



Tools for Enterprise Architecture

Workshop The Open Group Conference
October 22nd, 2008

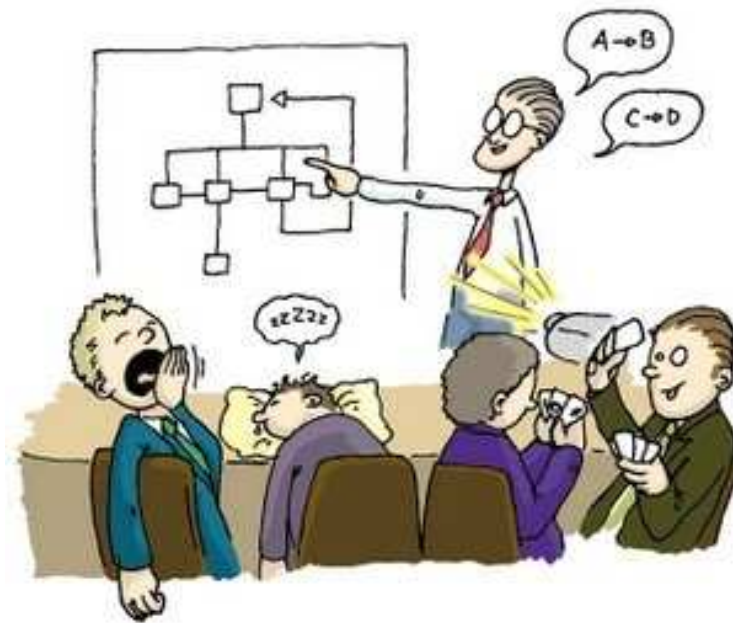
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BiZZdesign

www.bizzdesign.com

▶ Proposed schedule

- ▶ Some basics on Enterprise Architecture
- ▶ Current experiences with tools for EA
 - ▶ Positive, negative, requirements
- ▶ Requirements for an EA tool
- ▶ Tool families
- ▶ Tool selection
- ▶ Some best practices





Introduction Enterprise Architecture

Some basic concepts to level our minds...



▶ Enterprise Architecture



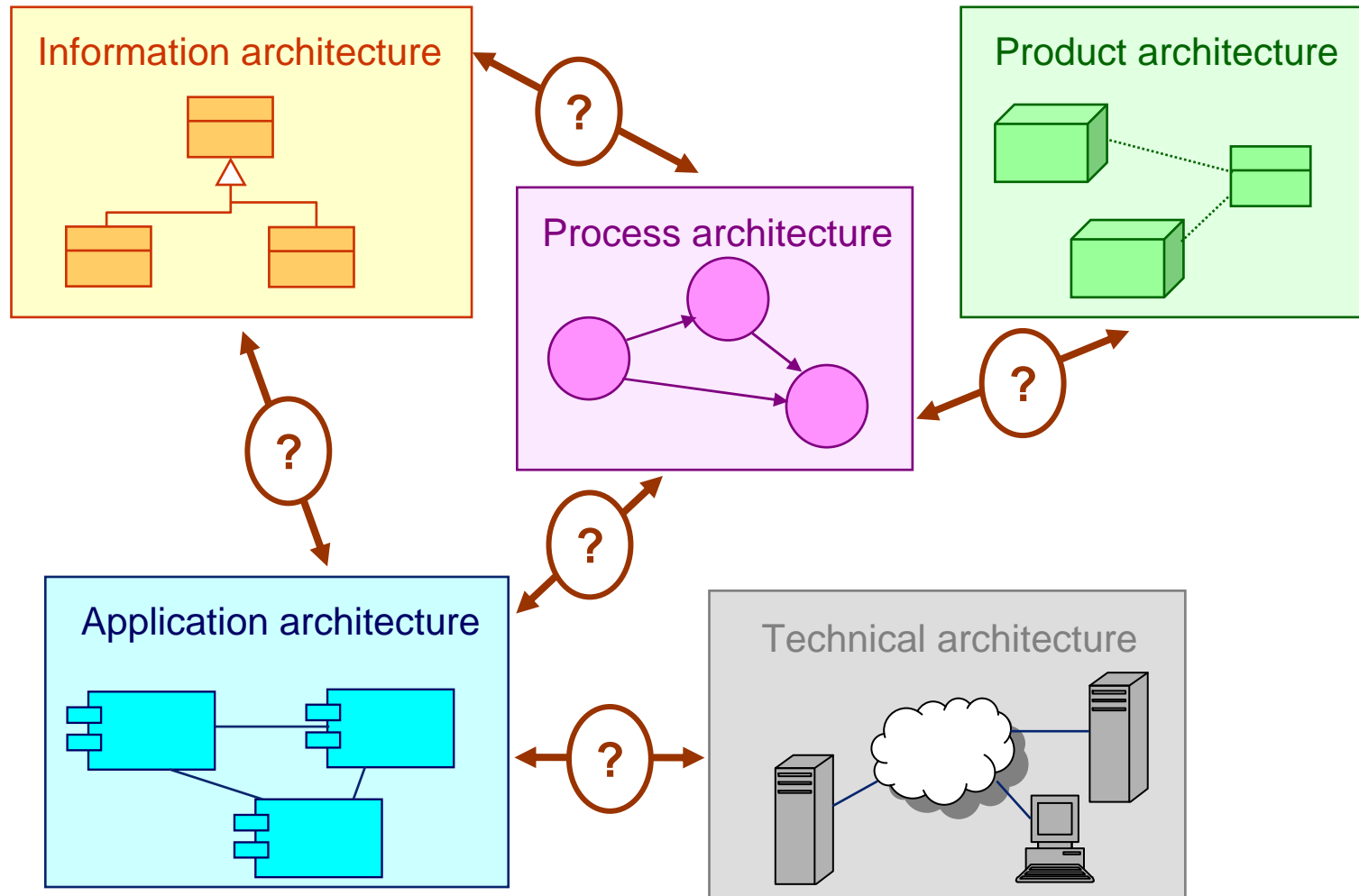
IEEE Std 1471:

Architecture = structure(s) of a system in terms of

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

“Structure with a vision”

EA: Describing Coherence



▶ Important notions (IEEE 1471)

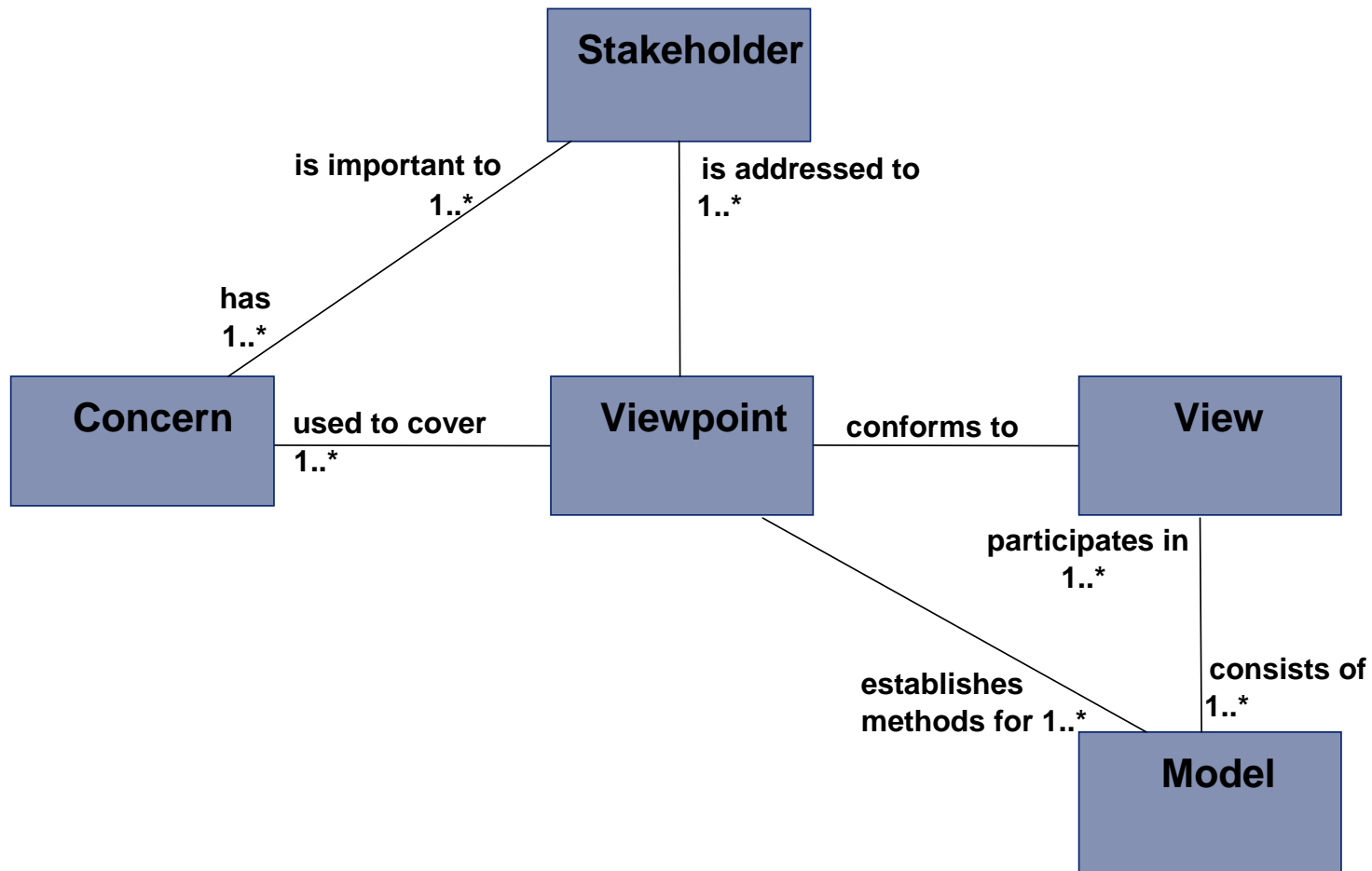
- ▶ A *stakeholder* is a person or organisation with a certain interest in (part of) an architecture
- ▶ A *view* is a representation of a system from the perspective of a set of concerns of one or more stakeholders. A view is what you see.
- ▶ A *viewpoint* is where you are looking from. It defines 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

- ▶ Air photo
 - ▶ Development plan
- ▶ Ground photo
 - ▶ Building permit



▶ IEEE 1471 (summary)





Current experiences with tools for EA



▶ Your votes please!

Who is using office tools
(powerpoint, visio, word, excel)
to model and visualize
the (enterprise) architecture?

▶ Discuss the following questions

- ▶ What do you like about the tool(s) you use(d)?
 - ▶ What didn't you like about the tool(s) you use(d)?
 - ▶ What are your main requirements for tool support?
-
- ▶ Discuss it with your neighbors
 - ▶ Write down the top-3 for each question

▶ Gartner on Office tools (2006)

While most architecture endeavors can begin successfully with office automation tools (for example, Microsoft Office), diagramming tools (for example, Microsoft Visio) and knowledge management tools (for example, Lotus Notes), at a certain point, more comprehensive architecture modeling tools become a necessity.

▶ Office tools for EA

Many organization still use MSOffice tools (PowerPoint, Excel, Visio,...) for EA. Drawbacks using Office tools:

- ▶ Often limited to description of isolated enterprise architecture domains, so
 - ▶ no relations between different parts and domains of the enterprise architecture
 - ▶ no insight in the relationships within the enterprise architecture
 - ▶ no impact of change analysis possible
- ▶ Schemas visualizing the architecture are difficult to construct / maintain
 - ▶ only a limited number of views are developed
- ▶ Overall consistency of the architecture is very hard to maintain
 - ▶ propagating changes done by hand and is time-consuming

▶ Advantages EA tools

- ▶ Descriptions of architectural domains are not stored as separated independent models
 - ▶ relations between different parts of the architecture are actually part of the model
 - ▶ enabling impact of change analysis
- ▶ Increasing consistency of the architecture
 - ▶ consistency and model checking mechanisms
- ▶ Automatic generation of views and visualizations
 - ▶ tailored for a particular stakeholder
- ▶ Description of enterprise architecture principles



Requirements EA Tools

The most common requirements for EA Tools



▶ Minimal requirements (Gartner)

The minimum requirements of an EA tool are:

- A repository.
- A metamodel that supports the business, information and technology viewpoints, as well as solution architectures. The repository should also support relationships among and between objects in these viewpoints or architectures.
- Ability to create or import models and artifacts.
- The ability to present repository information to support stakeholder needs, including in graphical, text and executable forms.

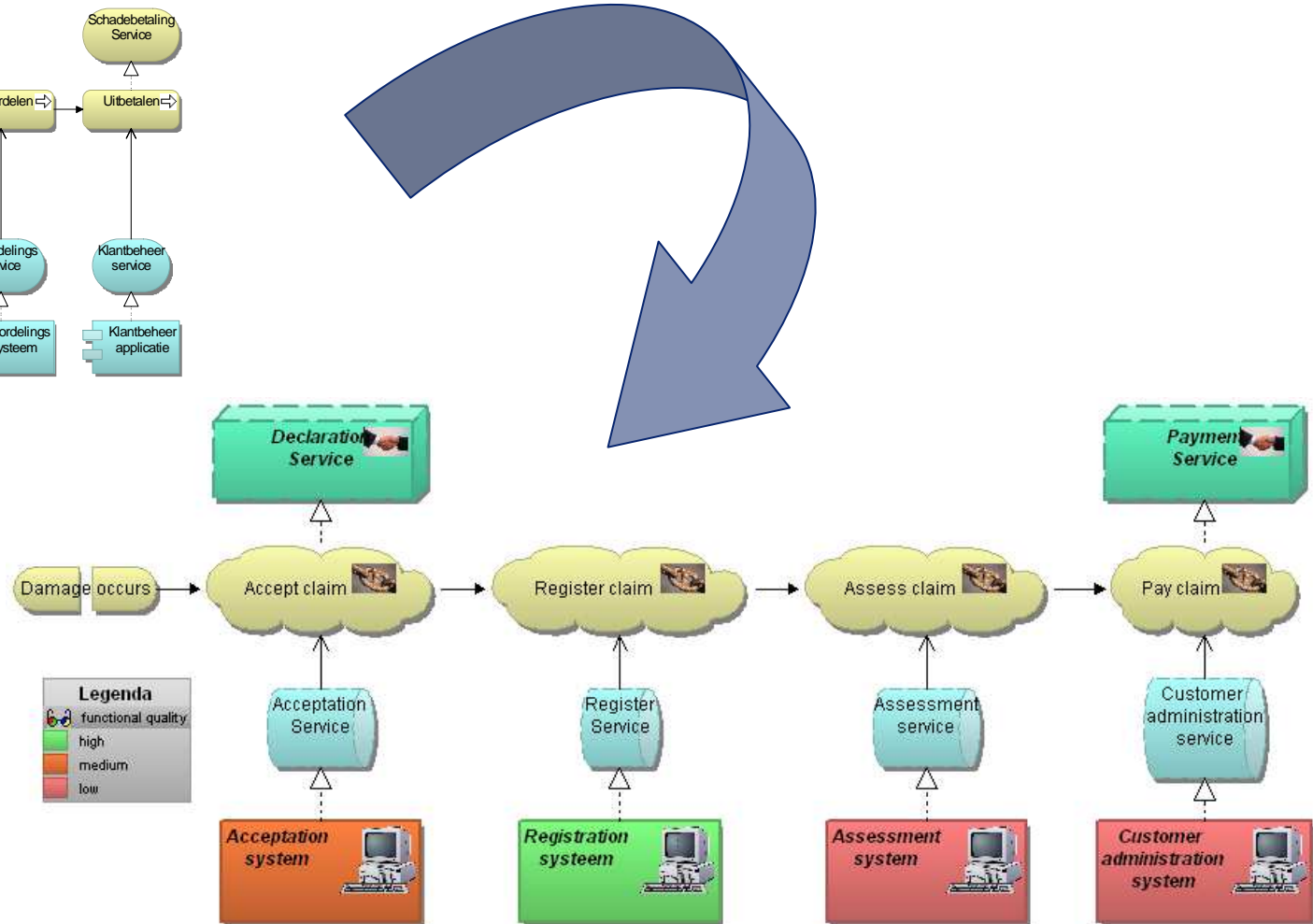
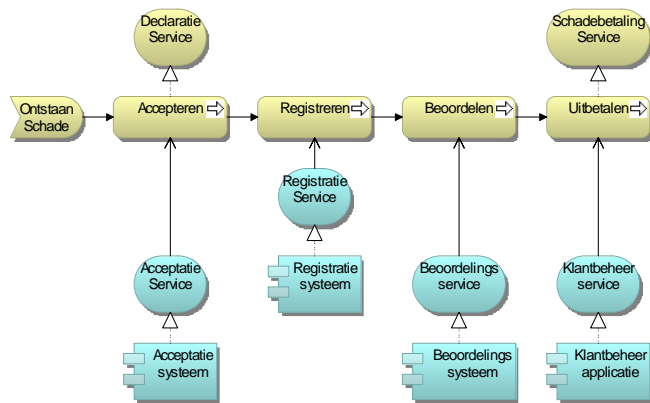
▶ Framework and concepts

- ▶ The EA tool should support the relevant concepts and framework(s)
 - ▶ Relevant for the goal of your enterprise architecture
 - ▶ *More is less!*
 - ▶ Support of more concepts and frameworks is not necessarily better...
 - ▶ Minimally, there should be support for the
 - ▶ Principles and guidelines
 - ▶ Business concepts
 - ▶ Application and information concepts
 - ▶ Infrastructural / technology concepts
 - ▶ Projects and time aspects
 - ▶ And the relations between these concepts
 - ▶ ArchiMate is a good example of a relevant framework

▶ Modelling and visualizing

- ▶ support for the creation and modification of models
 - ▶ easy to use model editing functionality
 - ▶ user-friendly interface
 - ▶ good graphical interface
 - ▶ the ability to assign properties to model elements
 - ▶ importing and exporting information using open standards
 - ▶ Multi-user support
- ▶ visualise and publish (parts of) the enterprise architecture
 - ▶ easy (automatic) generation of views
 - ▶ defining new viewpoints
 - ▶ content and form
 - ▶ publish in Word and HTML, including feedback possibility
 - ▶ copy to PowerPoint
 - ▶ Export to Excel

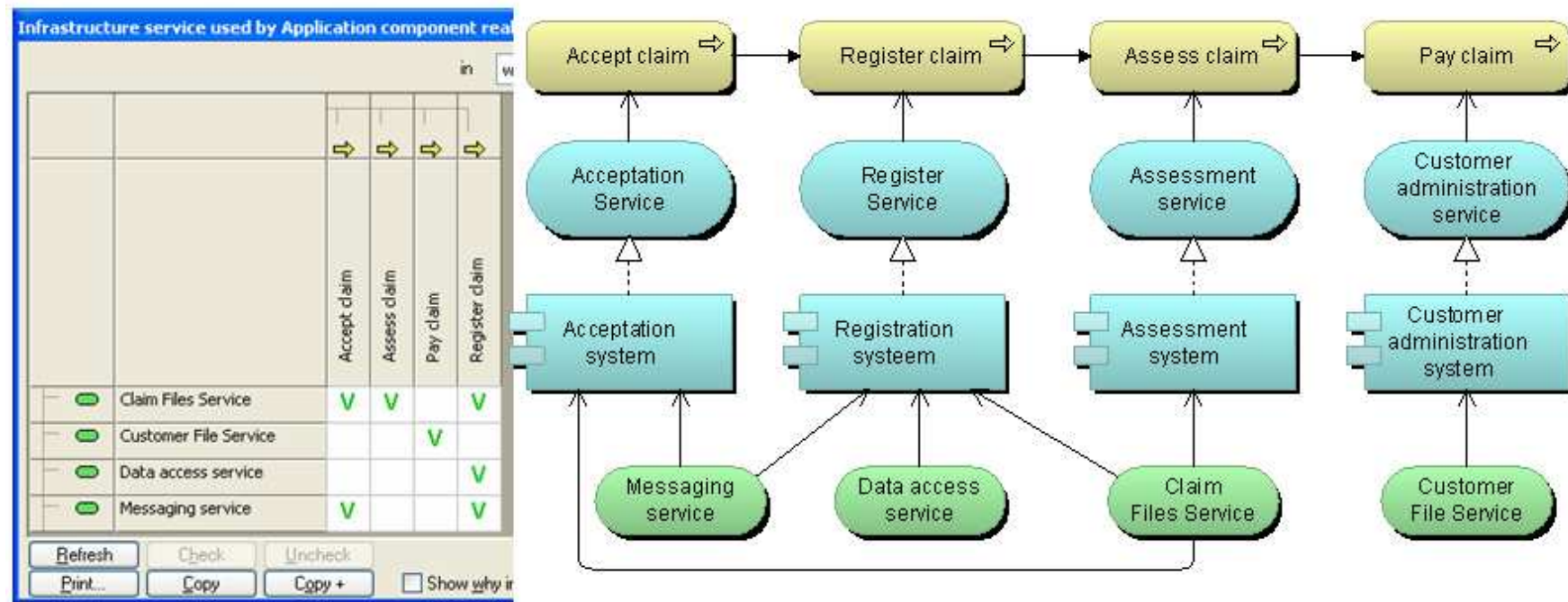
▶ Example visualization



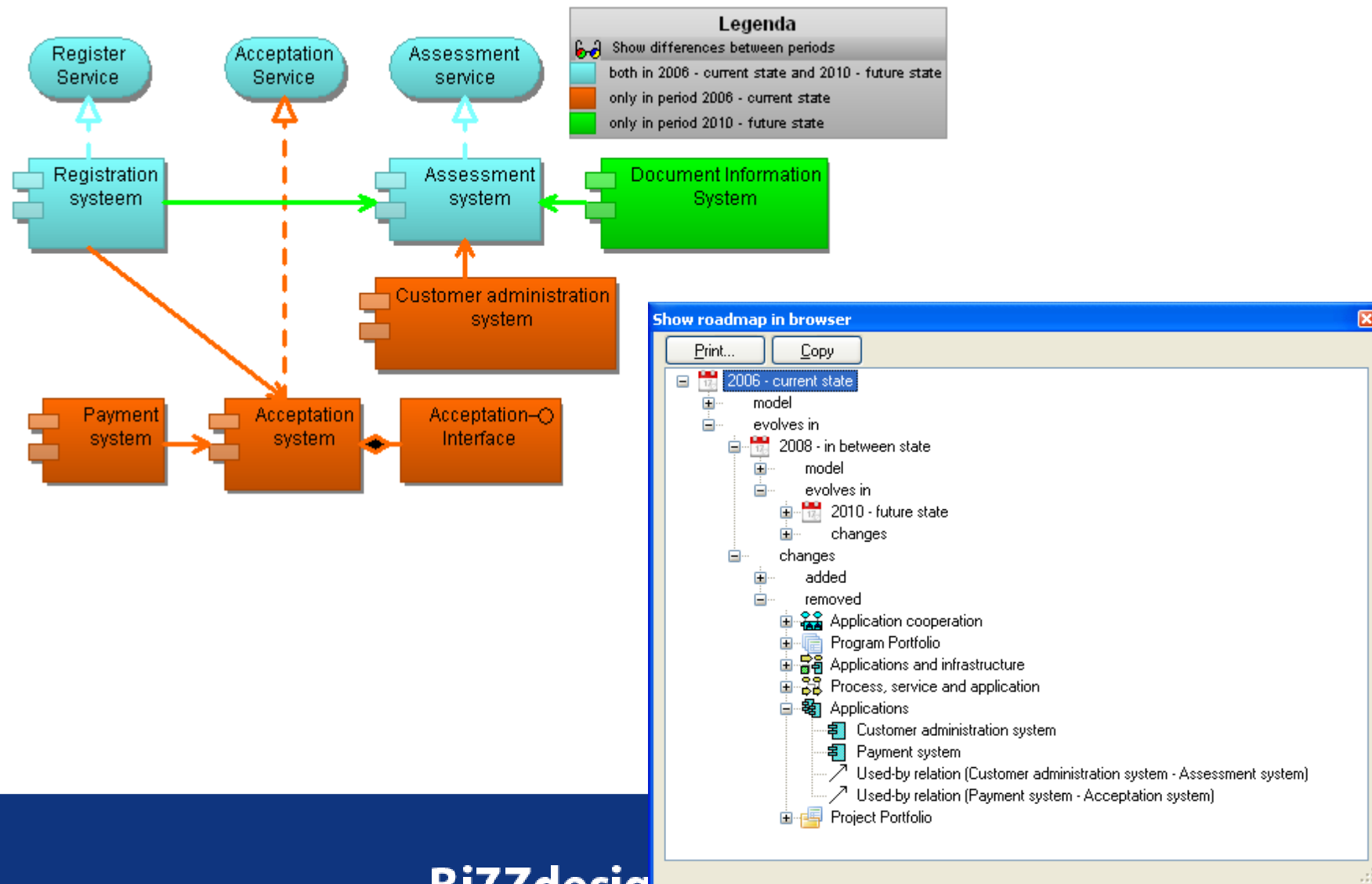
▶ Analysis of enterprise architecture

- ▶ Impact-of-change analysis
 - ▶ graphical, table, cross-domain
- ▶ Comparing views
 - ▶ reporting differences and similarities
- ▶ Comparing architectures (as-is, to-be)
 - ▶ reporting differences and similarities
- ▶ Queries
 - ▶ e.g., list all business critical processes, supported by applications that use technology services with an availability less than 99%
- ▶ Quantitative analysis
- ▶ ...

▶ Example impact analysis



▶ Example comparing architectures



▶ Repository support

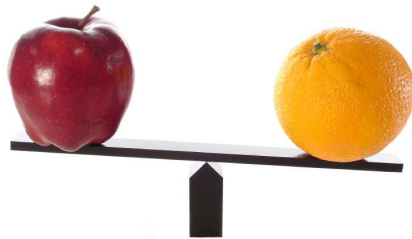
- ▶ Objects and relations should be stored in a repository
 - ▶ User management and user rights management
 - ▶ Content organization
 - ▶ Artifact sharing
 - ▶ Version management
 - ▶ Locking / check-in / check-out
 - ▶ Scalable

▶ Requirements for EA tools revisited

- ▶ What requirements are (most) important for you?
 - ▶ Framework and concepts
 - ▶ Modelling
 - ▶ Visualization
 - ▶ Analysis
 - ▶ Repository
- ▶ How are these requirements met?
 - ▶ What framework do you use?
 - ▶ What tool do you use?
 - ▶ What analysis do you need?
 - ▶ ...



Overview tools for EA

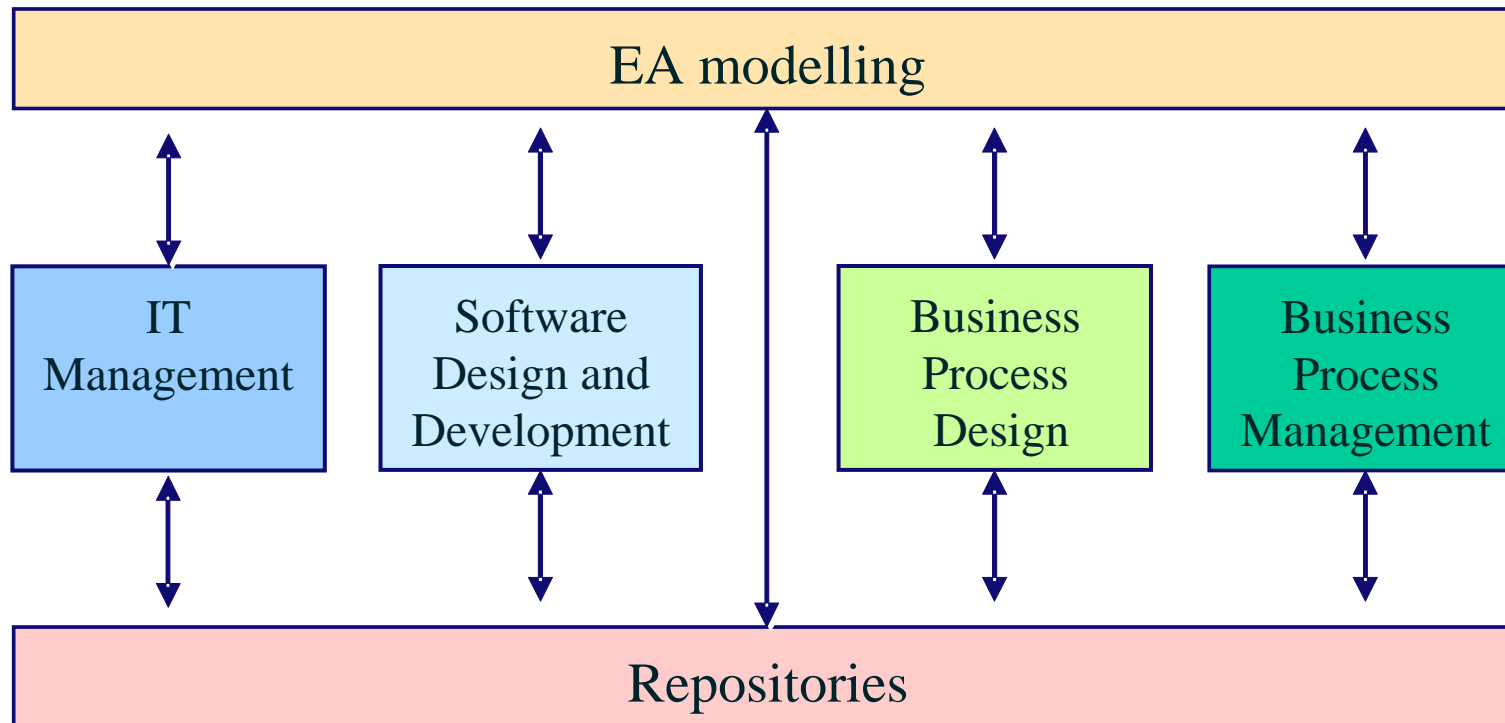


Comparing apples and oranges...

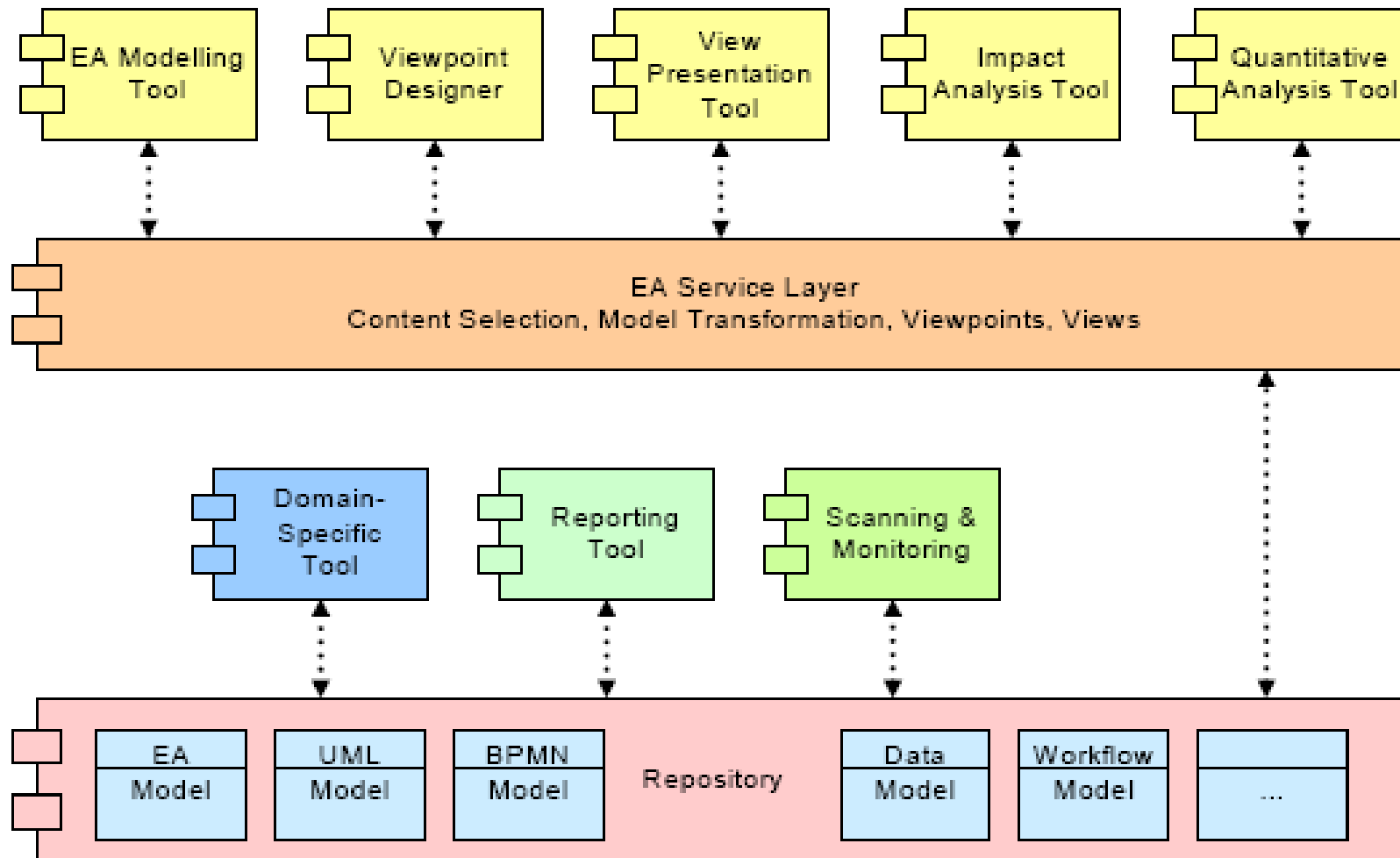


► Tools, tools, tools...

- Different types of tools exist



Components EA tools (ideal situation)



▶ Classification of tools (dangerous!)

- ▶ Enterprise architecture tools:
 - ▶ Architect (BiZZdesign);
 - ▶ Metis (Trouw);
 - ▶ System Architect (Telelogic/IBM).
- ▶ IT-management tools:
 - ▶ Metis (Trouw Technologies);
 - ▶ PlanningIT (Alphabet).
- ▶ Repositories:
 - ▶ Rochade (Allen Systems Group);
 - ▶ Adaptive.
- ▶ Software development tools:
 - ▶ Rational (IBM);
 - ▶ Enterprise Architect (Sparx systems).
- ▶ Business process design tools:
 - ▶ BiZZdesigner (BiZZdesign);
 - ▶ Corporate Modeler (Casewise);
 - ▶ ARIS (IDS Scheer);
 - ▶ MEGA (MEGA International);
 - ▶ Proforma ProVision.

Tools tend to extend their scope



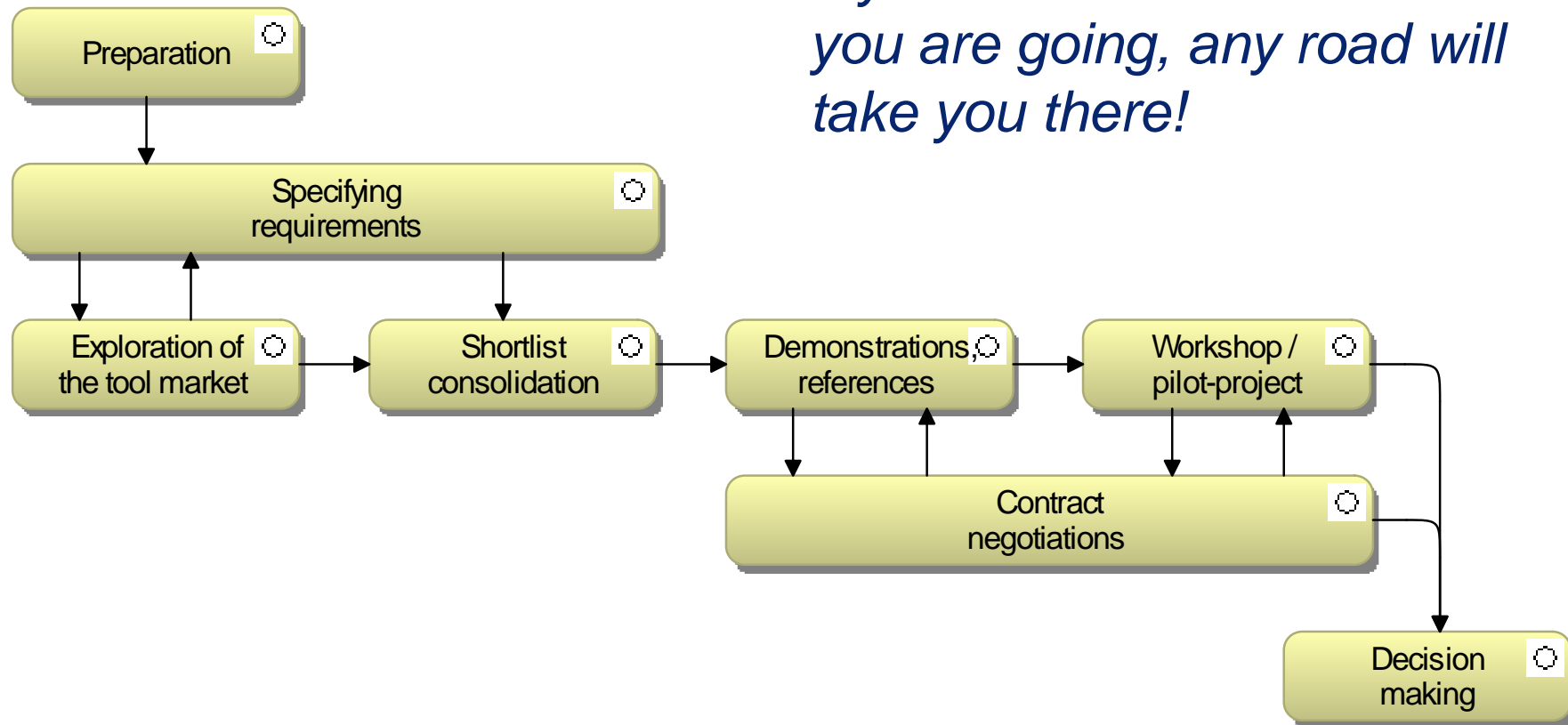
Selection of an EA Tool

How to select and implement an EA Tool



► Procedure tool selection

If you don't know where you are going, any road will take you there!



▶ 1. Preparation

Start with an analysis of current situation; identify

- ▶ the groups involved in enterprise architecture process
- ▶ the enterprise architecture areas these groups are targeting
- ▶ the maturity of the EA practice within organization
 - ▶ Measuring instruments (Gartner, DYA, BiZZdesign, etc.)
- ▶ means/tools that are used
- ▶ conventions and standards that are available
- ▶ requirements concerning possible migration of current data and models

Result: clear picture of maturity of EA practice and stakeholders

▶ 2. Specify requirements

- ▶ Identify the requirements
 - ▶ Functionality of the software package;
 - ▶ Methodology support (e.g. ArchiMate®, Togaf®)
 - ▶ Training support (tool and methodology)
 - ▶ Administration and configuration aspects
 - ▶ Technical aspects
 - ▶ Contractual aspects (i.e., licences, support, new releases, etc.)
 - ▶ Security aspects and Performance aspects
- ▶ Prioritize the requirements!!
- ▶ Take into account the maturity of the organization
 - ▶ Choose and use tool that fits the maturity level of the organisation, that does not impose severe complexity, and that can grow with the organisation tot the next maturity levels

▶ Example requirements

- ▶ Many lists of requirements are available
 - ▶ Internet, Gartner, Forrester, http://www.enterprise-architecture.info/EA_Tools.htm, etc.
 - ▶ See e.g. [Enterprise Architecture Tool Selection Guide v4.2.pdf](#)
 - ▶ Including scoring sheets, see e.g. [142242_ea_reqs_tool_matrix_v2.xls](#)
- ▶ Important: choose only those things important for your organization!

▶ 3. Exploration tool market

- ▶ Create long list of tool vendors
- ▶ Create RFI and let vendors answer the RFI
- ▶ Ask for screendumps etc. to validate answers...
 - ▶ For example, see e.g. [..\Base\111 reponse BiZZdesign rfi 700140508.pdf](#) or [..\Knorr\109 Knorr-Bremse Appendix 1.pdf](#)

▶ 4. Create short list tools

- ▶ Evaluate RFI
- ▶ Create a short list of 3 – 5 tools
- ▶ Ask additional information (if necessary)

▶ 5. Demonstrate and evaluate

- ▶ Organize demonstrations for the selected tools
 - ▶ focus on functionality important for organisation
 - ▶ Use a case
 - ▶ let participants fill in evaluation form, based on the requirements
- ▶ Visit reference sites
- ▶ Rank vendors on short list

▶ 6. Contract negotiations

- ▶ Procurement should start negotiations with the most likely candidate(s)
 - ▶ This step can also be postponed just before deciding
- ▶ Procurement should check:
 - ▶ the financial aspects such as the size of the investment, the yearly maintenance costs, estimation of the amount of necessary customization work, education costs, etc.
 - ▶ information regarding the vendor (previous experiences, continuity expectation, etc.)
 - ▶ the contractual clauses

▶ 7. Pilot / workshop

- ▶ Organize a pilot or workshop with the preferred vendor(s)
 - ▶ Use a case
 - ▶ Let “ordinary users” play with the tool
 - ▶ Create an interactive workshop of one or two days, or
 - ▶ Train some users and organize a longer pilot
 - ▶ Acquire information on configuration, conventions, implementation, etc. during the pilot

▶ 8. Decide

- ▶ Create a document for management to decide on EA tool

And start implementing the tool...



Some best practices on starting with EA and tools



▶ Steps to take introducing EA and tools

- ▶ Start pilot enterprise architecture
 - ▶ case should realize a quick win; small investment creates added value; buy in support from management
- ▶ Match concepts and describe current architecture
 - ▶ Use framework/language in organization; describe current architecture(s)
- ▶ Create coherence within the architecture
 - ▶ Create relations within the architecture; create *enterprise* architecture
- ▶ Organise the architecture effort within your organization
- ▶ Use architecture for future situations

▶ Think big, start small...

- ▶ Select concepts and relations from metamodel
 - ▶ Not everything at the same time: just in time, just in place
 - ▶ On which parts is information available?
 - ▶ What do you need to answer the questions from your organization?
 - ▶ Divide the use of concepts and relations in time
- ▶ Define criteria for the selection and use of concepts
 - ▶ Learn from others (best practices)
 - ▶ Go visit other companies