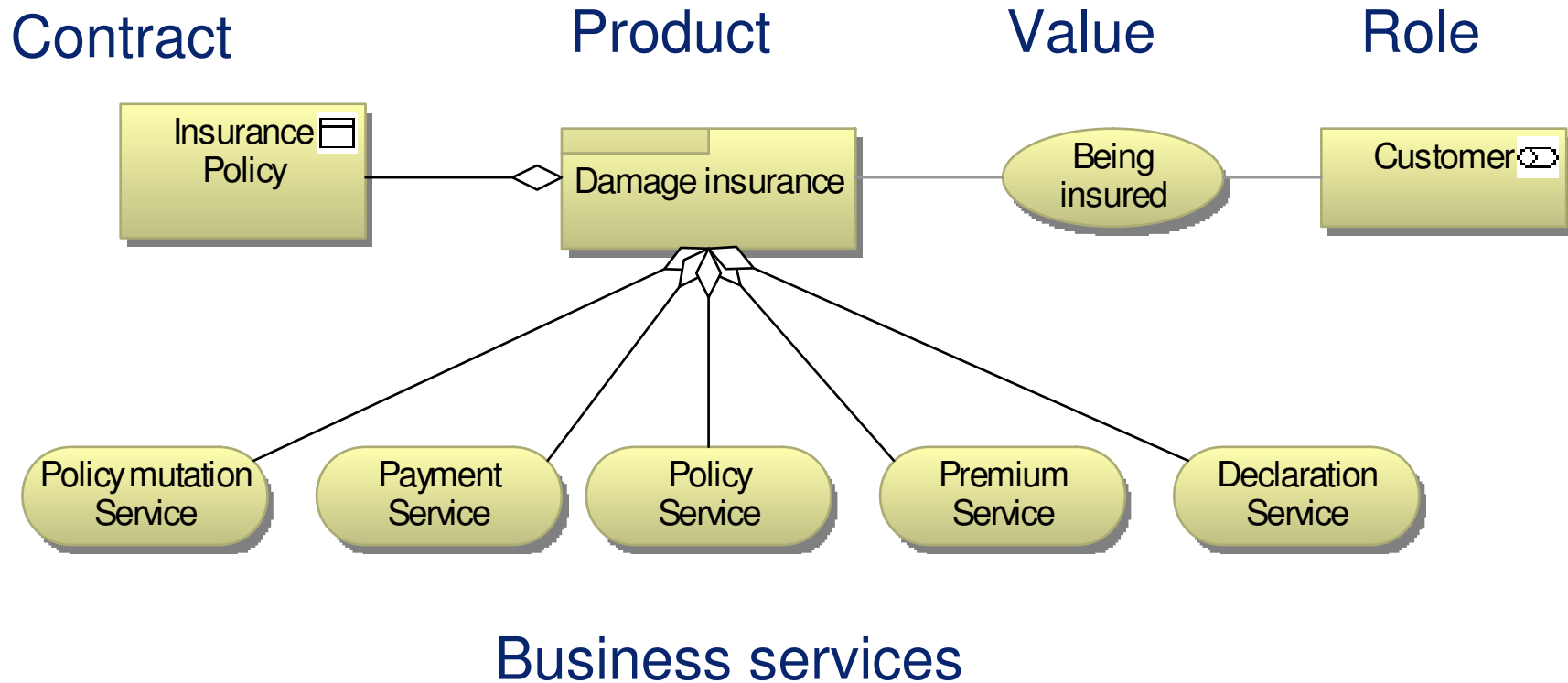


Some examples of the ArchiMate language for “educational purposes”

Examples created using BiZZdesign Architect

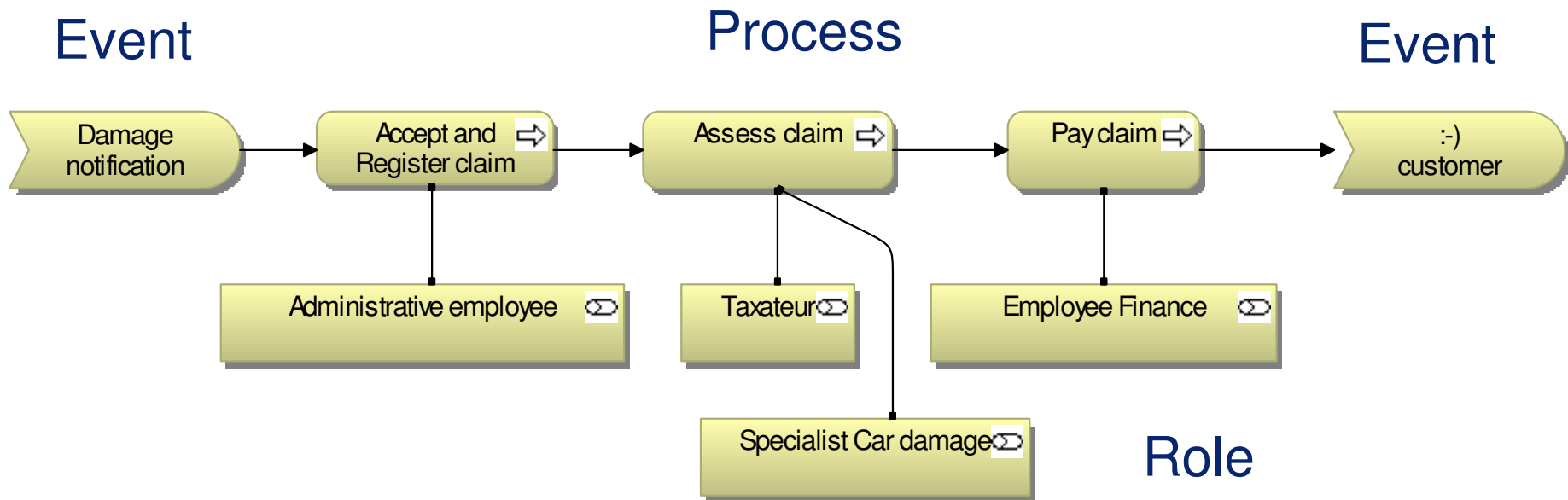


▶ Products and services



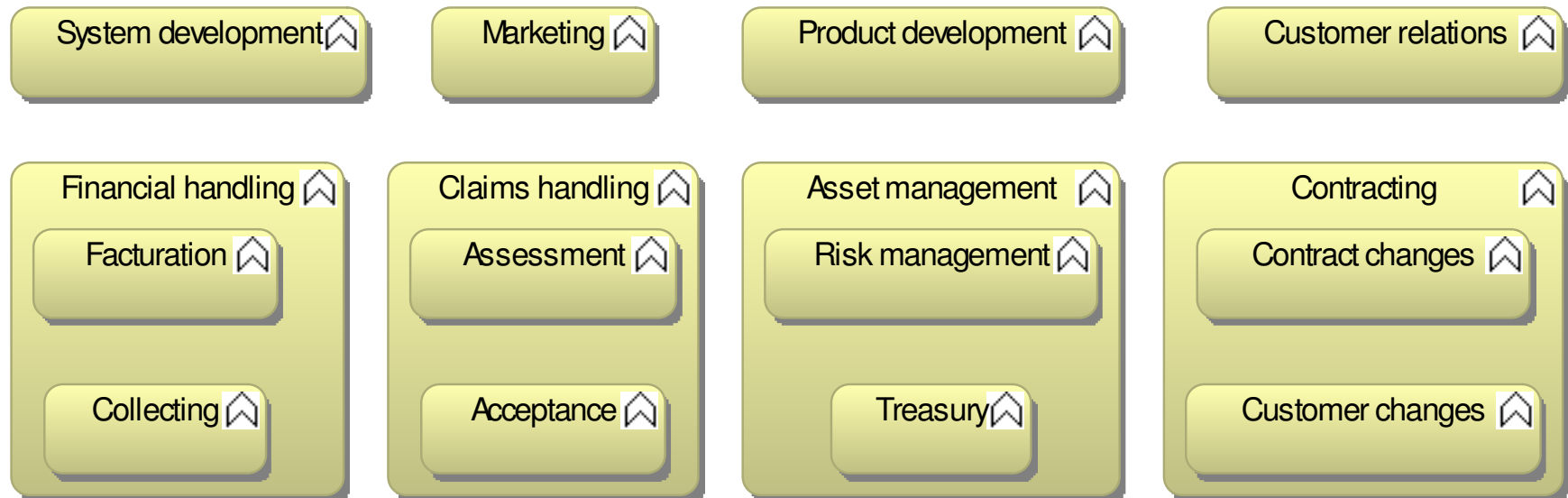
Aggregation
Association

▶ Processes and roles



*Triggering
Assignment*

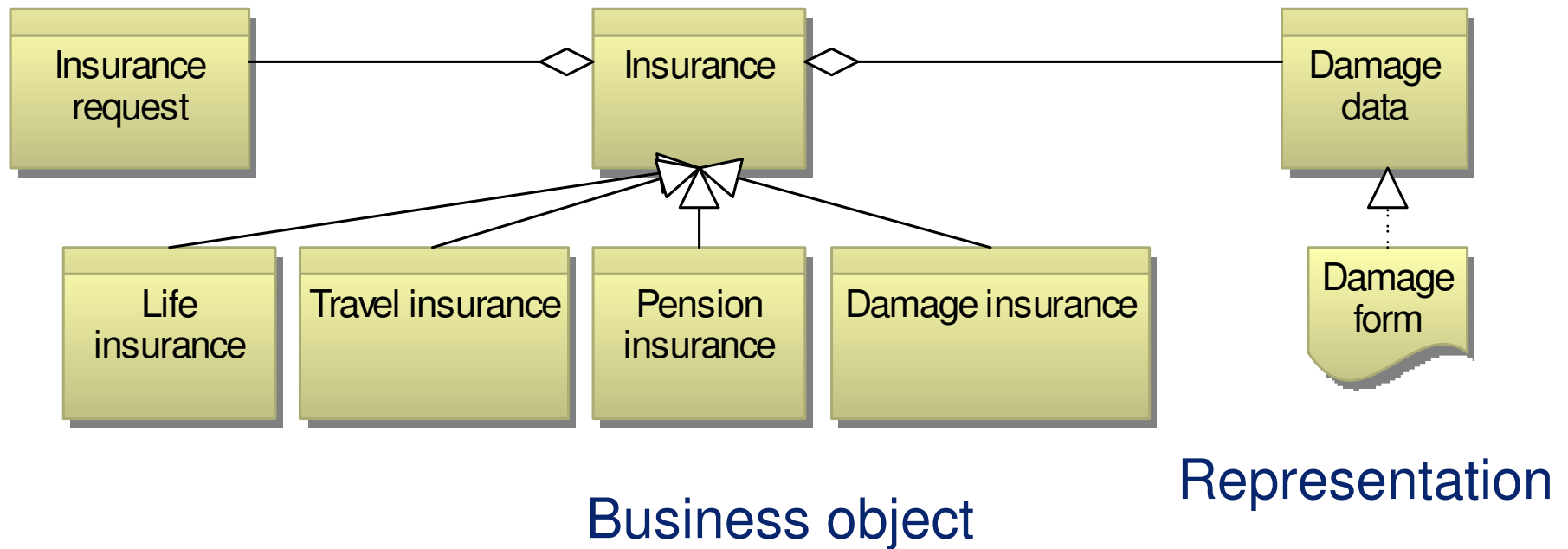
▶ Business functions



Business Function

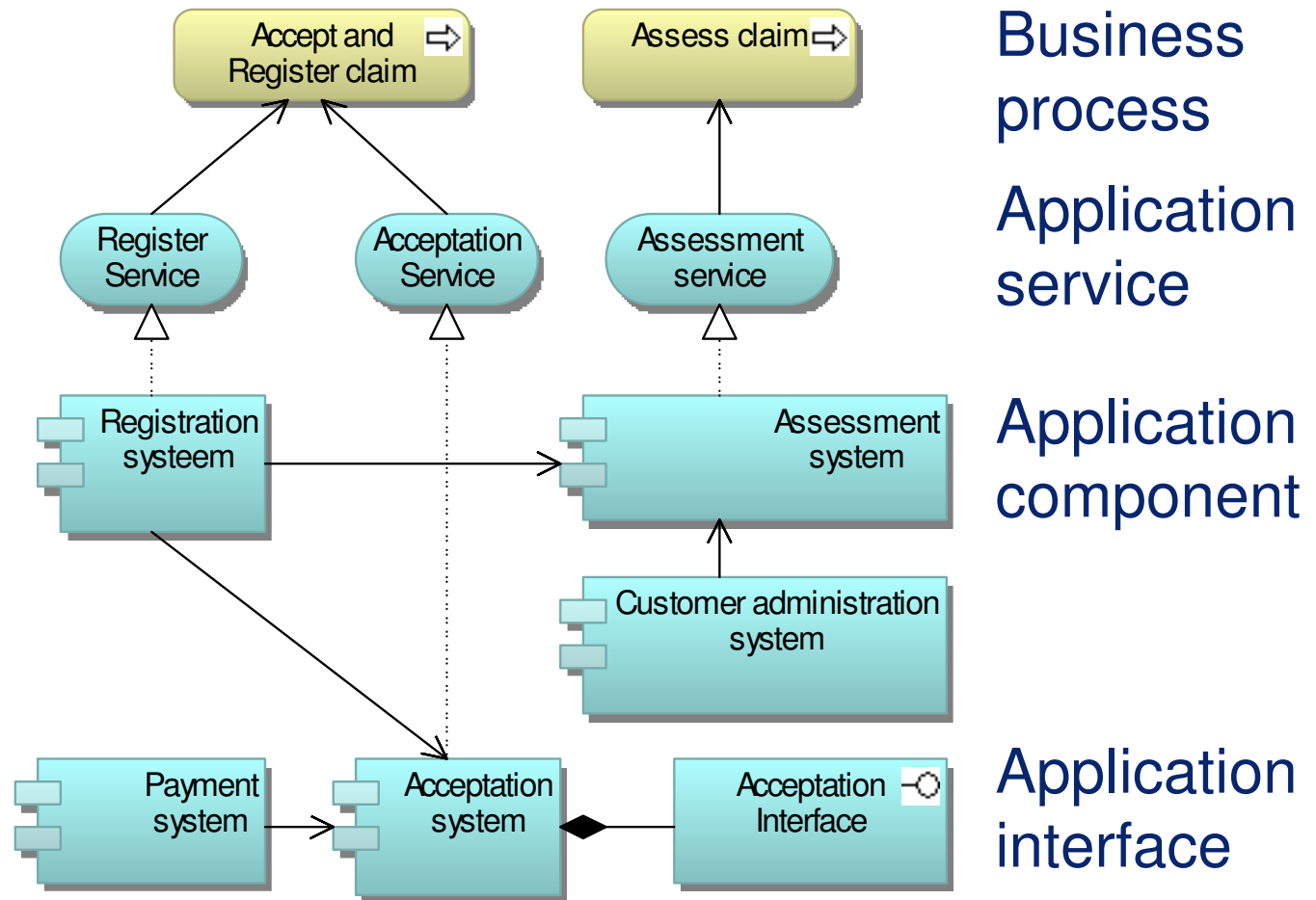
*Composition
(by nesting)*

▶ Business objects



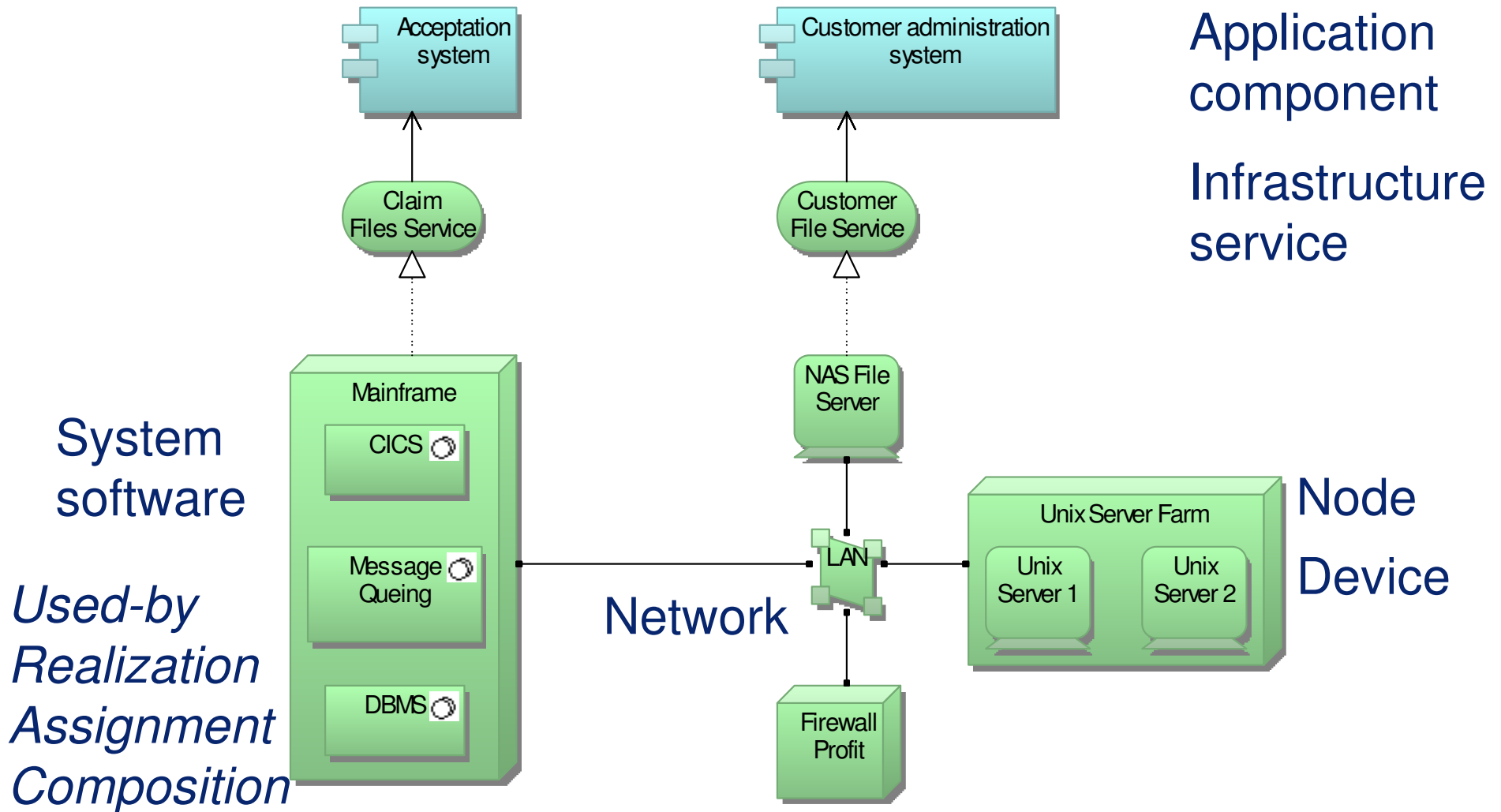
Aggregation
Specialization
Realization

▶ Applications and application services

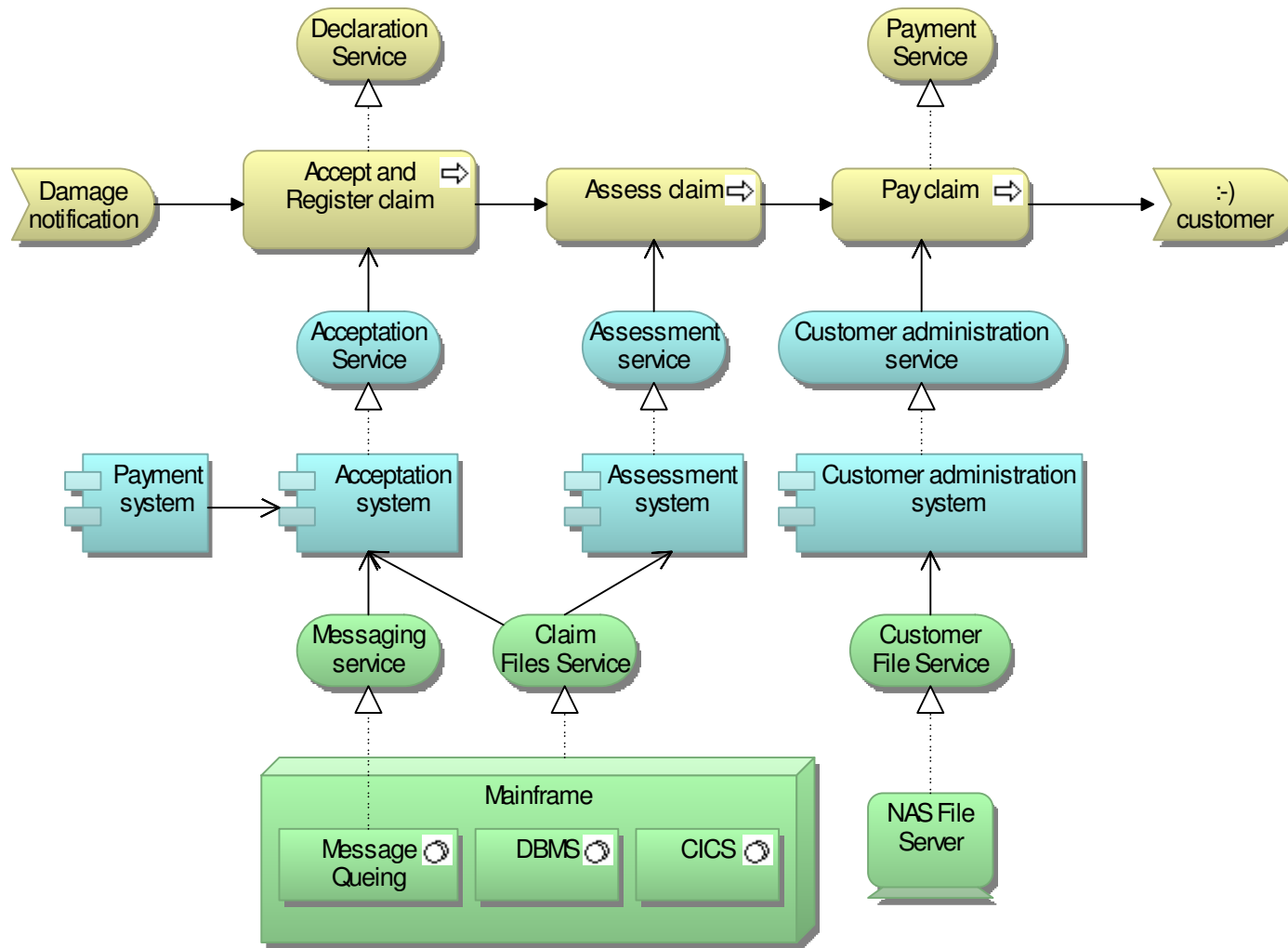


*Used-by
Realization
Composition*

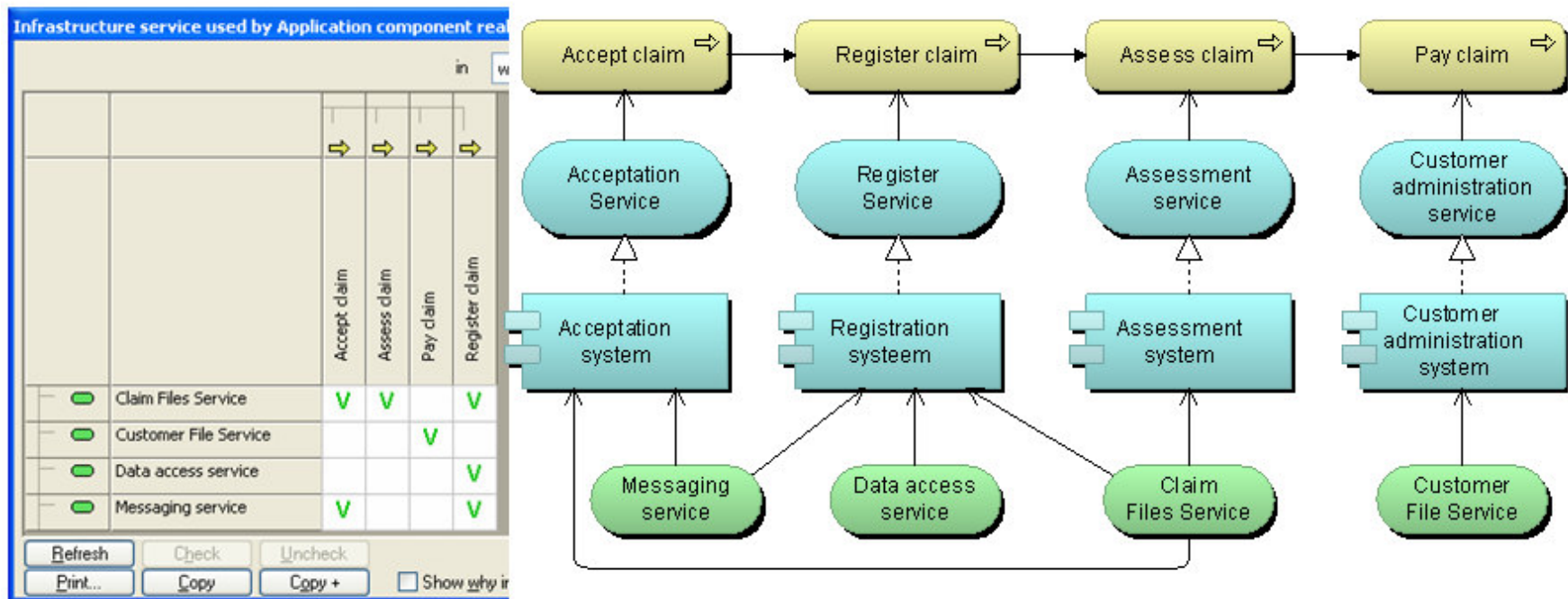
► Infrastructure



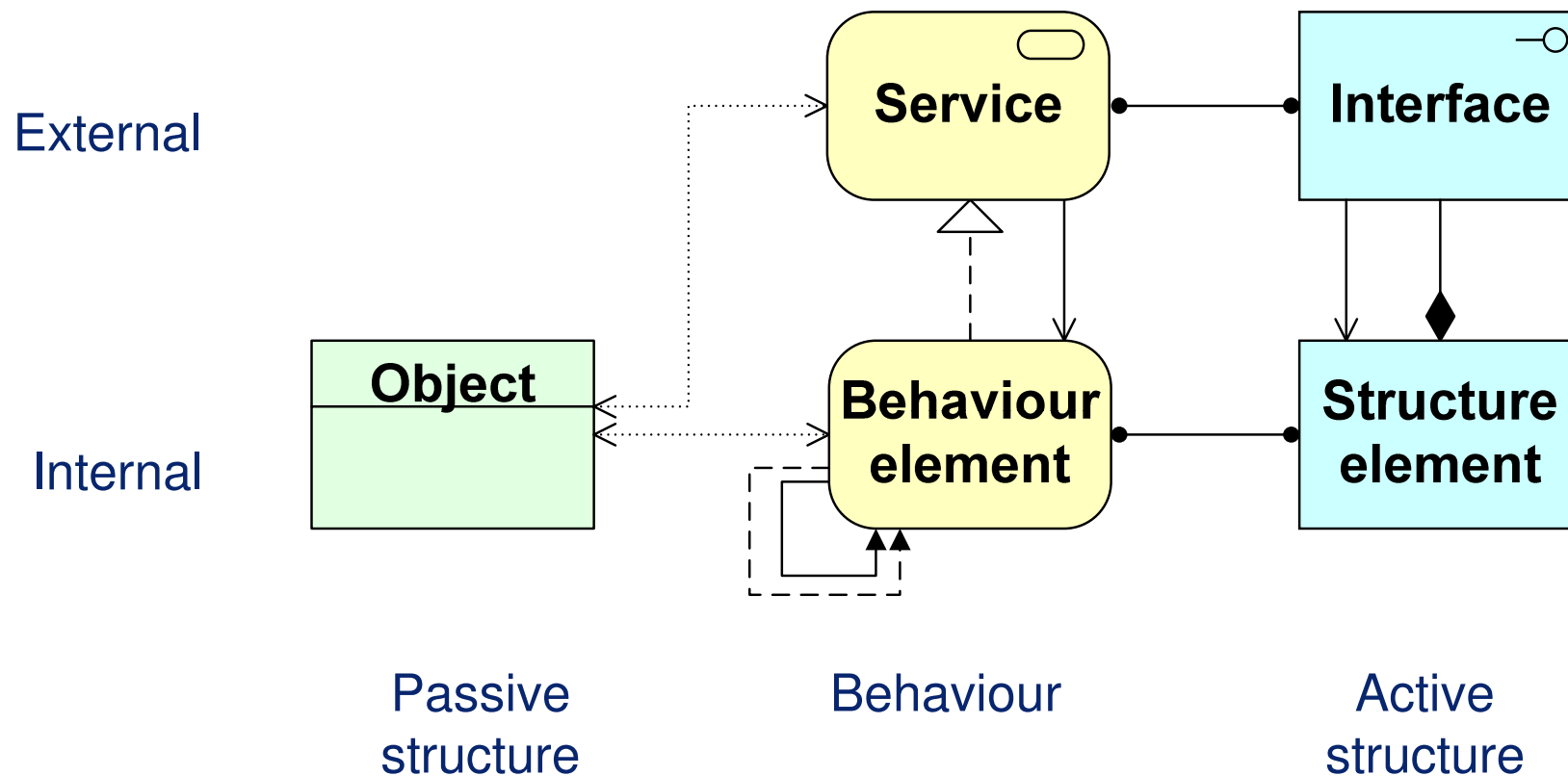
Layered view



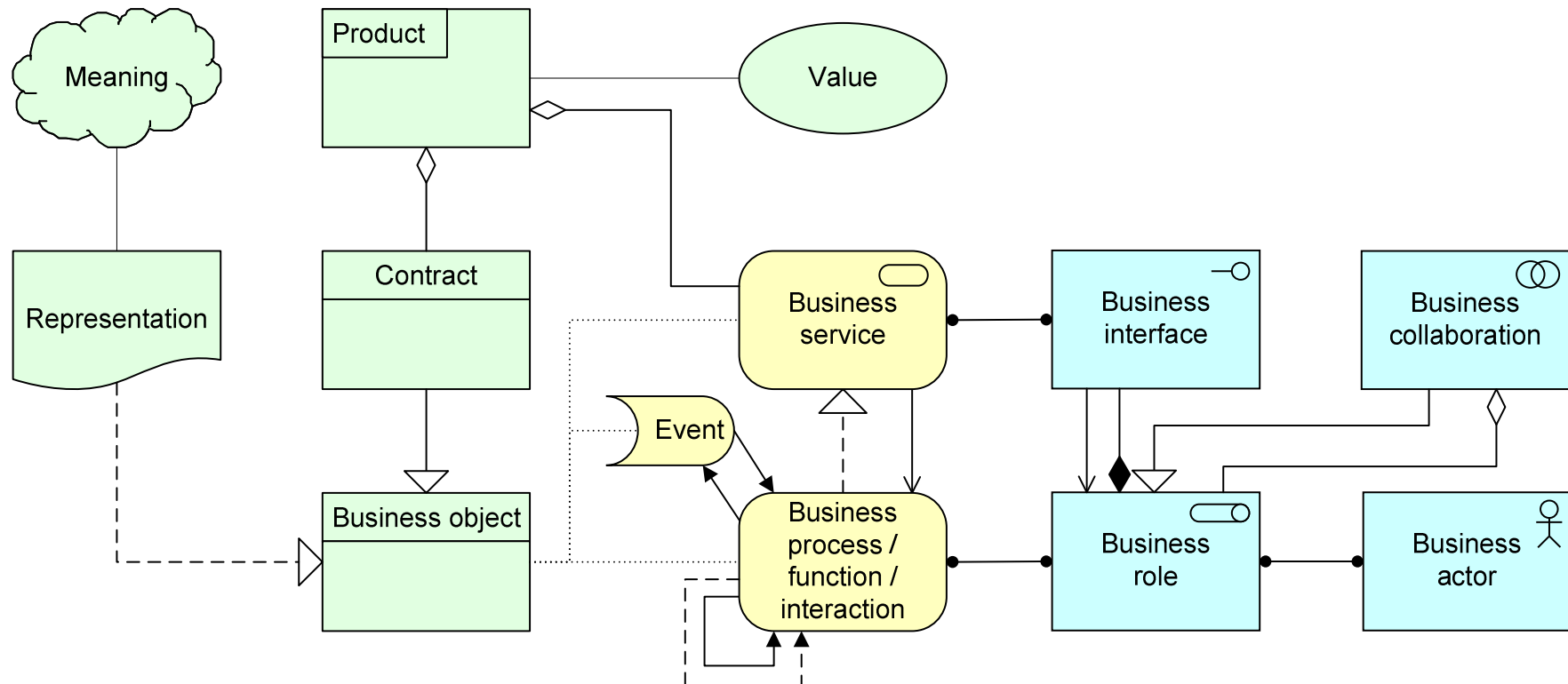
▶ Derived relations



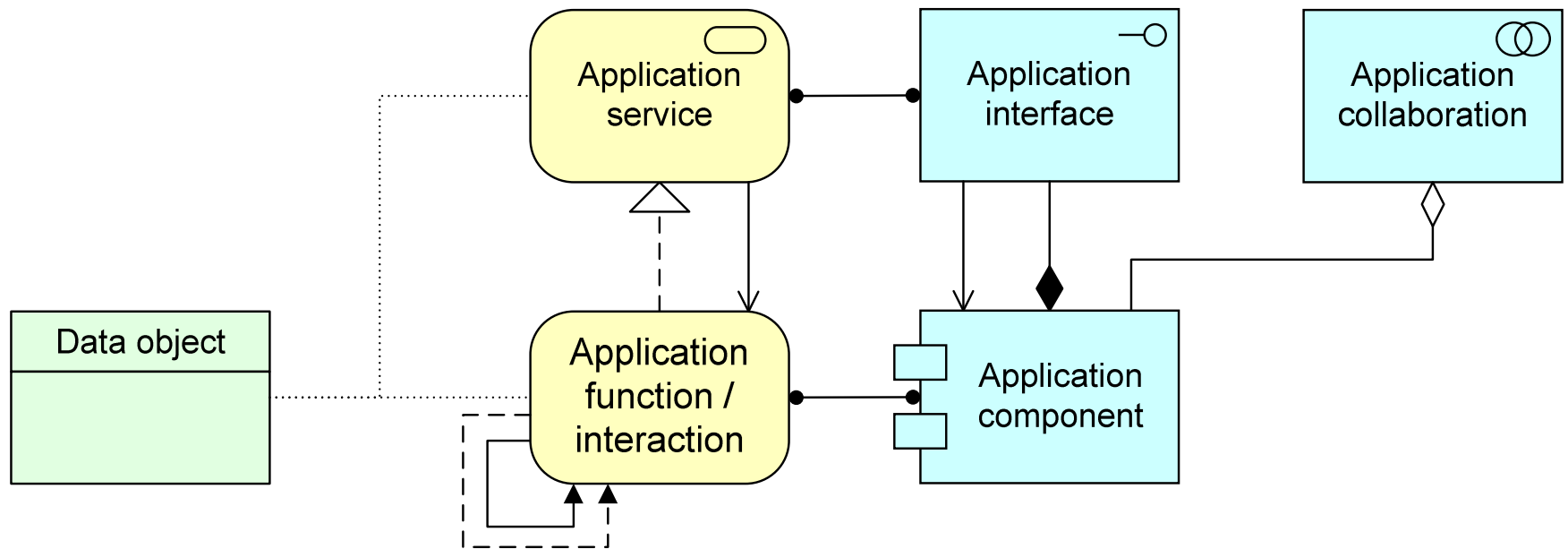
► Generic meta model ArchiMate



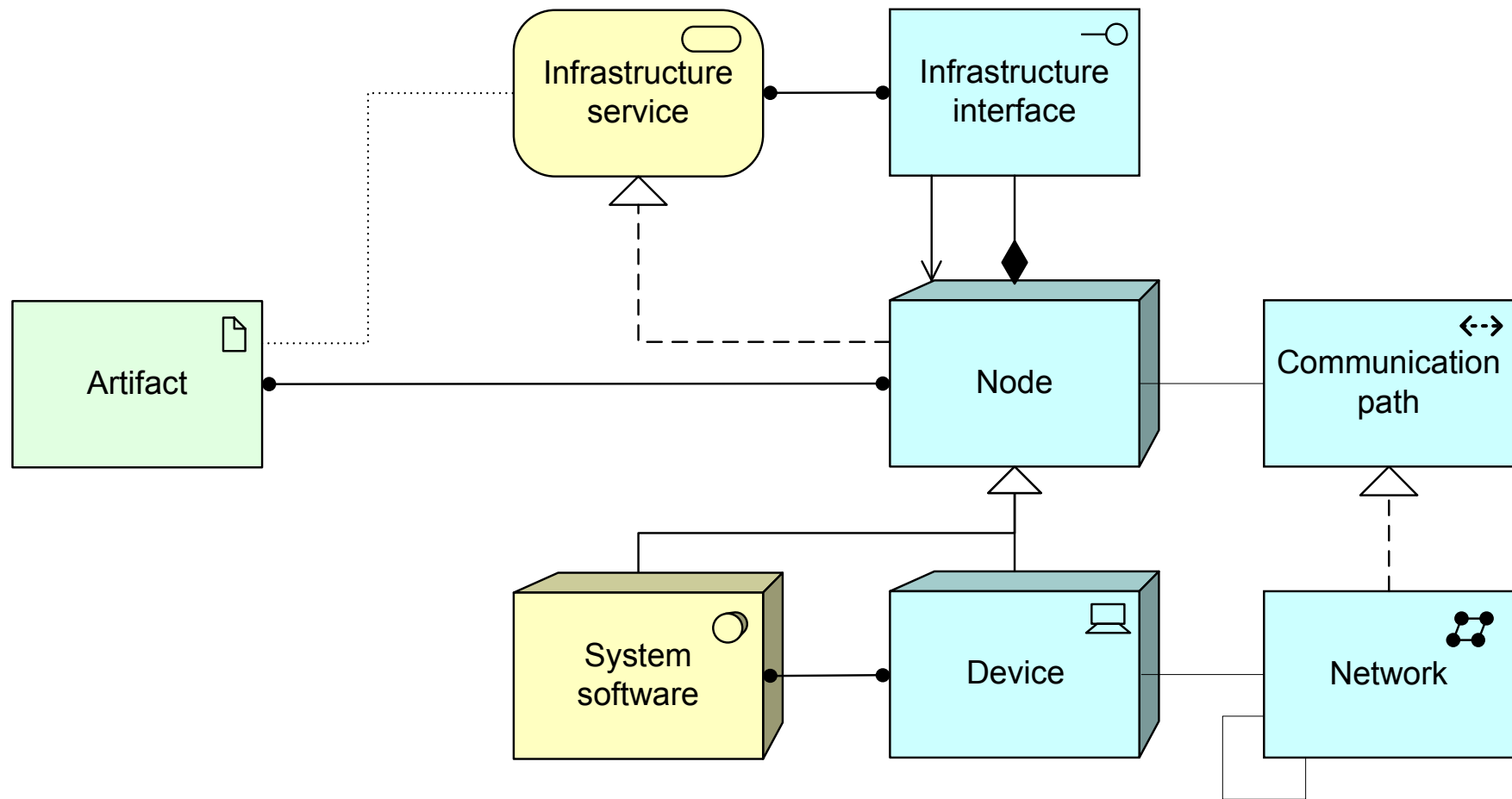
▶ Business layer meta model



▶ Application layer meta model



▶ Technology layer meta model





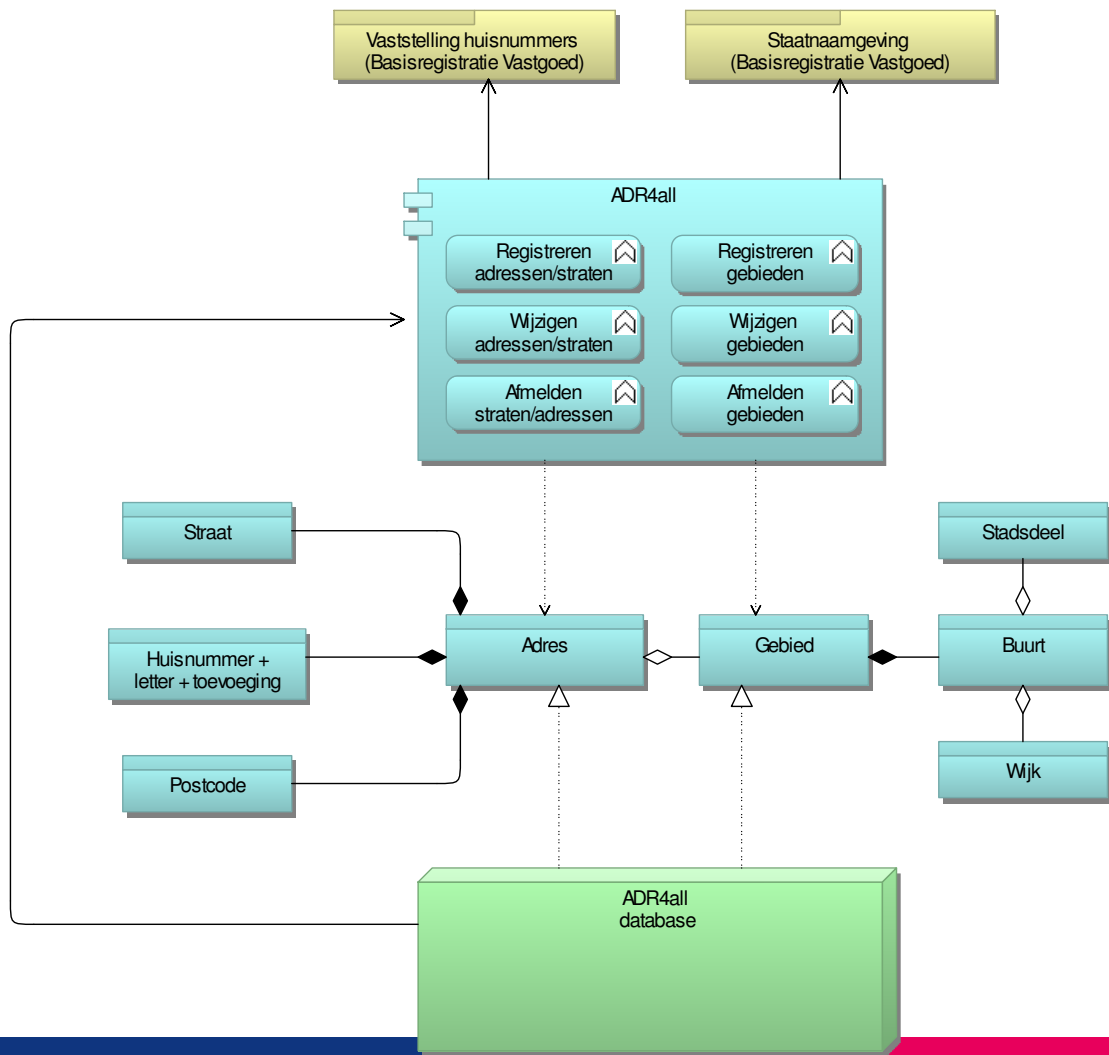
Some examples from daily practice

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▶ Example: City of Enschede - 1



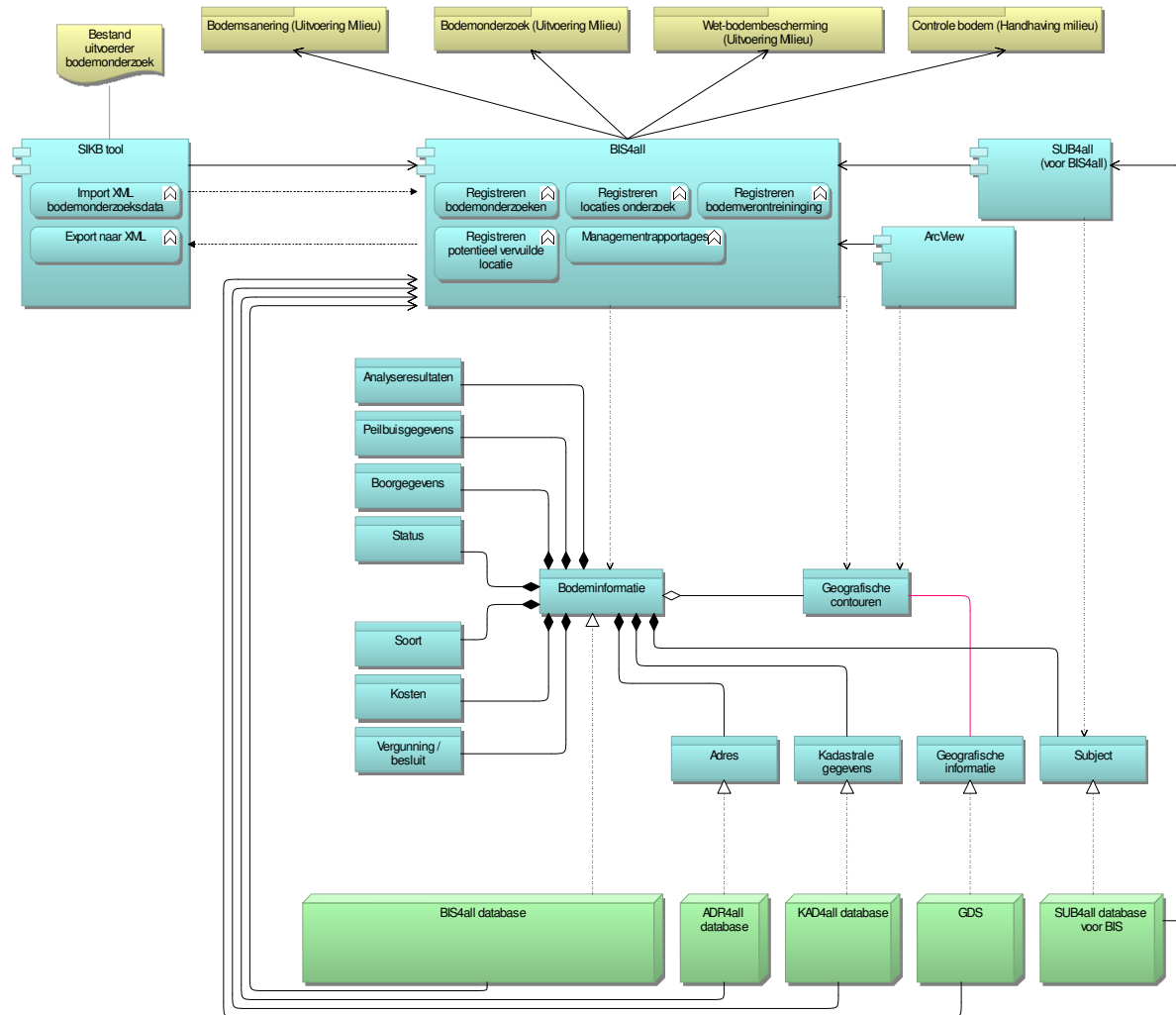
Product

Application
with functions

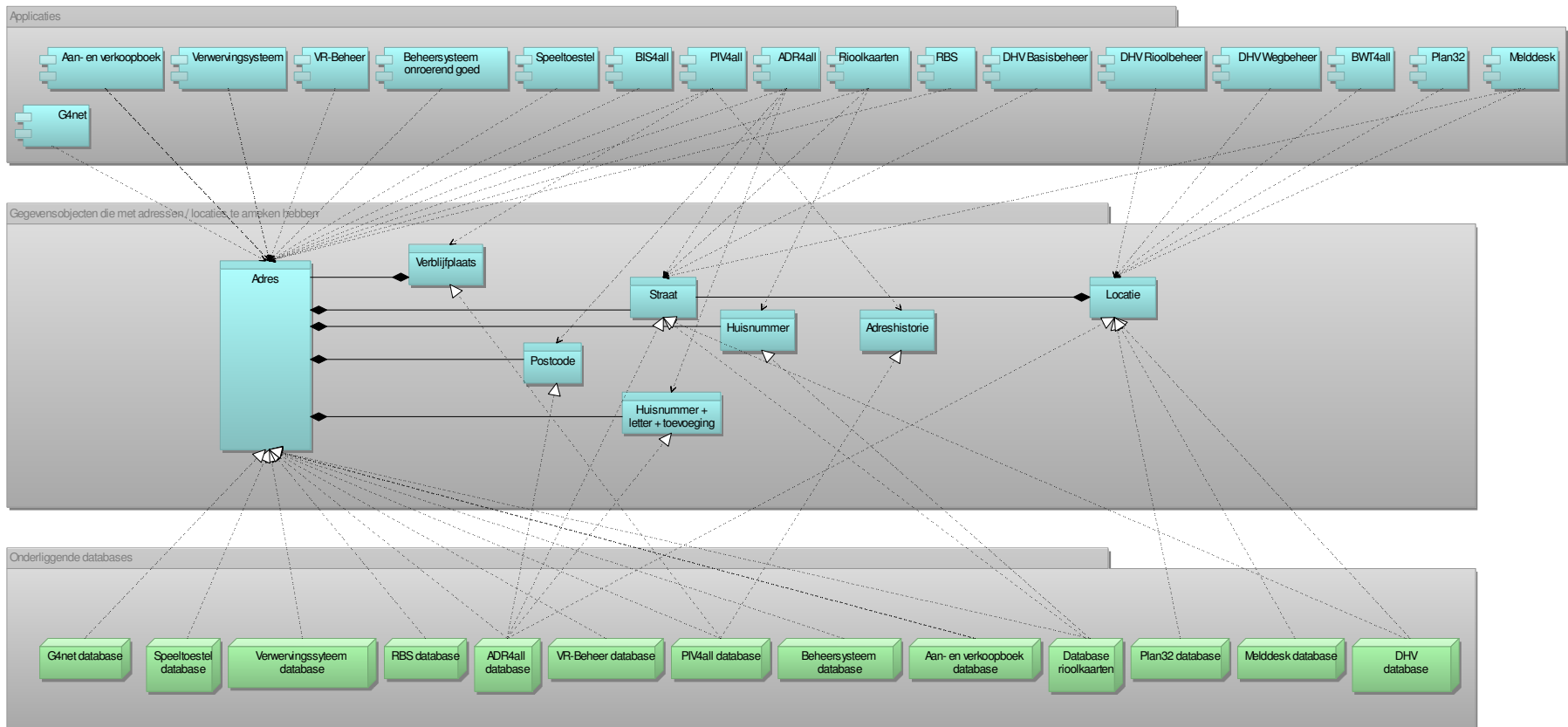
Application
data objects

Database

Example: City of Enschede - 2

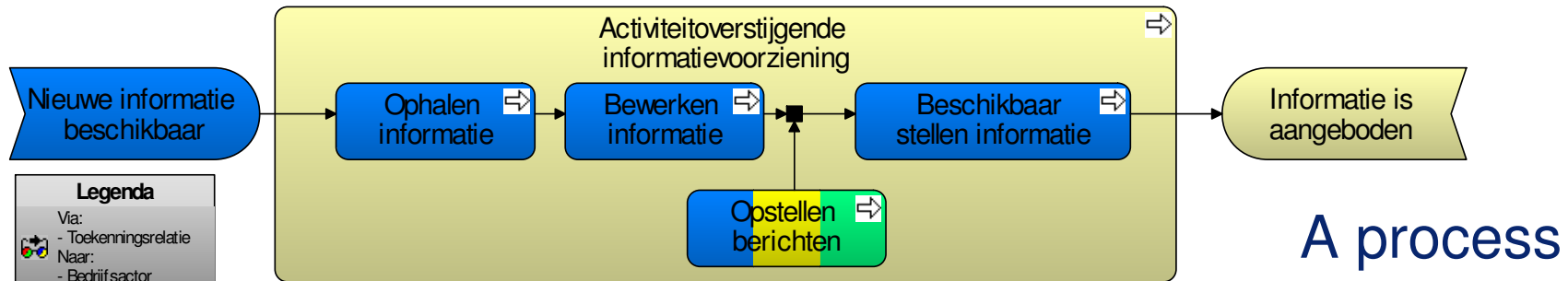


► Example: City of Enschede - 3

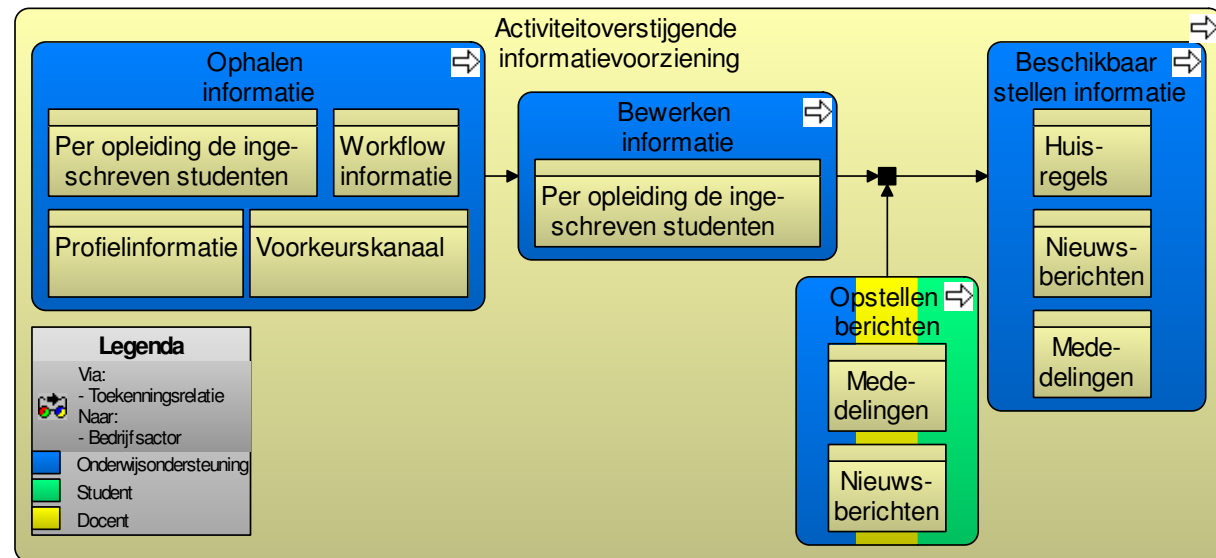
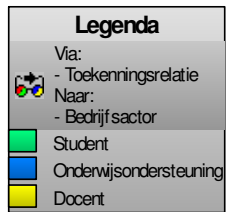


Which data is used by which application, and stored in which database

▶ Example: 3 technical universities

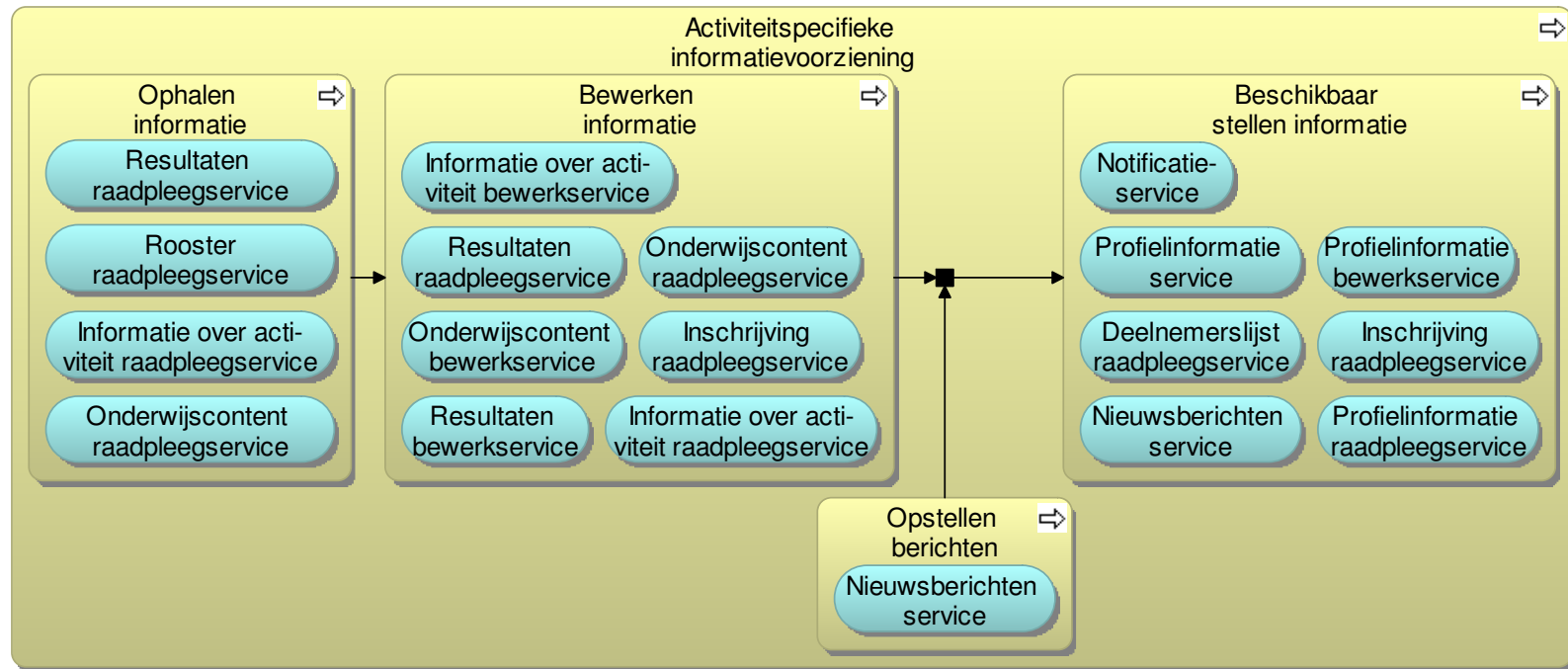


A process



Use of business objects
(access relation by nesting)

▶ Example: 3 technical universities



Use of application services by the process
(used by relation by nesting)

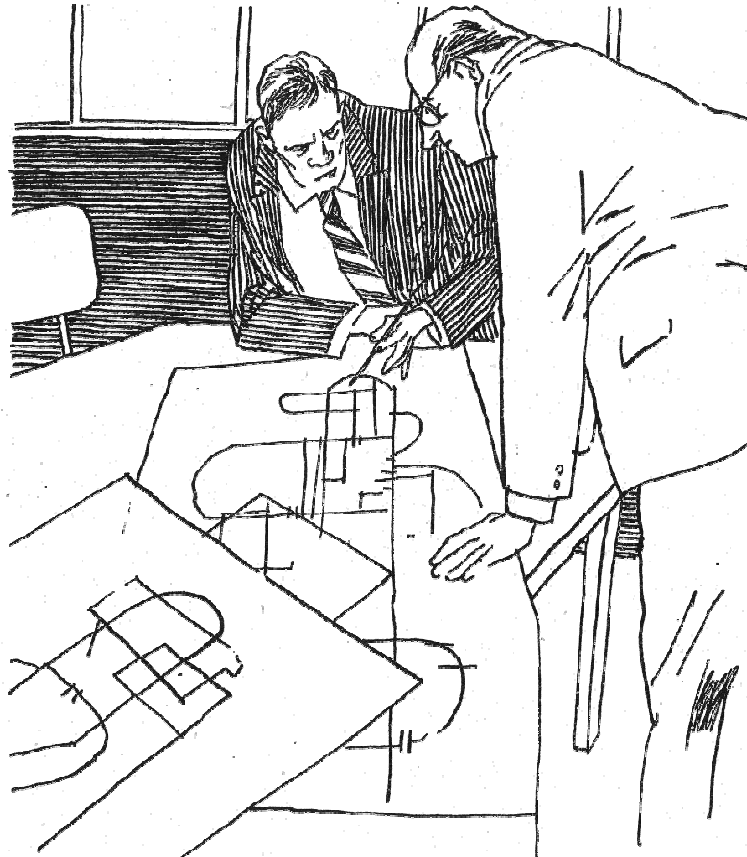


Viewpoints and views in ArchiMate

Classifications and examples

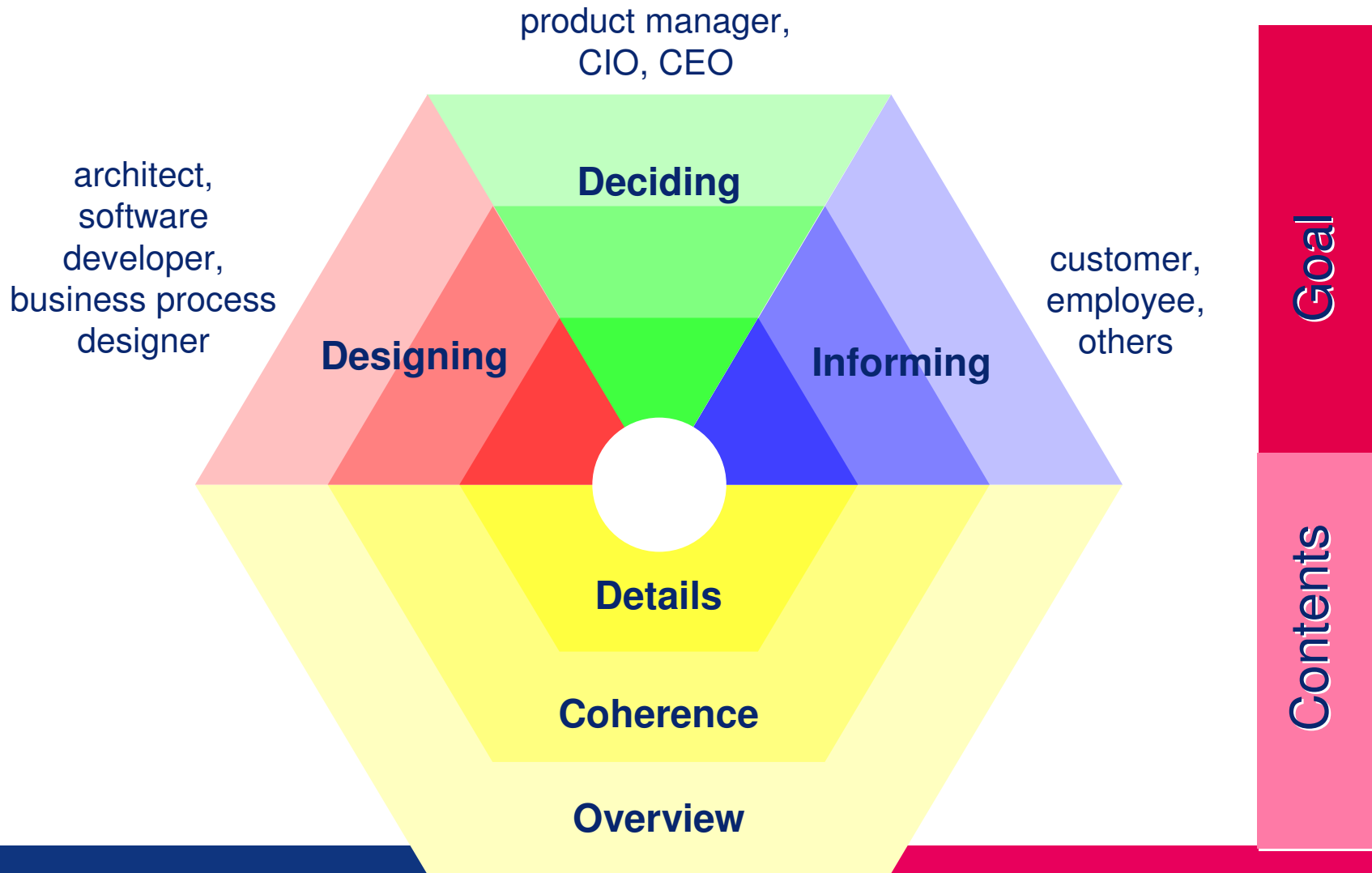


▶ Less is more...



“let’s ask the architect to leave out this rubbish,
then we will get a nice result!”

► Classification viewpoints ArchiMate



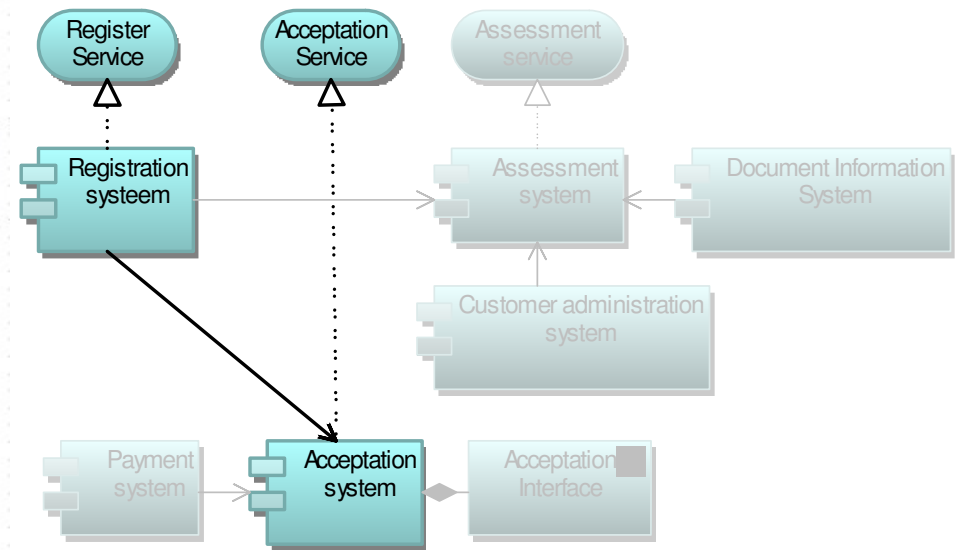
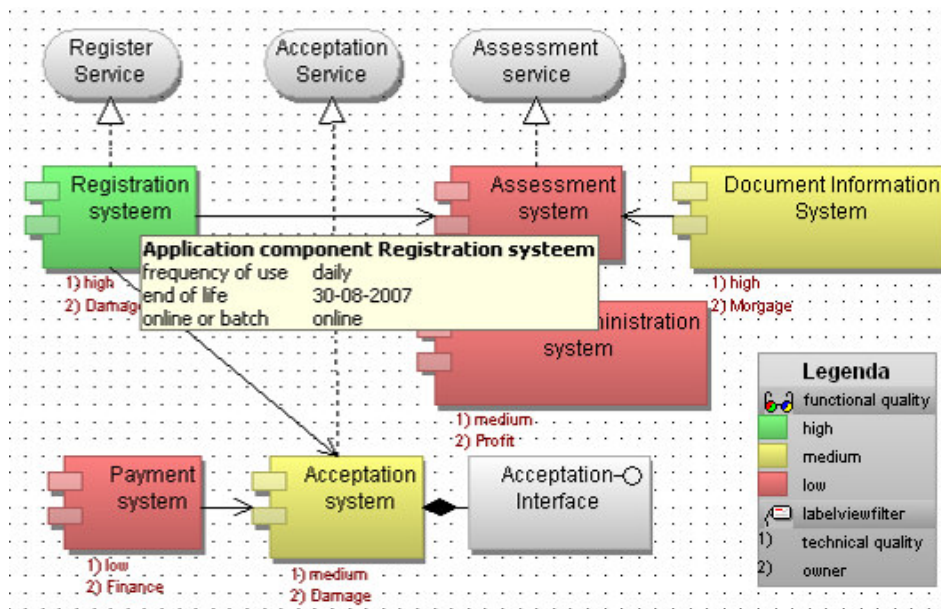
▶ Viewpoint Types

- ▶ Viewpoints for designing
 - ▶ typically used by architects in the design process
 - ▶ Examples: Application diagram, Process diagram
- ▶ Viewpoints for deciding
 - ▶ intended to support managers in making decisions
 - ▶ Examples: landscape map, cross-reference table, analysis report
- ▶ Viewpoints for informing
 - ▶ inform stakeholders about an architecture
 - ▶ Examples: process illustration, animation, cartoon

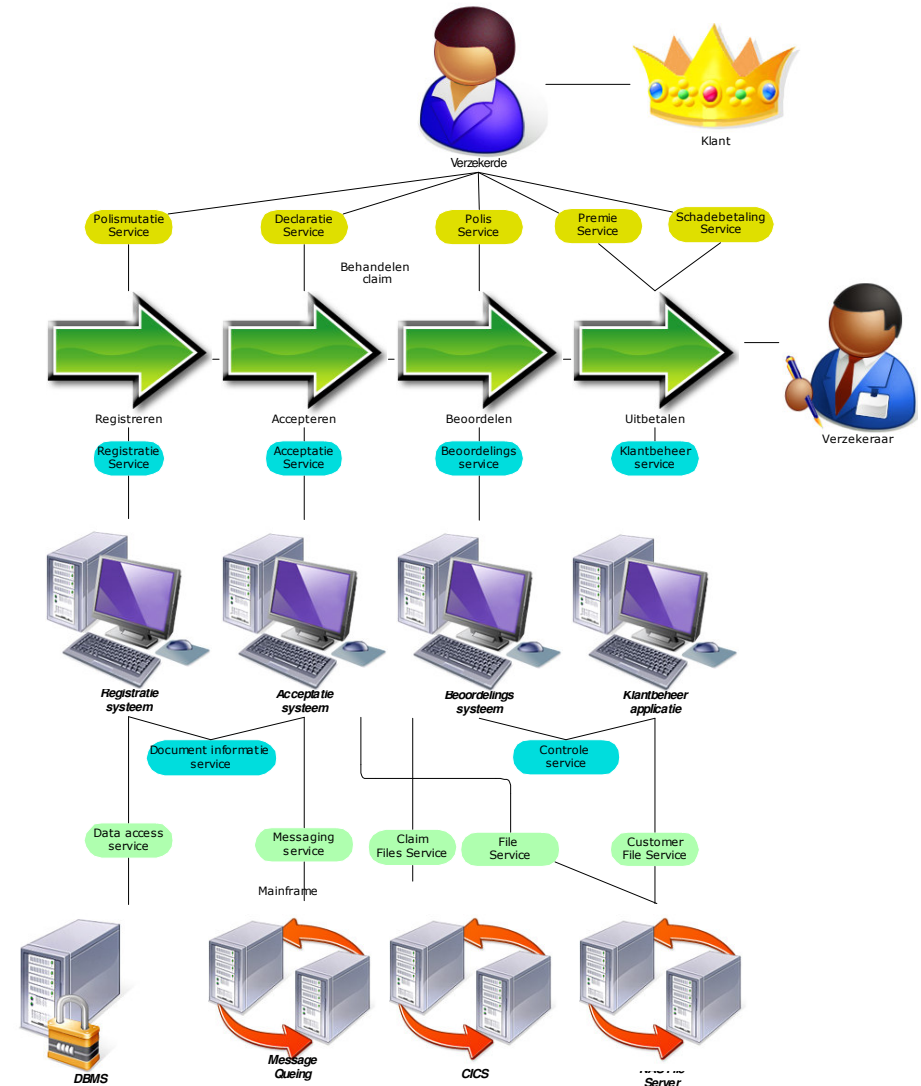
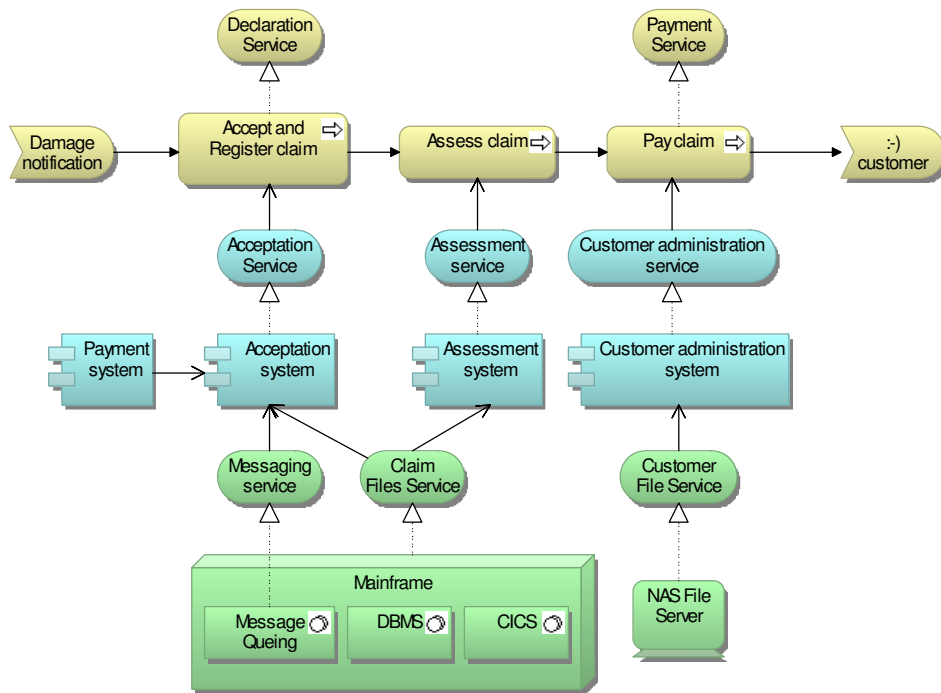
▶ Level of Detail

- ▶ Details
 - ▶ small part of an architecture with high level of detail
 - ▶ e.g. for a software engineer designing and implementing a component, or process owner responsible for optimizing a process
- ▶ Coherence
 - ▶ spans multiple aspects or layers and shows their relations
 - ▶ e.g. for an operational manager responsible for IT support for a number of business processes
- ▶ Overview
 - ▶ abstract, comprehensive view of multiple aspects and layers
 - ▶ for enterprise architects and upper-level managers

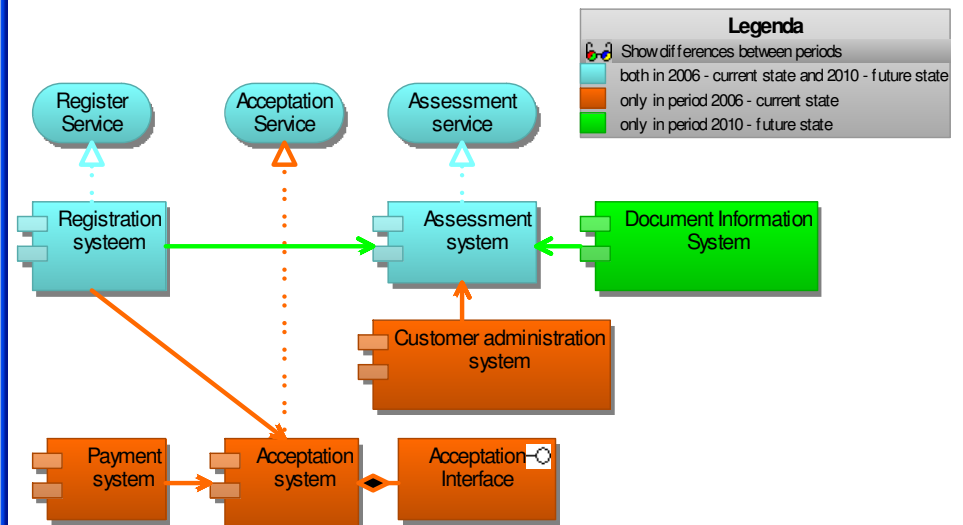
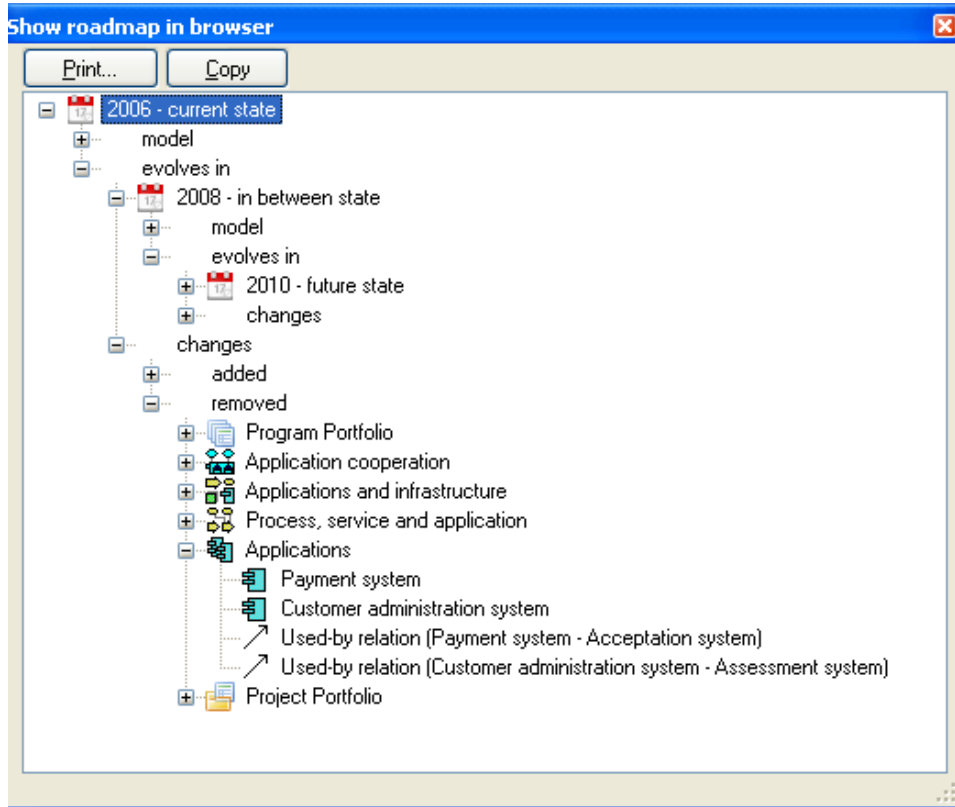
▶ Examples views



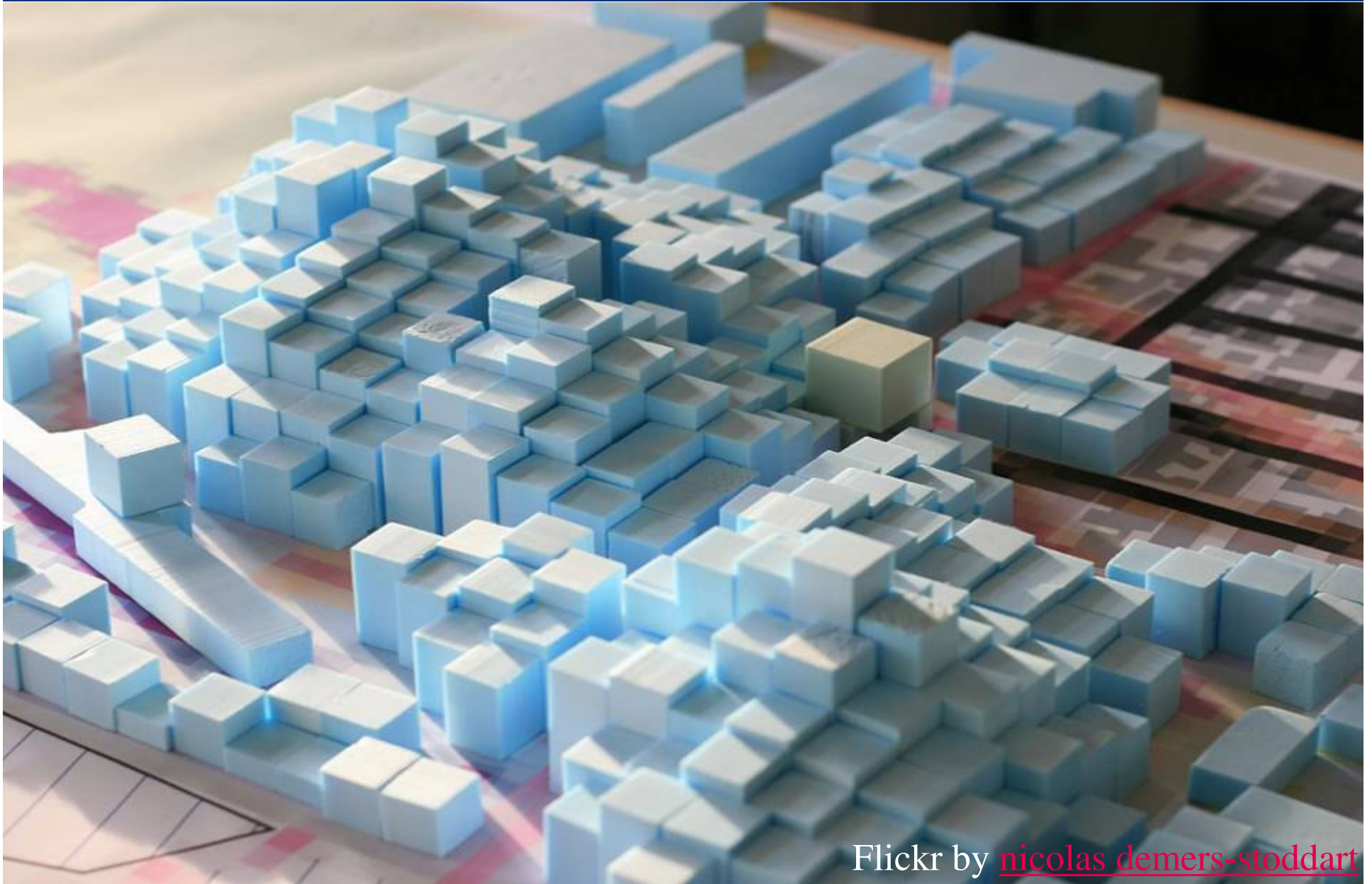
Modelling and Views



Roadmapping: differences as-is/to-be



▶ ArchiMate and ...

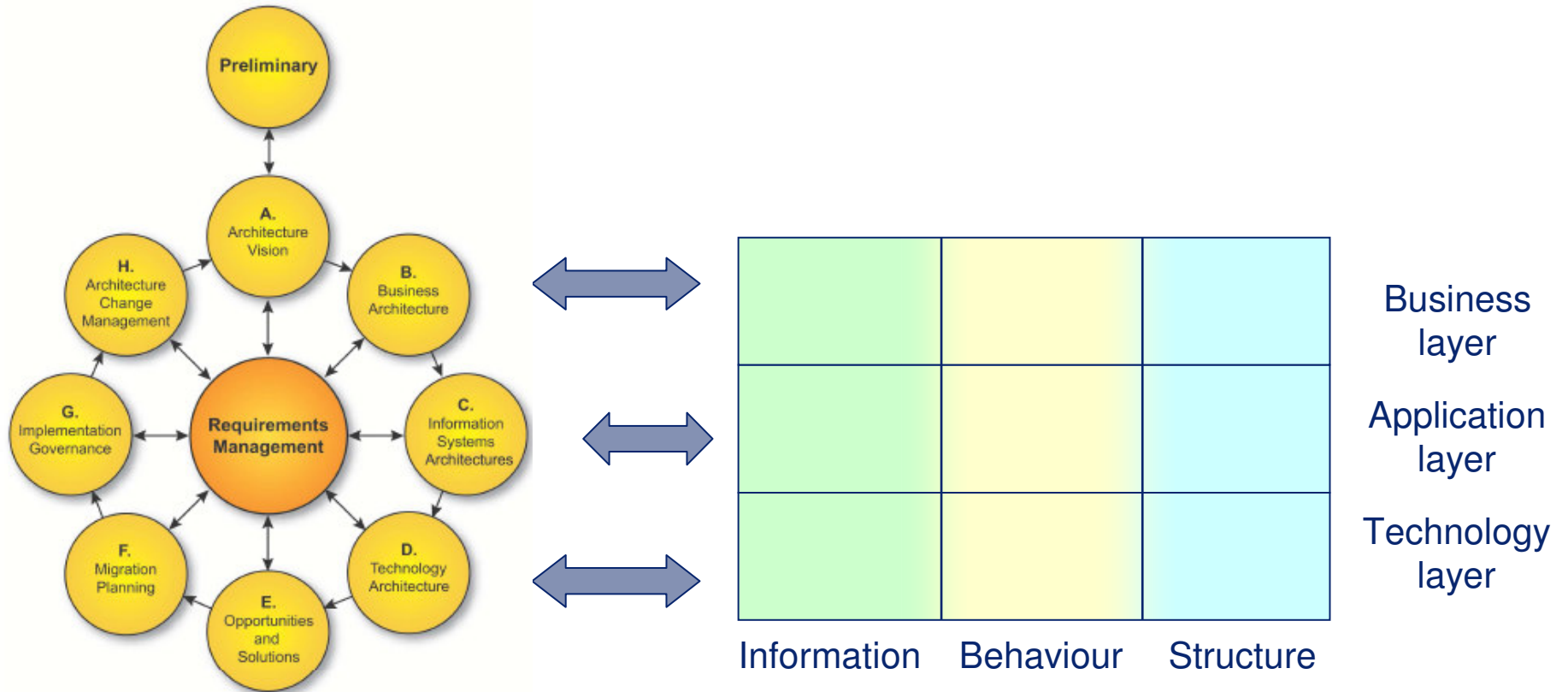


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▶ ArchiMate and... other languages

- ▶ ArchiMate: perfect starting point for MDA and software development
 - ▶ ArchiMate incorporates the service paradigm
 - ▶ ArchiMate has implementation relationships to process modelling languages (BPNM, BPEL)
 - ▶ ArchiMate has implementation relationships to software engineering design languages (UML)
- ▶ ArchiMate connects architectural domains
 - ▶ It has a broader scope, but less detail than UML and BPMN
 - ▶ It does not replace specialized languages for different architectural domains, such as UML, BPMN and others

▶ ArchiMate and... the ADM



▶ ArchiMate and... support

- ▶ ArchiMate is commercially supported
 - ▶ By (certified) toolvendors
 - ▶ BiZZdesign: Architect
 - ▶ Casewise: Corporate Modeler
 - ▶ IDS Scheer: Aris ArchiMate Modeler
 - ▶ Telelogic: System Architect
 - ▶ Trous: Metis
 - ▶ By a large number of service providers like Atos Origin, BiZZdesign, Capgemini, Getronics, Logica, Ordina,...
- ▶ And used by many organisations
 - ▶ Finance, governance, transport, energy, water, education, health care, health insurance, industry, public sector, ...



▶ ArchiMate in HE



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▶ ArchiMate and...Service providers



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▶ ArchiMate and... The Open Group

- ▶ ArchiMate is maintained by The Open Group
 - ▶ Including certification for tool support, training and individuals
- ▶ The ArchiMate Forum
 - ▶ platform and community for everyone involved with the use and evolution of ArchiMate
 - ▶ Henry Franken (chair, BiZZdesign)
 - ▶ Erik Proper (vice-chair, Capgemini)
 - ▶ Roland Ettema (Logica)
 - ▶ Garry Doherty (director Open Group)



▶ Modelling.....YES WE CAN!

- ▶ The *language* for describing enterprise architectures
- ▶ Covers *business, application and technology* layer
 - ▶ With relations between these layers
- ▶ Graphical language with *formal semantics*, enabling analysis and tool support
- ▶ Techniques for *visualization and analysis*, aimed at various stakeholders
- ▶ Widely supported
- ▶ Open *standard* maintained by *The Open Group*

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