



Business Requirements as the Basis for Enterprise Architecture and Project Architectures

Essen, Germany, April 07-10, 2014

REFSQ
20th Intl. Working Conference
on Requirements Engineering:
Foundation for Software Quality **2014**

Harmen van den Berg

And the speaker is...

- Harmen van den Berg
 - Manager BiZZdesign International
 - Trainer for ArchiMate and TOGAF training courses
 - Speaker at conferences like LAC, EAC, EAM, Open Group



Let's get to know each other!



Raise your hand:

- Who is familiar with TOGAF?
- Who is TOGAF certified?
- Who is familiar with ArchiMate?
- Who is using ArchiMate?
- Who is ArchiMate certified?
- Who just discovered he or she is in the wrong room?....

Proposed schedule

- Introduction
- The need for BRM
- EA and ArchiMate
- Modeling BRM
- Analyzing BRM
- The process for BRM
- Conclusions



BiZZDESIGN: BUILDING STRONG ORGANIZATIONS!

A banner image featuring a city skyline at night with lights reflecting on water. On the right side, there is a graphic of a blue target with a white bullseye and a blue arrow hitting the center. The title text is overlaid on the left side of the banner.

BiZZdesign: Building Strong Organizations!

- Organizations increasingly need to deal with *business improvements and transformations* in a complex business reality. BiZZdesign believes that organizations should have the *change capabilities* to improve their business to realize their mission.
- BiZZdesign enables these improvements and improvement capabilities by providing *integrated solutions* consisting of *design tools, training, business consultancy, and best practices*.
- Our integrated solutions are based on community-based *innovation and open standards*, and are executed by experienced BiZZdesign *professionals* who are passionate about *improving and empowering* organizations.

Service lines BiZZdesign

Drive improvements with better decisions aligned on strategy, design, and implementation level:

- Business Model Management
- Enterprise Architecture Management
- Business Process Management
- Lean Management
- Governance, Risk and Compliance



Each service line consists of proven and easy to use software tools, best practice models and methods, training, and business consultancy

Modules BiZZdesign Tool Suite

- Modules for modeling, visualizing and analyzing
 - Business models based on the *Business Model Canvas*
 - Enterprise architecture based on *ArchiMate* and *TOGAF*
 - Requirements based on *ArchiMate*
 - Process models based on *BPMN* and *Amber*
 - Process logic based on *The Decision Model*
 - Process improvement based on *Lean*
 - Data modeling based on *UML* and *ERD*
- With one underlying repository
 - Including relations between the various models
- With various publication possibilities
 - Publication to Html, Word, pdf, publication portal InSite, Wiki



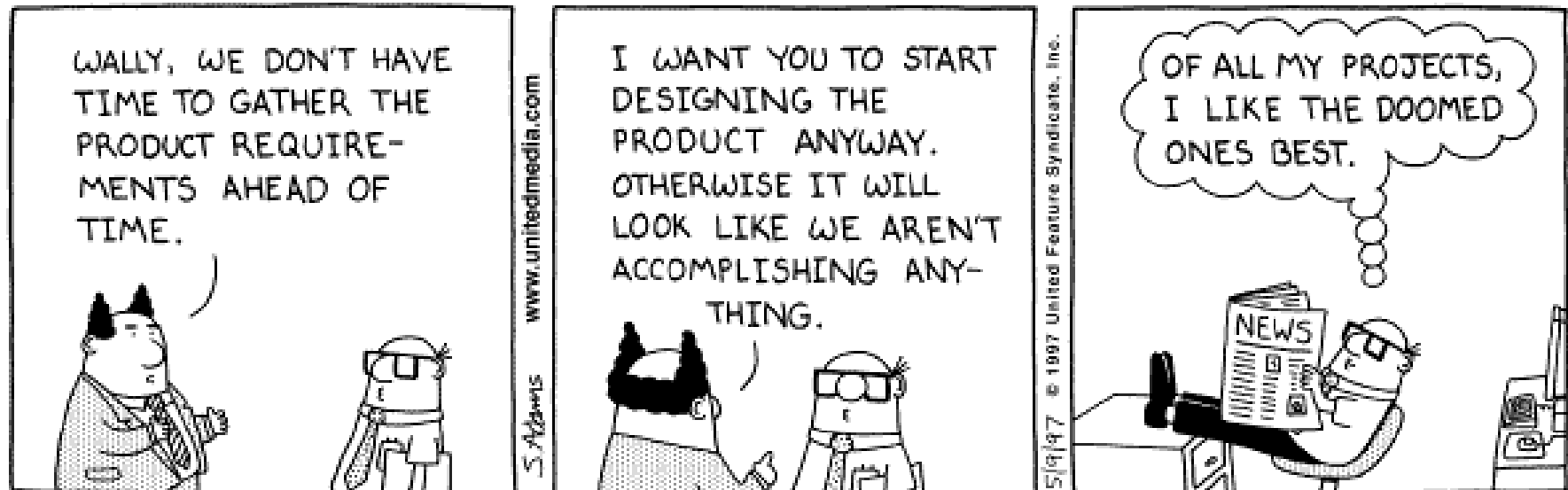
WHY BUSINESS REQUIREMENTS MANAGEMENT?

Requirements...



dilbert.com

Why BRM?



dilbert.com

- Actually we know it is important
 - But do we make a (serious) effort?
 - And is this effort done right?

“Why” is the reason!

- In general, only the solution (architecture, process, ..) is modeled, and not the underlying *intentions*, like goals and requirements ...
 - Why do we need this change, what is the real problem?
 - Who are the stakeholders, what do they want?
 - How do different stakeholder goals influence each other?
 - How are goals translated into requirements?
 - Can we support all business requirements?
 - Why this solution and not another one?





How the customer explained it



How the Project Leader understood it



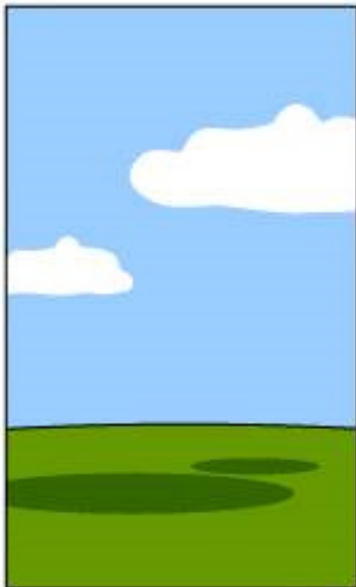
How the Analyst designed it



How the Programmer wrote it



How the Business Consultant described it



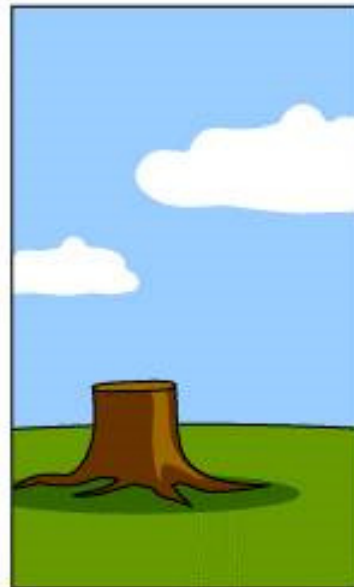
How the project was documented



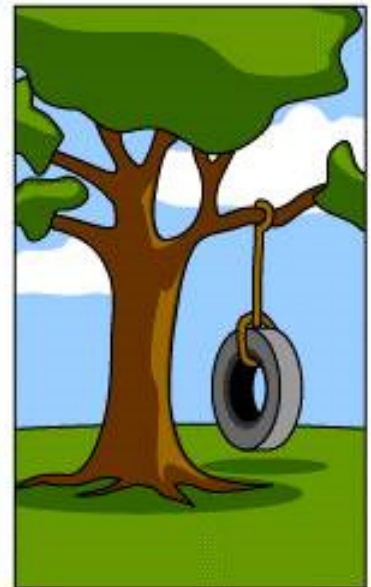
What operations installed



How the customer was billed



How it was supported



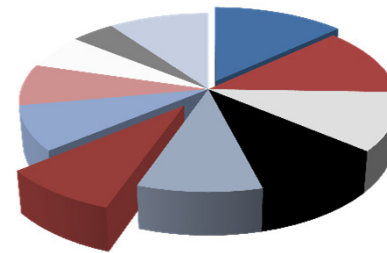
What the customer really needed

The Standish Group: CHAOS REPORT

Impaired projects

Project *Impaired* Factors

1. Incomplete Requirements 13.1%
2. Lack of User Involvement 12.4%
3. Lack of Resources 10.6%
4. Unrealistic Expectations 9.9%
5. Lack of Executive Support 9.3%
6. Changing Requirements & Specifications 8.7%
7. Lack of Planning 8.1%
8. Didn't Need It Any Longer 7.5%
9. Lack of IT Management 6.2%
10. Technology Illiteracy 4.3%



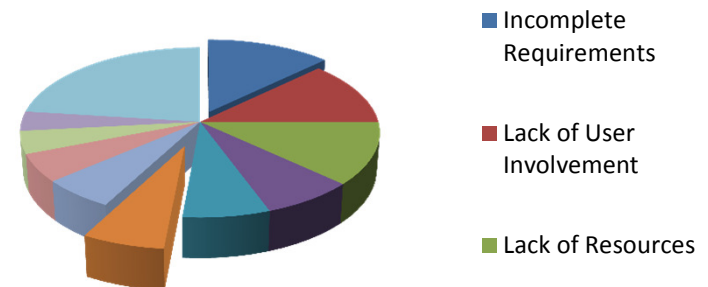
- Incomplete Requirements
- Lack of User Involvement
- Unrealistic Expectations
- Changing Requirements & Specifications

The Standish Group: CHAOS REPORT

Project *Challenged* Factors

1. Lack of User Input 12.8%
2. Incomplete Requirements & Specifications 12.3%
3. Changing Requirements & Specifications 11.8%
4. Lack of Executive Support 7.5%
5. Technology Incompetence 7.0%
6. Lack of Resources 6.4%
7. Unrealistic Expectations 5.9%
8. Unclear Objectives 5.3%
9. Unrealistic Time Frames 4.3%
10. New Technology 3.7%

Challenged projects

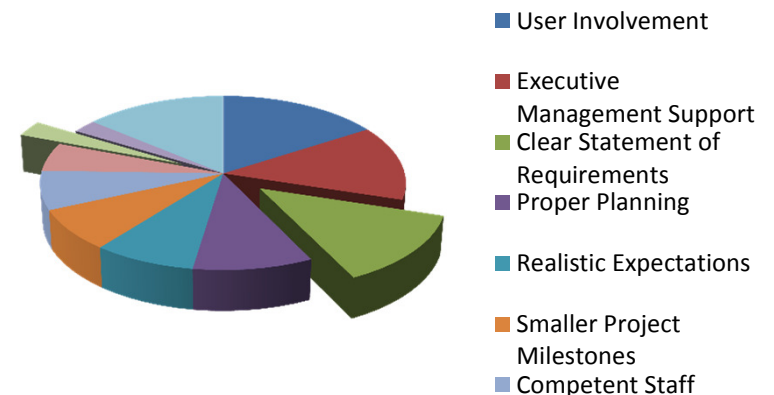


The Standish Group: CHAOS REPORT

Project *Success* Factors

1. User Involvement 15.9%
2. Executive Management Support 13.9%
3. Clear Statement of Requirements 13.0%
4. Proper Planning 9.6%
5. Realistic Expectations 8.2%
6. Smaller Project Milestones 7.7%
7. Competent Staff 7.2%
8. Ownership 5.3%
9. Clear Vision & Objectives 2.9%
10. Hard-Working, Focused Staff 2.4%

IT PROJECT SUCCESS FACTORS



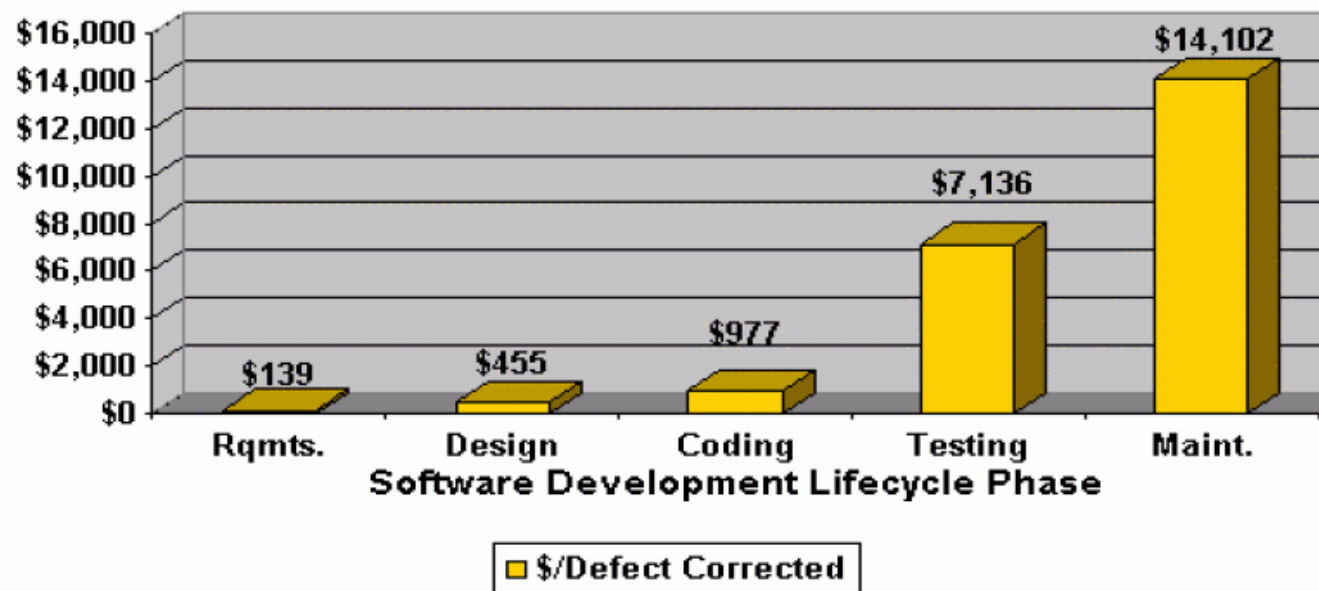
Why BRM?

“No other part of the work so cripples the resulting system if done wrong.”

[F.P. Brooks, No silver bullet: Essence and accidents of software engineering]

Costs of Correcting Defects

Source: B. Boehm and V. Basili, "Software Defect Reduction Top 10 List," *IEEE Computer*



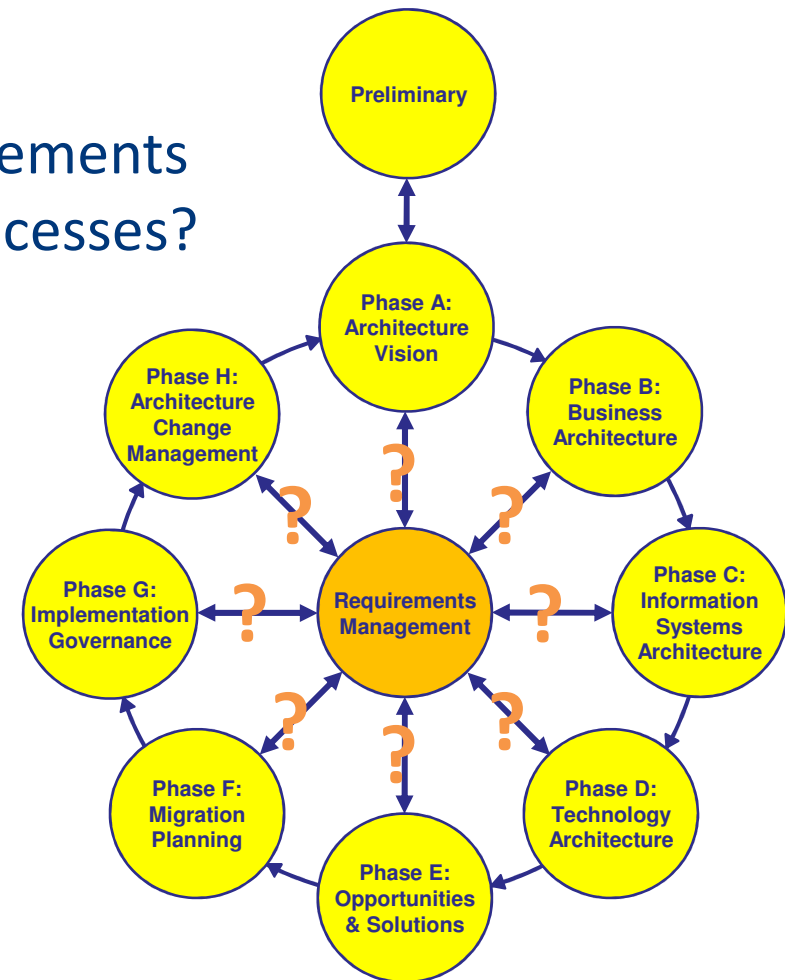
Issue: Long requirements lists

- Large documents
- Lack of structure – hidden relationships
- Lack of overview and insight
- Difficult to analyse
 - Is the set of requirements complete?
 - Do I have the right requirements?



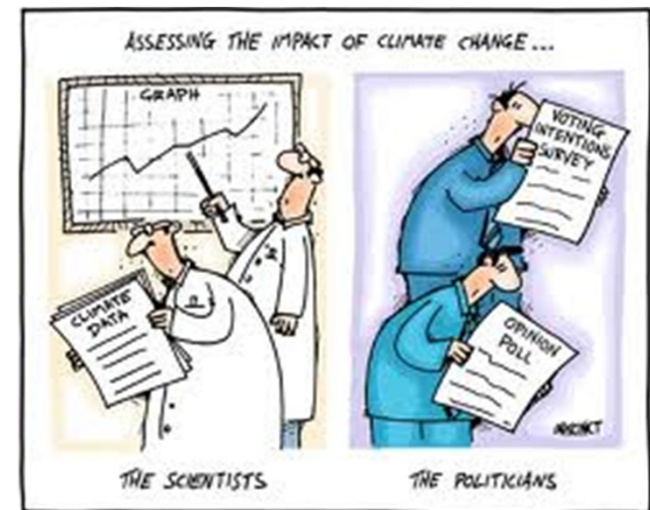
Issue: 'Anchor' requirements in architecture

- How can I relate business requirements to architecture and business processes?
 - Methodological support
 - Modelling support
- How can I show that the architecture and its processes satisfy the concerns and goals of the stakeholders?



Issue: Impact of change

- What is the impact of changing business goals and requirements on the architecture?
- What is the impact of changes in the architecture on the business goals and stakeholders?





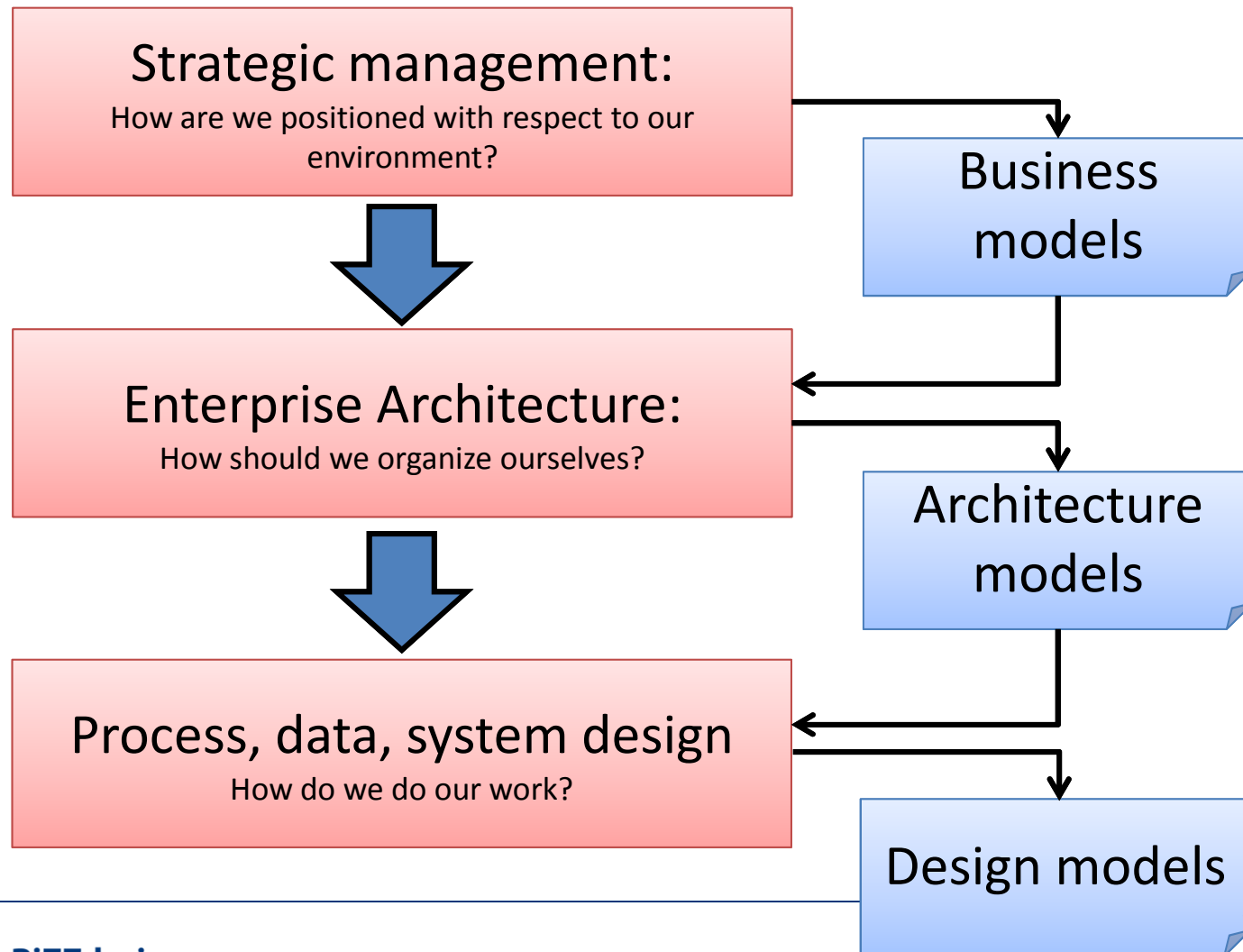
Business Requirements Management



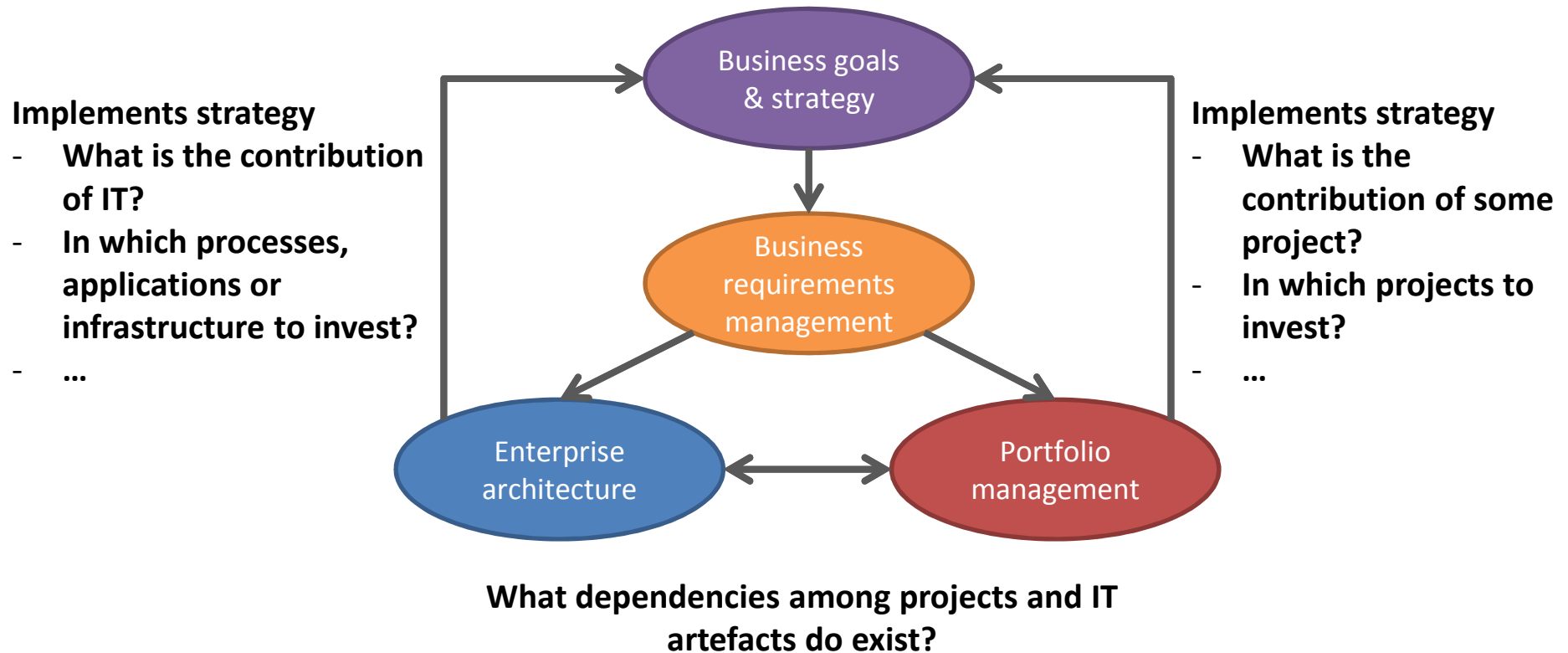
- Business Requirements
 - The (business) goals of the stakeholders in an organization
 - The requirements for the organization (processes, people, IT) in order to achieve these goals
- Business Requirements Management all activities
 - To identify, analyze, specify and validate business requirements
 - To realize traceability between stakeholders, goals, requirements and artifacts of the organization (described in architectures and processes)
 - To share and communicate business requirements

ENTERPRISE ARCHITECTURE AND ARCHIMATE

Architecture and design models

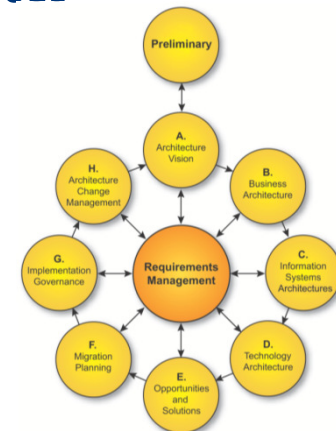
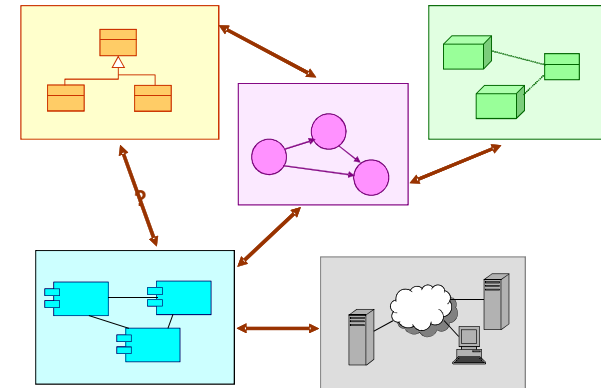


BRM, EA and portfolio management



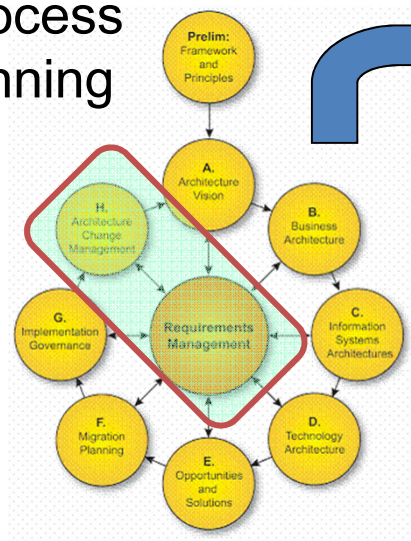
What is Enterprise Architecture?

- *A discipline*, with the objective of steering changes
- *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
- *A process*
 - Way of working
 - Aimed at the development and use of enterprise architectures within an enterprise
 - With people and resources

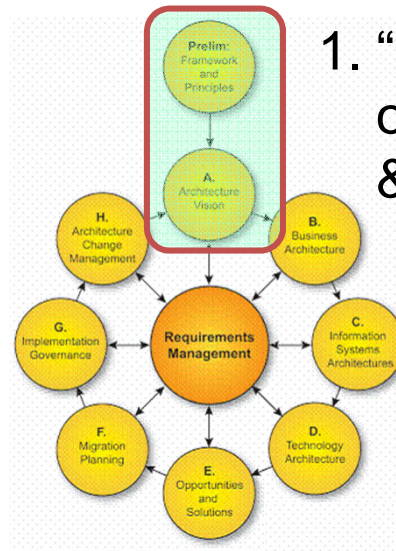


Summary of the TOGAF ADM

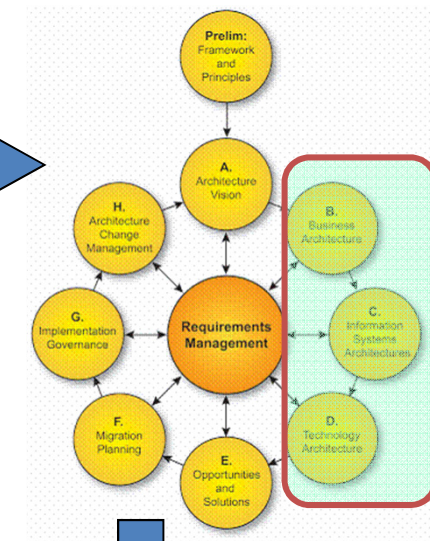
4. “Keep the process running”



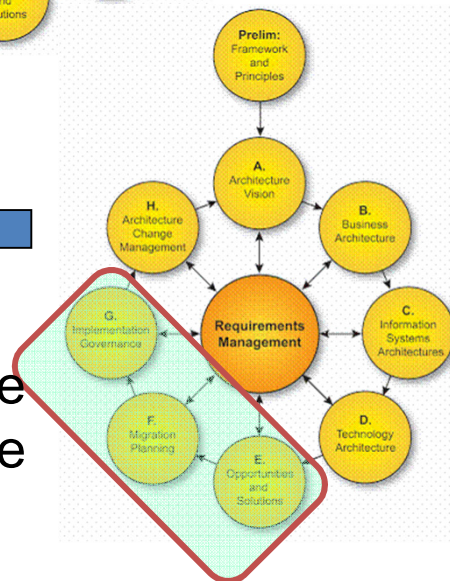
1. “Getting the organization committed & involved”



2. “Getting the architecture right”



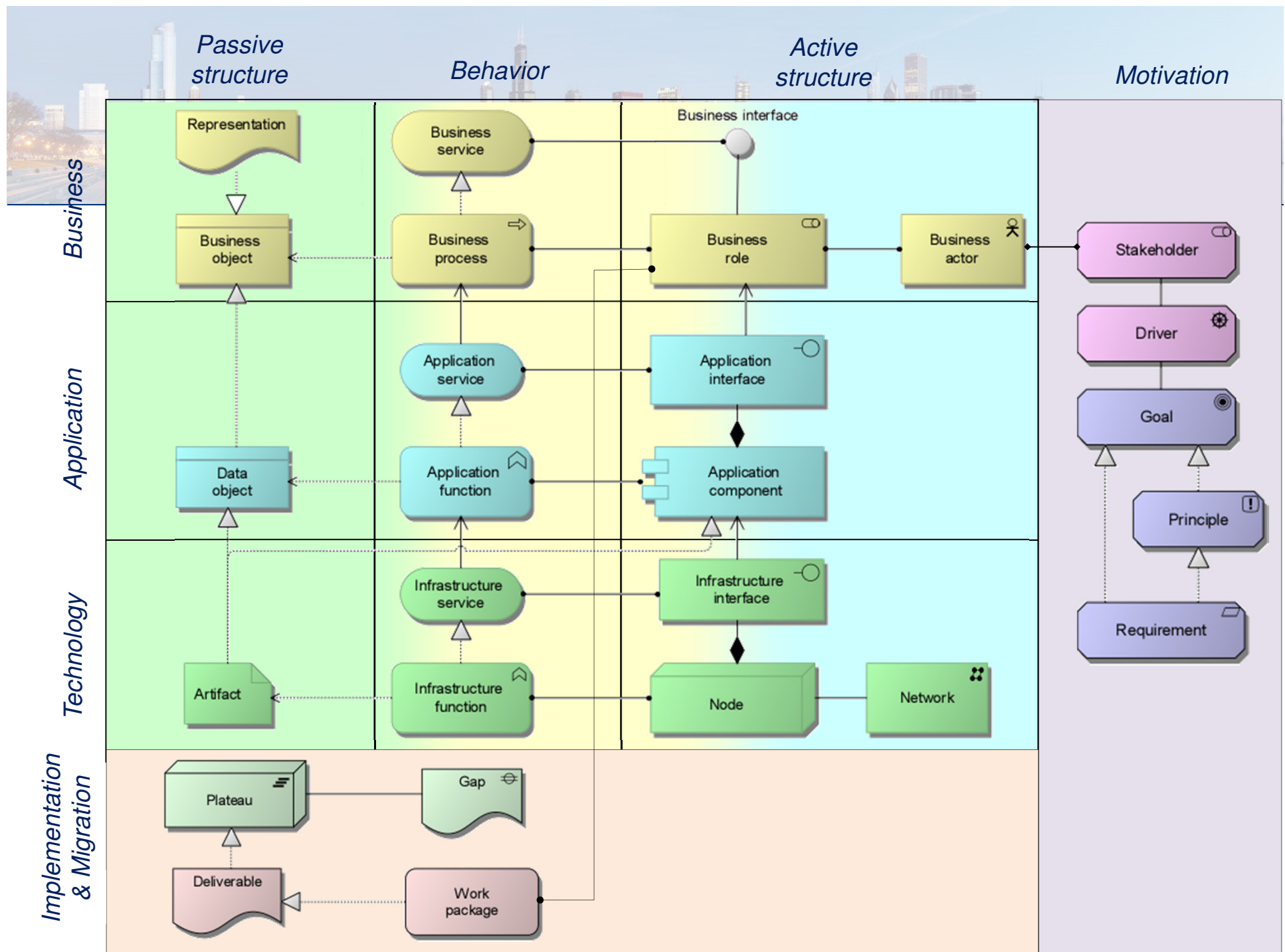
3. “Making the architecture work”





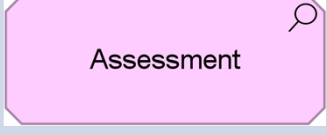
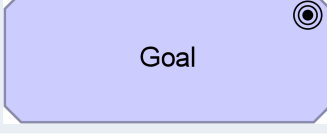


ArchiMate

- Language for describing enterprise architecture
- Covers business, application and technology
 - With relations between these layers
- Extensions for
 - Motivation
 - Migration and implementation
- 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



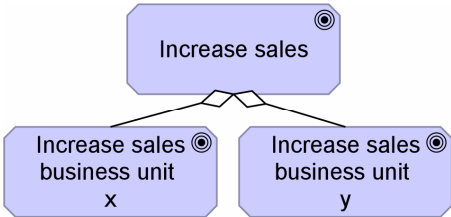
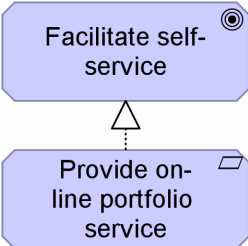
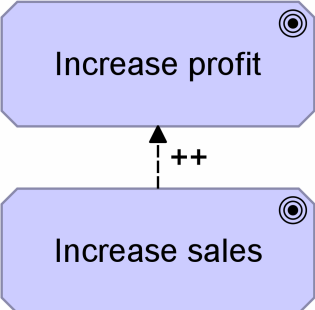


ArchiMate Motivation Extension

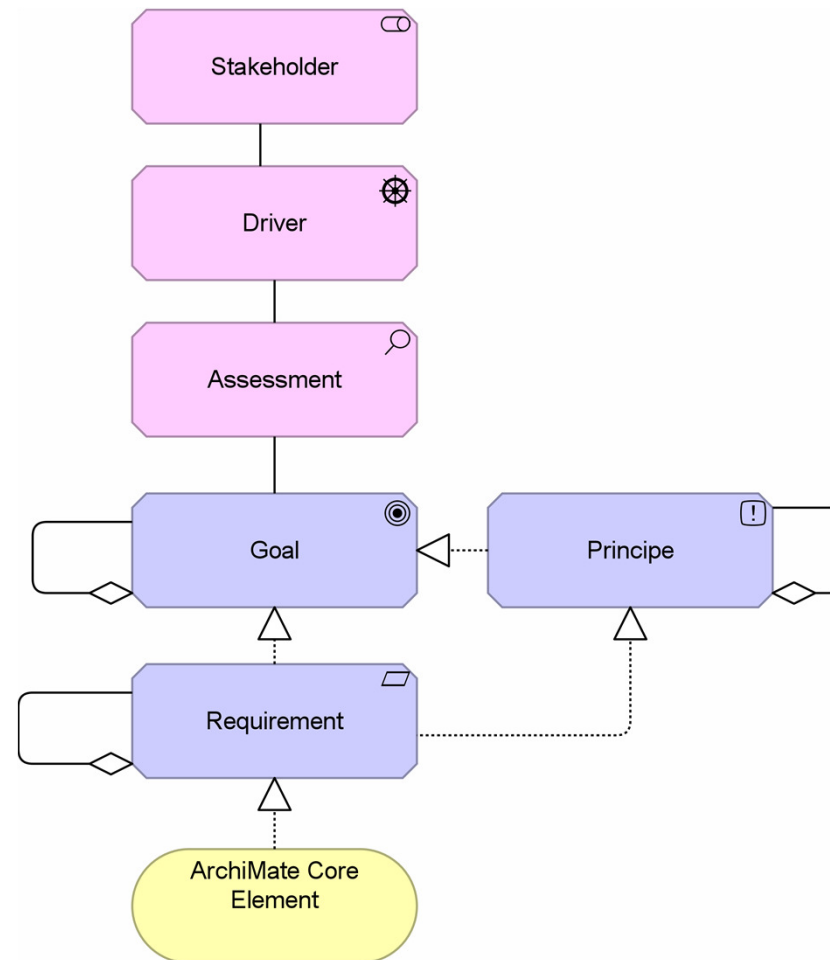
Concept	Definition	Example
 Stakeholder	The role of an individual, team or organization that represents their interests in, or concerns relative to the outcome of the architecture	Customer
 Driver	Something that creates motivates and fuels the change in an organization	Profit
 Assessment	The outcome of some analysis of some driver	Profit is low
 Goal	An end state that a stakeholder wants to achieve	Increase profit
 Requirement	A statement of need that must be realized by a system	Provide online portfolio service
 Principle	A normative property of all systems in a given context or the way in which they are realized	Systems should be customer facing



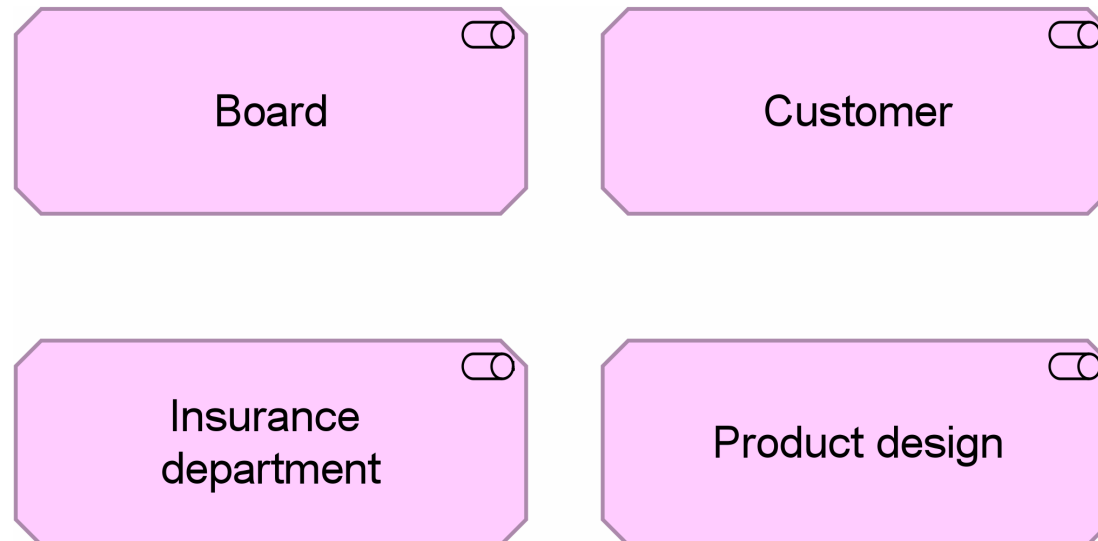
Relationships

Relation	Definition
 <pre> graph TD A[Increase sales] --- B[Increase sales business unit x] A --- C[Increase sales business unit y] </pre>	The decomposition relationship models that some goal or requirement is divided into multiple intentions
 <pre> graph TD A[Facilitate self-service] -.-> B[Provide on-line portfolio service] </pre>	The realization relationship models that some end is realized by some means
 <pre> graph TD A[Increase profit] -.-> B[Increase sales] </pre>	The influence relationship models that some goal or requirement has a positive or negative influence on another goal or requirement

Modeling and analyzing requirements

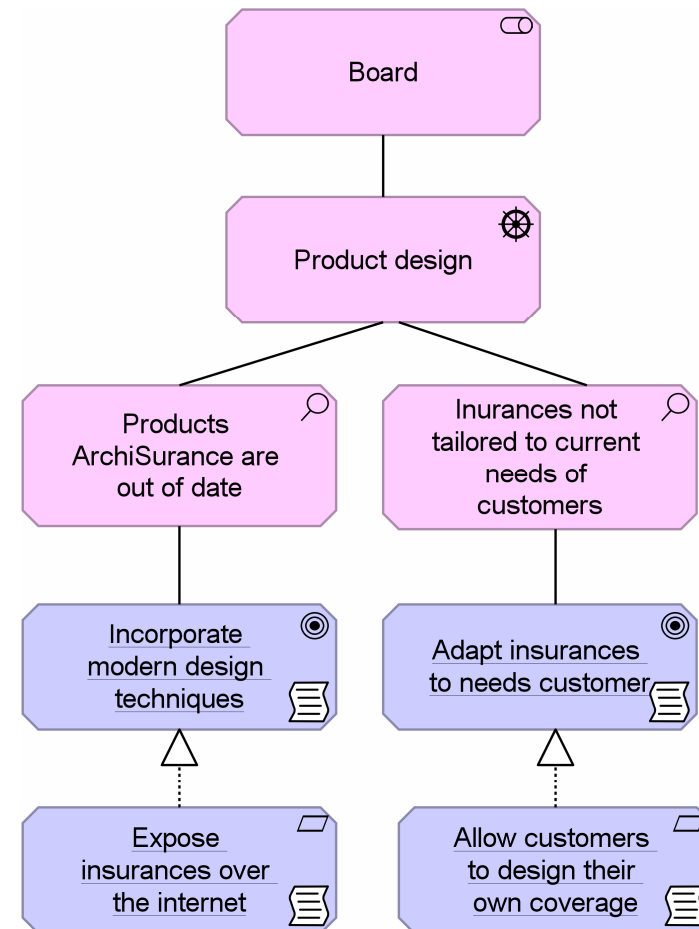


Modeling stakeholders

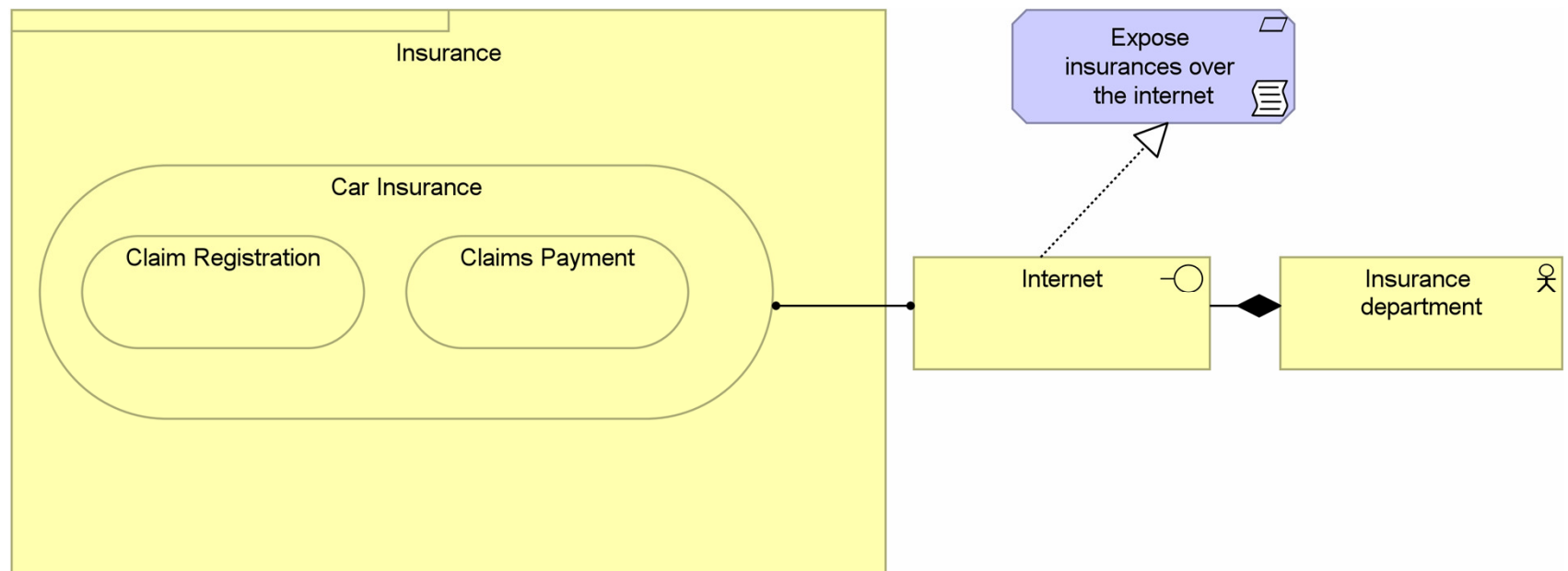


Modeling goal refinement

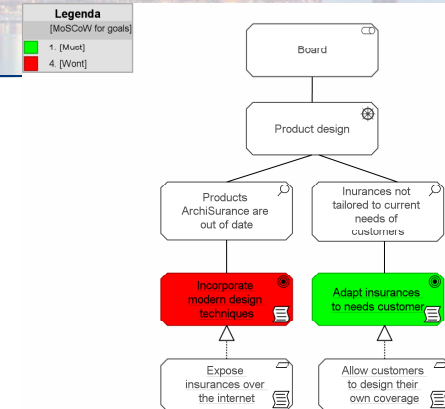
- Realize traceability between stakeholders, business goals and business requirements



Modeling requirement realization



Some examples of analysis of BRM and EA



- Traceability
 - Between stakeholders and requirements
 - Between requirements and stakeholders
 - Between requirements and enterprise architecture
 - Between enterprise architecture and requirements
- Compliance
 - Is the architecture compliant with business requirements and concerns of stakeholders
- Completeness
 - Is every requirement realized in the architecture
 - Can every architecture artifact related to a requirement

[Architecture x requirements]

	Internet	Car Insurance	Insurance design	ArchiMate Conf
Expose insurances over the int...	✓	✓	✓	
Requirement			✓	

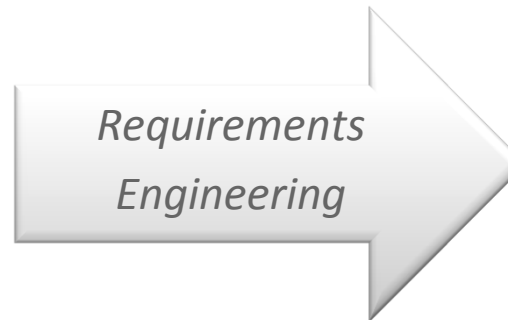


THE PROCESS FOR BRM

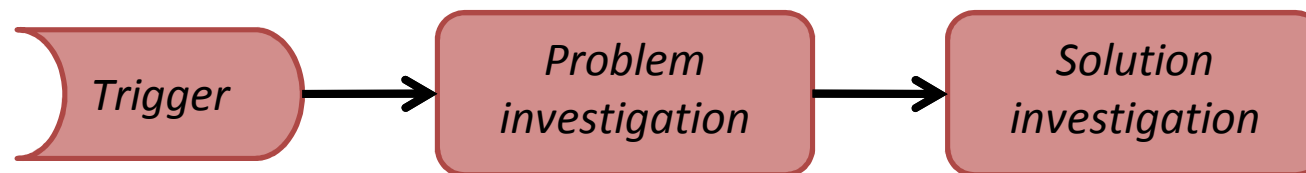
BRM – the process



Problem

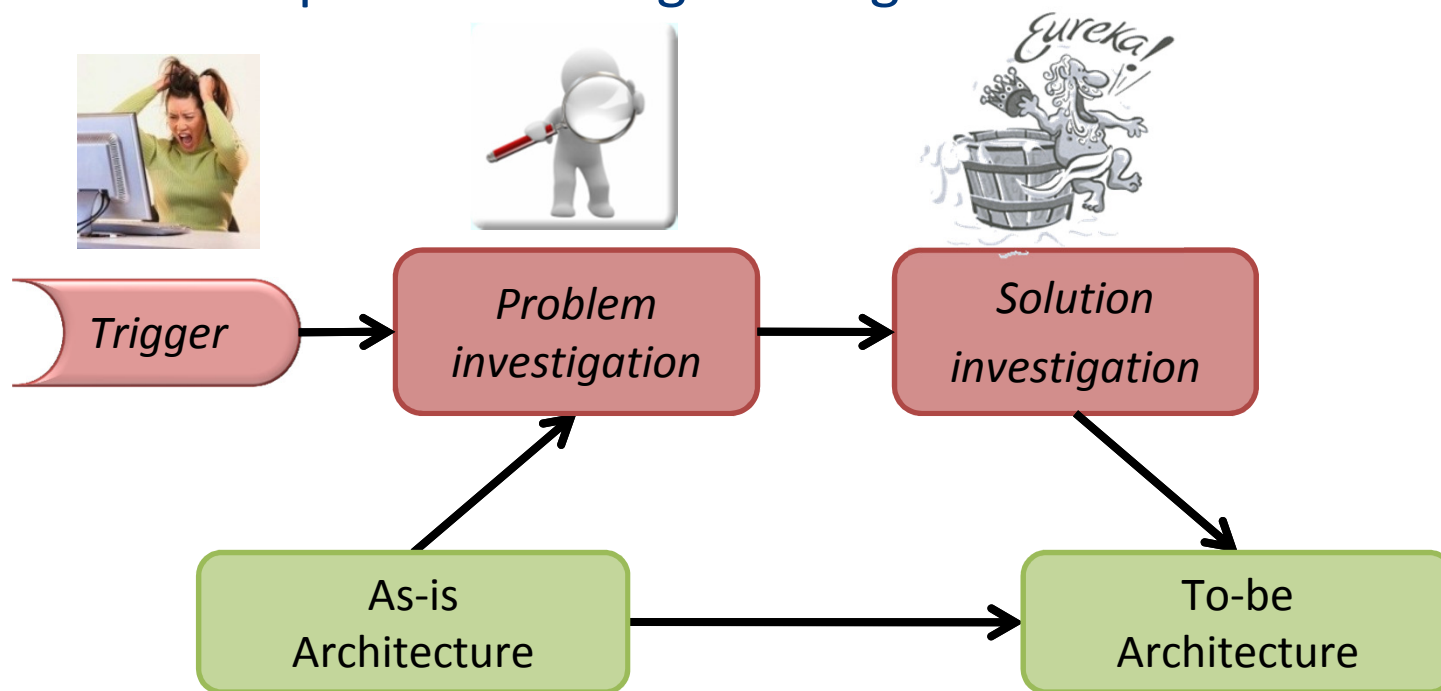


Solution



BRM and EA

- Starting point for requirements engineering
- Result of requirements engineering

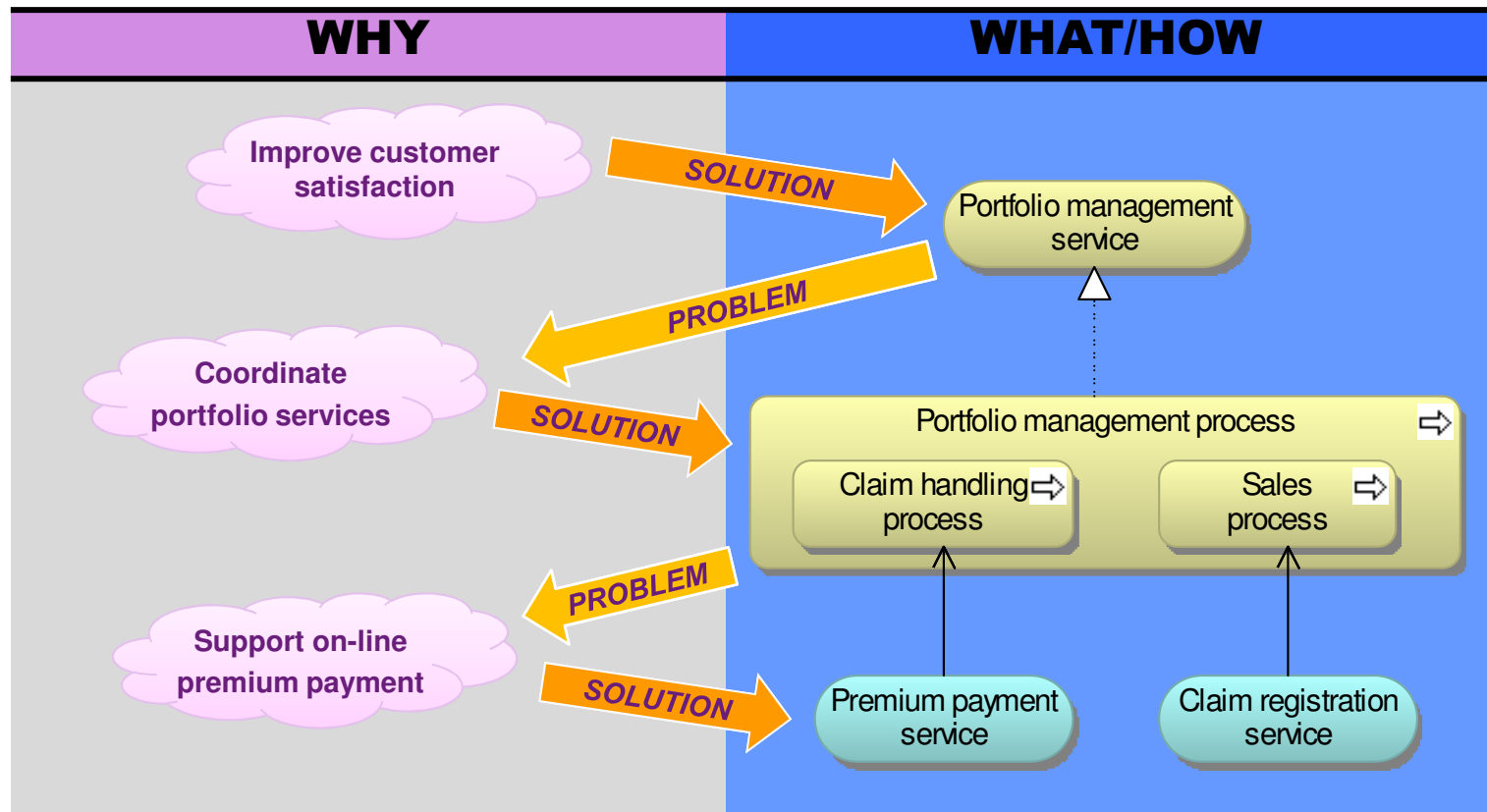


Problem chains

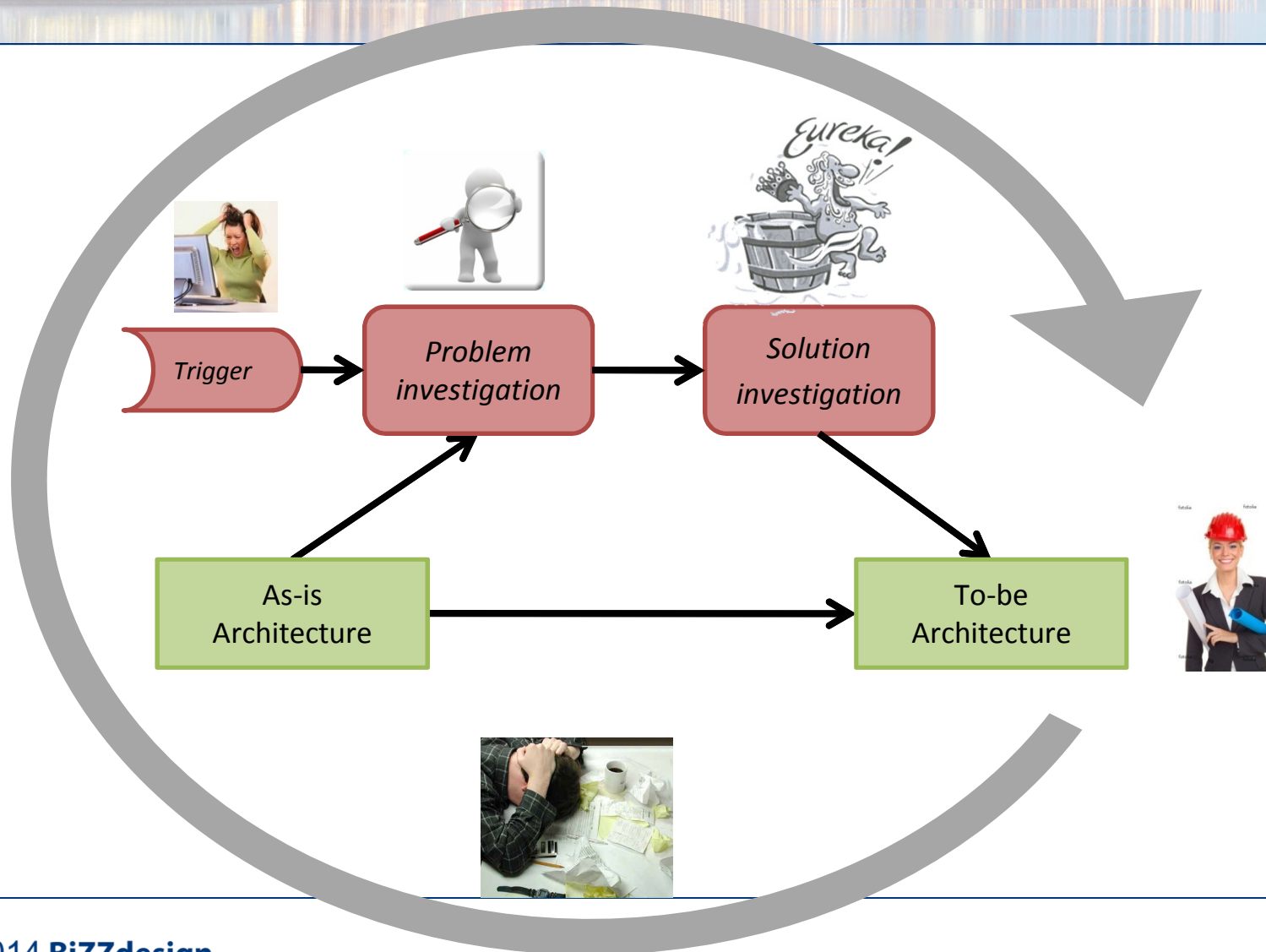


*“The solution for one,
is the problem for another one”*

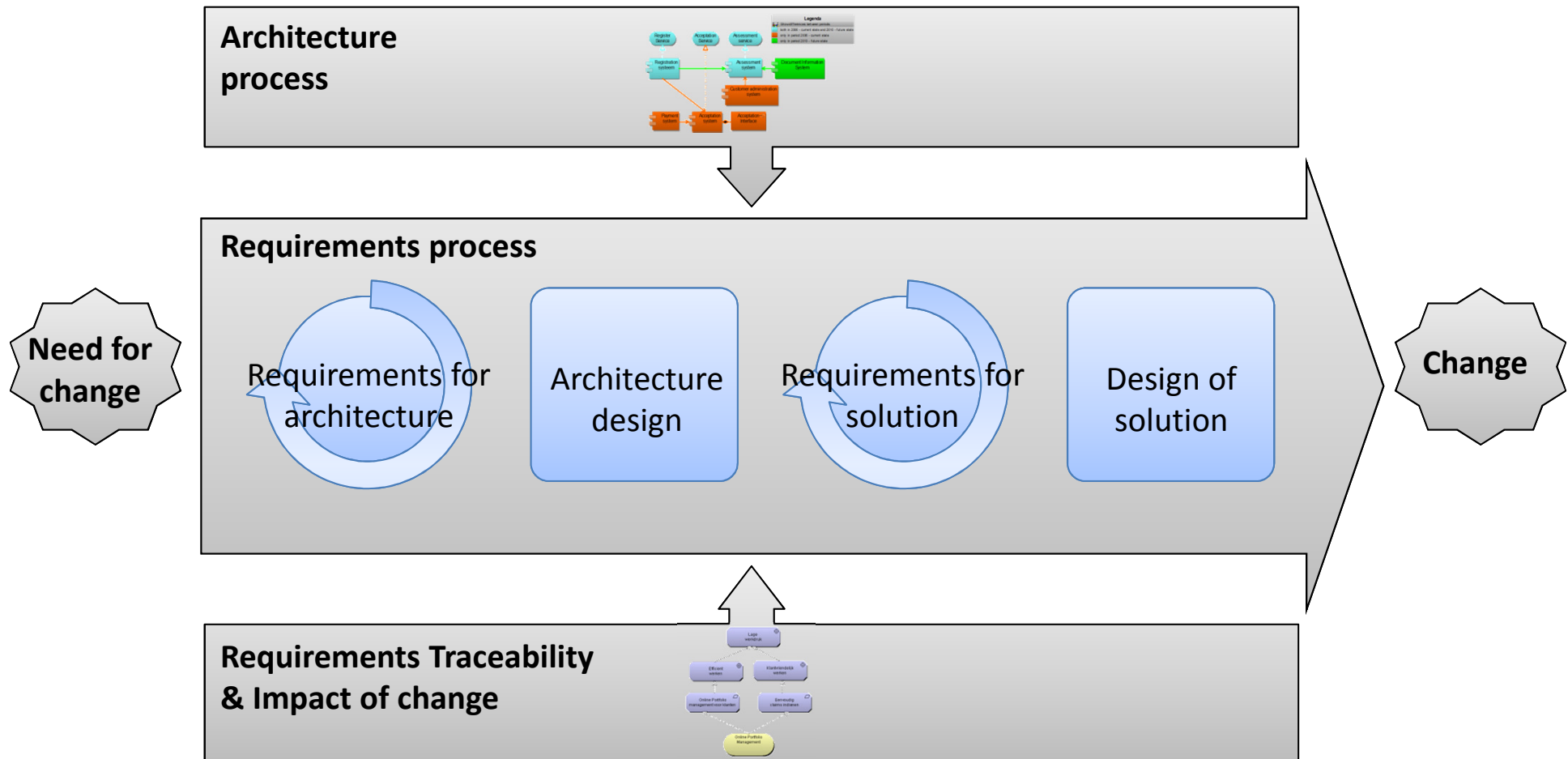
Requirements and Architecture process



Iteration

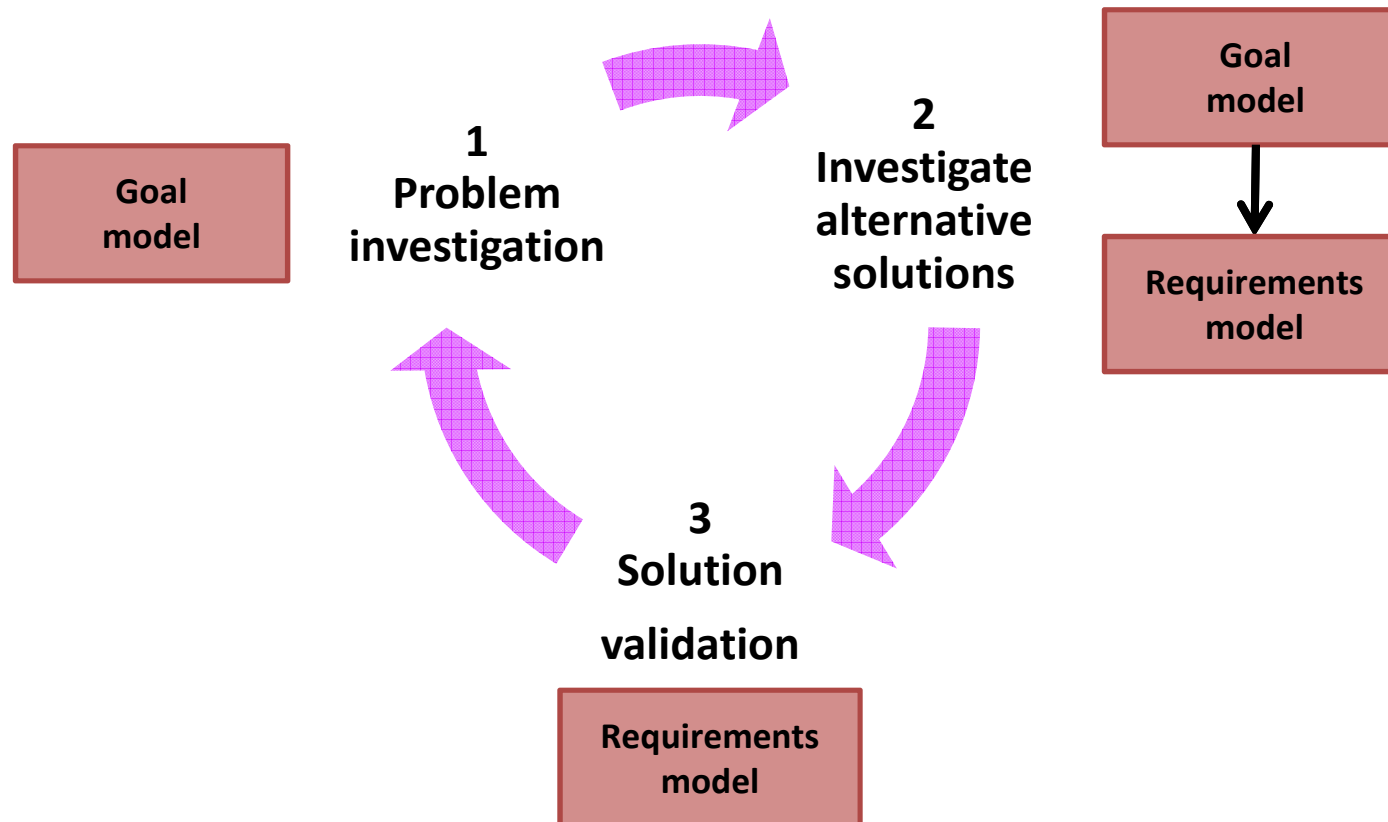


Requirements Management Process

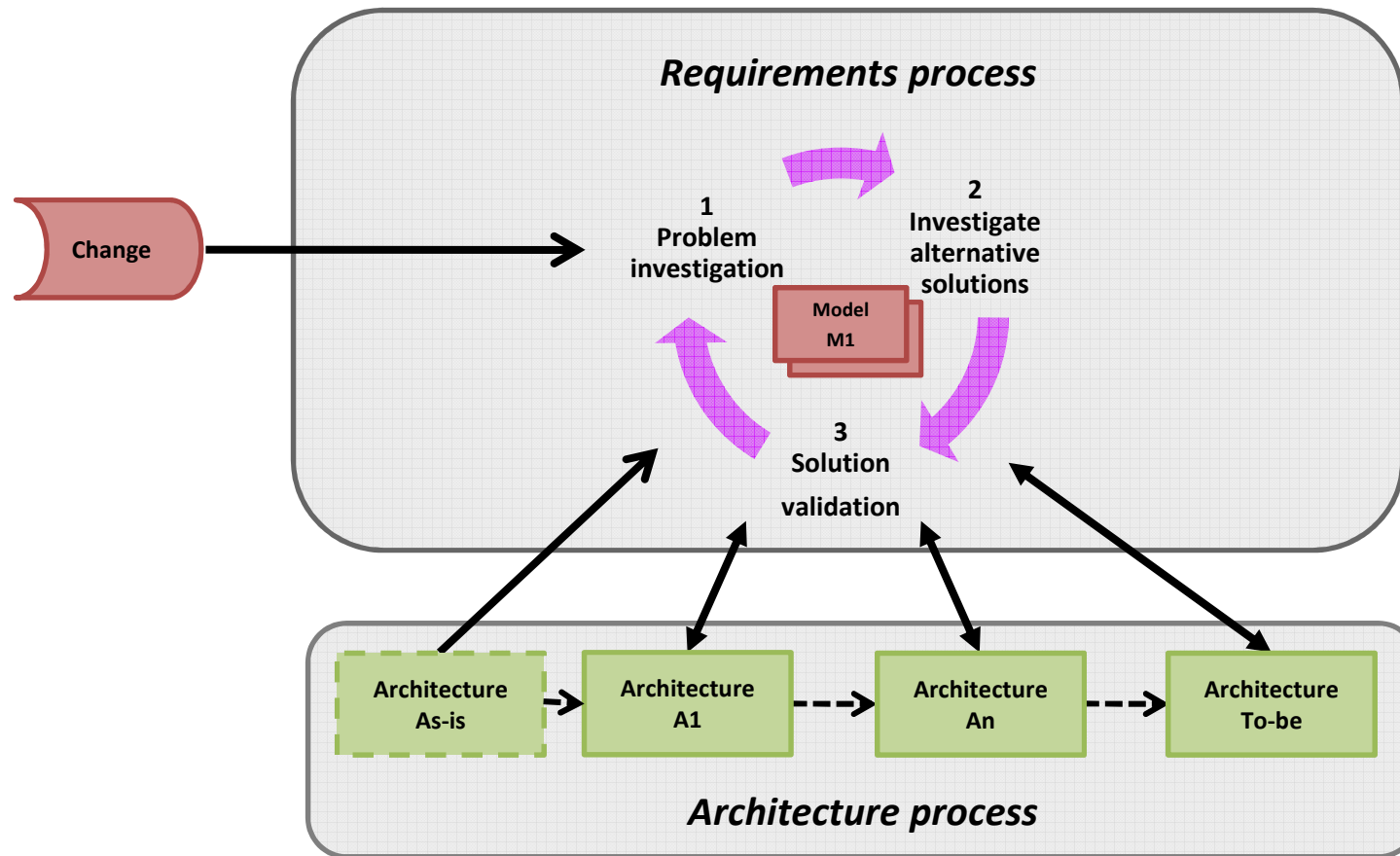


Requirements engineering cycle

- 'Solution investigation' in two steps

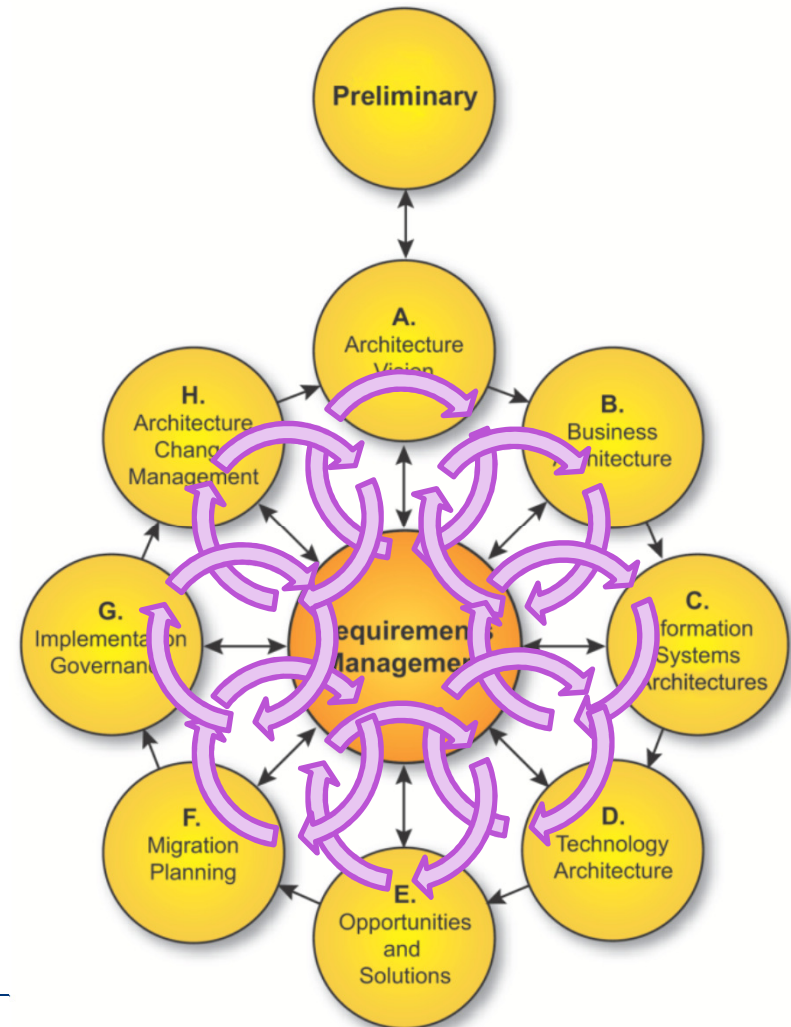


Requirements engineering cycle



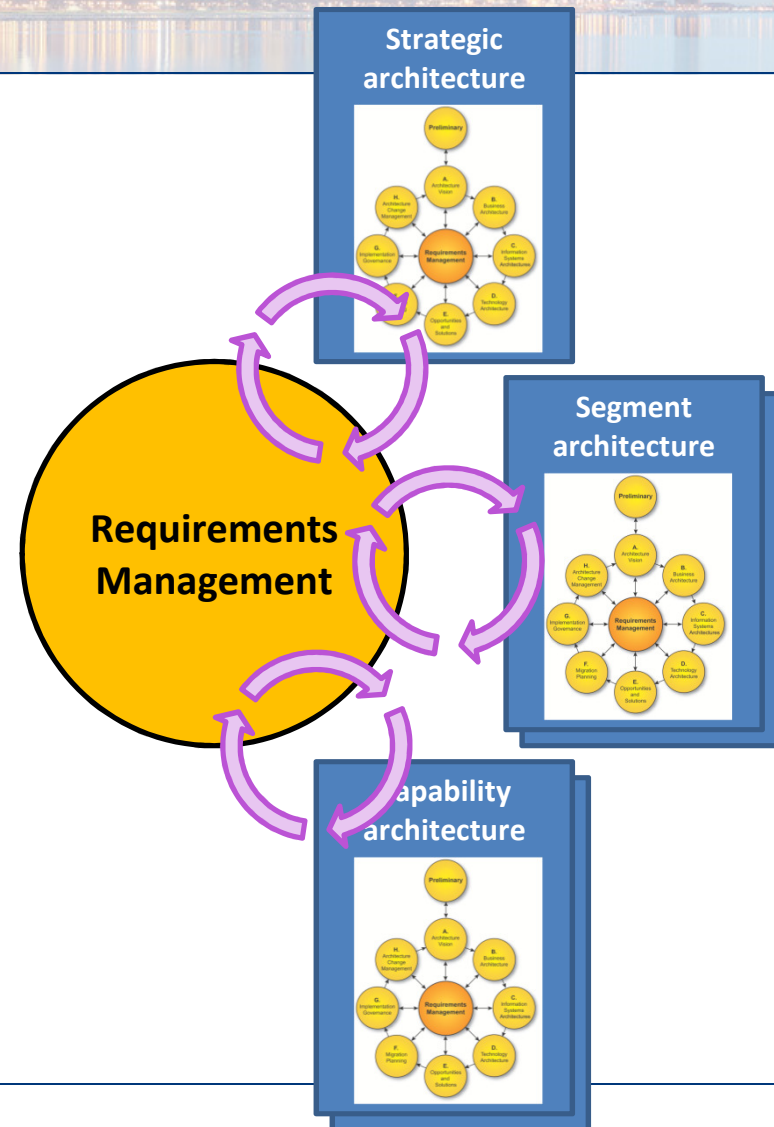
Support for BRM - Method

- Method
 - Requirements Engineering Cycle
 - Relation to TOGAF



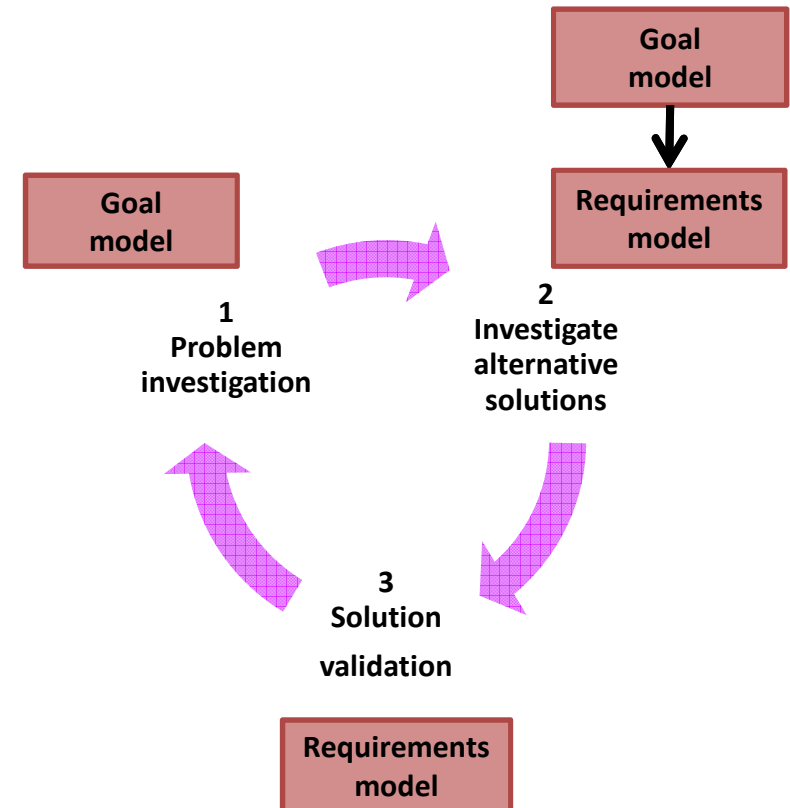
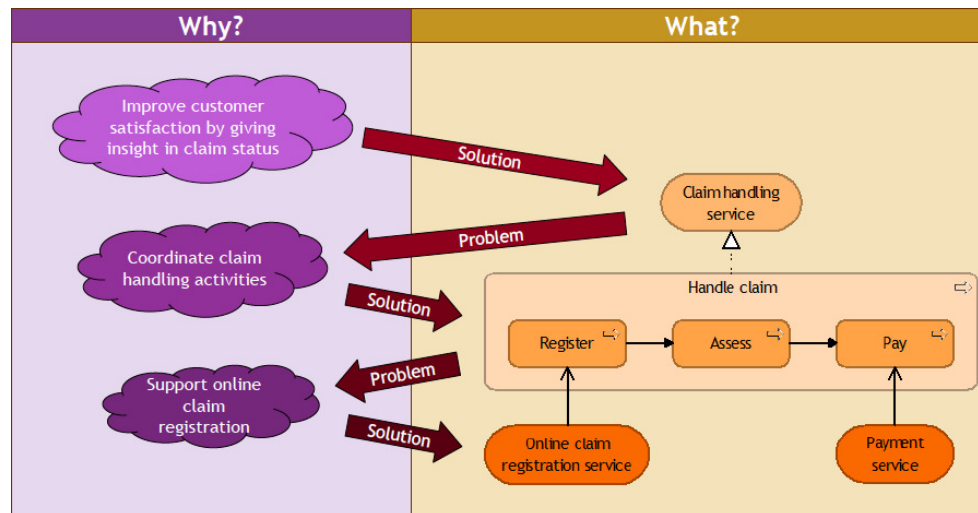
Support for BRM - Method

- Method
 - Requirements Engineering Cycle
 - Relation to TOGAF



Summary BRM – the method

- Method
 - Requirements Engineering Cycle
 - Related to EA process





Conclusions

- Business requirements are very important
- Model your business requirements with ArchiMate
- Relate your business requirements to EA
- Distinguish business requirements from solution requirements
- Analyze your business requirements

ADDITIONAL INFORMATION ABOUT BiZZDESIGN



How can BiZZdesign help you?



- For midsized and large organizations that
 - need to deal with many and/or complex *business and IT changes*, within an environment with significant cost constraints and risk considerations
 - need to *drive improvements* in their business with better decisions
 - want to *empower* their *organization* to manage these improvements
- BiZZdesign
 - offers an *integrated business improvement approach* consisting of design tools, training, business consultancy, and best practices
 - helps businesses *identify, plan, and execute improvements* across business and IT at the lowest possible cost with a complete understanding of the risks to manage
 - enables your organization to *take control* of its improvement efforts, without permanently relying on expensive consultants

Empowerment by training: BiZZdesign Academy

Empower your organization to manage and execute improvements!

- Excellent training / coaching to effectively use methods and tools
 - Master classes
 - Foundation training (1-2 days)
 - Practitioner training (2-6 days)
 - Certification and coaching
 - Games and booth camps
- Topics: Business Models, EA, TOGAF, ArchiMate, Infrastructure Architecture, BPM, BPMN, Lean, Data management, Business Logic, etc.



Empowerment by best practices

Empower your organization to manage and execute improvements!

- BiZZdesign gathers and disseminates its knowledge and experiences in easy accessible formats
 - Blogs
 - Webinars
 - White papers
 - Books and e-books
 - Invited events and conferences



Business Consultancy to support you

We help identify, plan, and execute improvements in your organization

- Experts in the areas of
 - Business Models
 - TOGAF
 - ArchiMate
 - Business Requirements
 - Infrastructure architecture
 - Process design / optimization
 - The Decision Model
 - Lean



- We help you solve your problems
- We enable you to take control of your improvement efforts!

How did BiZZdesign help organizations



- Developing new business models for a university
- Implementing the EA-function in a telecom organization
- Develop a security architecture for a municipality
- Defining the future work space for a university
- Defining the future infrastructure landscape
- Redesigning the process landscape for ERP-implementation
- Create consistent en insightful business logic
- Optimize processes at a municipality
- Implement Lean in organization (training and coaching)

Community-based innovation with open standards

- BiZZdesign improves and develops tools and methods with
 - Universities
 - Research institutions
 - Clients
 - Partners
- BiZZdesign is active member of various consortia
 - The Open Group, BPM Forum, National Architecture Forum
- InnoValor: innovation-based consultancy
 - BiZZdesign has acquired a dedicated business unit for innovation-based consultancy



Innovation for continuous improvement

Our innovation supports the improvement and development of tools and methods to facilitate your improvements initiatives

Current BiZZdesign research themes:

- Strategy management
- Capability-based planning
- Enterprise Portfolio Management
- Enterprise Risk and Security
- Data management
- Business Logic





The BiZZdesign Tool Suite: supporting improvements



- The BiZZdesign Tool Suite
 - helps to identify, plan, and execute improvements across business and IT at the lowest possible cost with a complete understanding of the risks to manage
 - is providing efficient analyses of business and IT architectures
 - is providing efficient analyses of enterprise portfolios
 - is easy to use, flexible, configurable and scalable
 - is based on open standards
 - is delivered with effective training and expert consultancy
 - enables your organization to take control of its improvement efforts

BiZZdesign Worldwide: offices and resellers



Finance and Insurance



Rabobank



Government

VROM

CVZ College van aanpakkrachten

landbouw, natuur en
voedselkwaliteit

Rijkswaterstaat



Ministerie van Financiën

Ministerie van Binnenlandse Zaken en
Koninkrijksrelaties

noordoostpolder

Gemeente
Sittard-Geleen

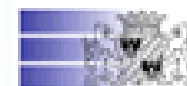
KB Koninklijke Bibliotheek

Belastingdienst

UWV
VOOR RE-INTEGRATIE EN TOEGELIJD INKOMEN



Instituto Mexicano del Seguro Social
SEGURIDAD Y SOLIDARIDAD SOCIAL



provincie groningen

S V B
waar het leven
Sociale Verzekeringbank

Centraal Bureau voor de Statistiek

POLITIE

Nationaal Archief
Ministerie van Onderwijs, Cultuur en
Wetenschap

gemeente Eindhoven

Gemeente Enschede

DIMPACT

PURMEREND
gemeente
Tubbergen

Zwolle
groenste stad
van Europa

Gemeente
Roosendaal



Gemeente Rotterdam

GEMEENTE
VELSEN

Gemeente Heerlen

Gemeente Uithoorn

Health care



Utilities, Energy and Telco's



Retail and Media

Detailresult Groep

Ahold

PLUS

Sligro
FOOD GROUP N.V.

C1000

WE

JUMBO
supermarkten

COOLCAT®

Corelio

Kluwer
a Wolters Kluwer business

MAX HAVELAAR

PEARSON
Education

Reed Business

telegraphmediagroup

Industry



Education



Partners



Tiberium AG





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Building Strong Organizations

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