



cuneco – centre for digital construction

*a bips initiative on classification, properties, information
levels and QTO*

buildingSMART Network Meeting
Thursday June 9th 2011

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Background for establishing cuneco



- Prerequisite for increase in productivity:
Common ICT infrastructure from cradle to grave
- Prerequisite for Common ICT infrastructure:
Standardization
- No sole operator will be able to achieve this alone



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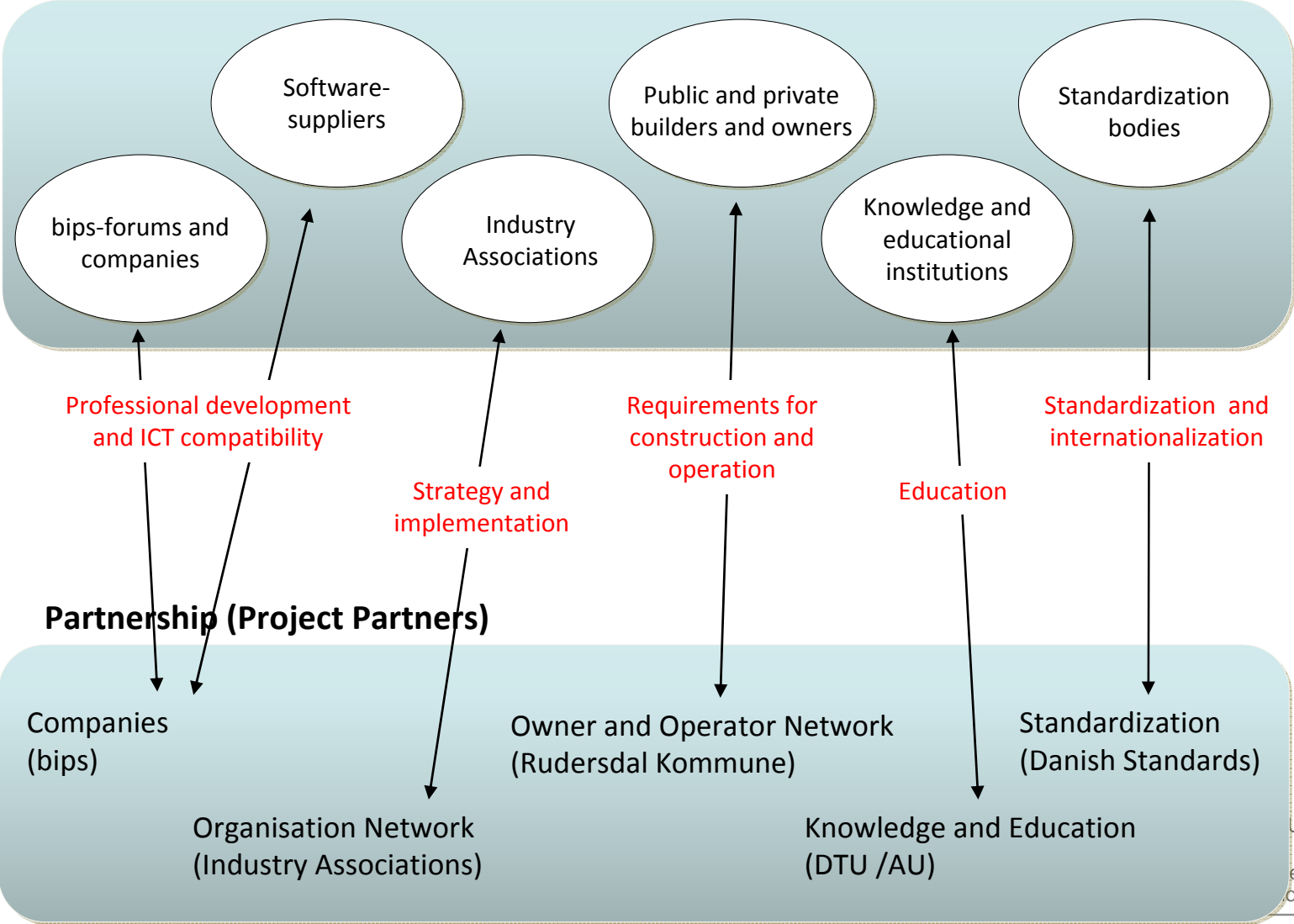


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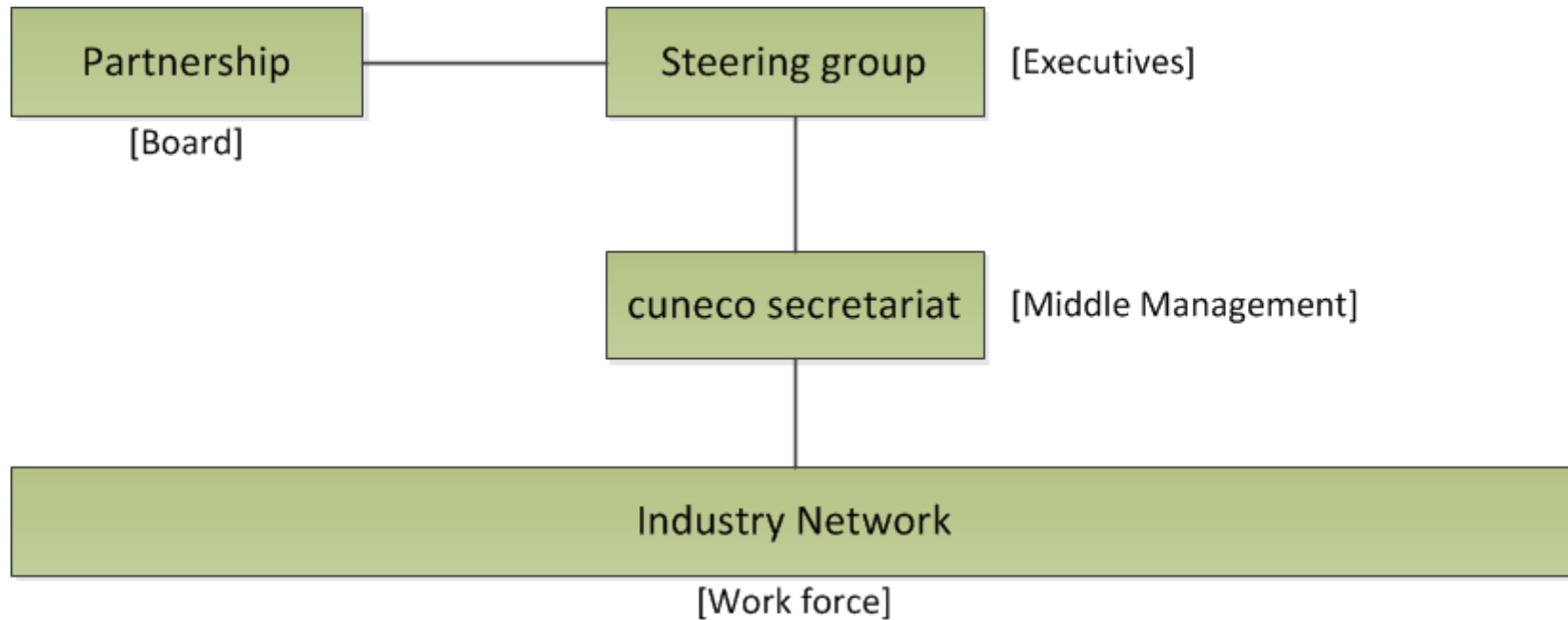
Partnership with Business and Education



Participants in the Network



Organisation chart



Steering Group



- Representatives from:
 - Project Owner: bips
 - The professionals in the industry (architects, consulting engineers, contractors, manufacturers, owners and operators)
 - Standardization – Danish Standards
 - Education – Technical University of Denmark
- The Steering Group has the professional responsibility for establishing and running the cuneco projects

Main objectives of cuneco



- Develop, Test, Document and Implement Standards for the ICT Infrastructure of the Construction Industry
- Ensure that ICT Data can be exchanged between the value chains and phases of construction
- Contribute to increased productivity and efficiency for the enterprises in the industry and the community as a whole

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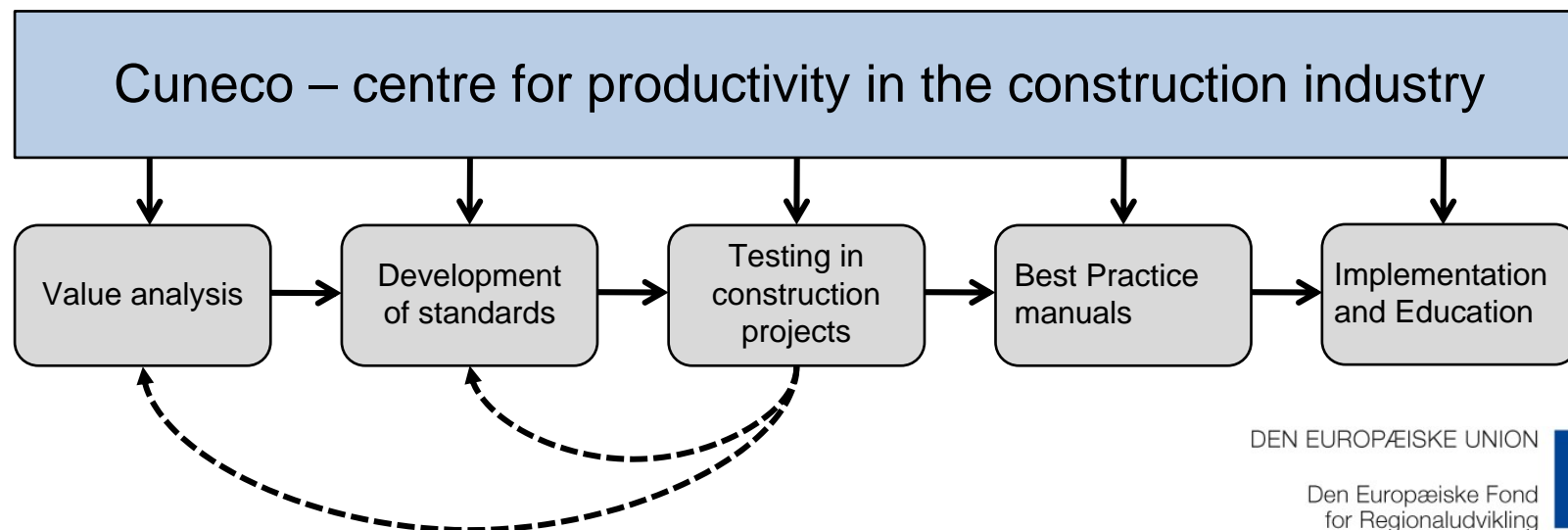


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Process Flow - Approach



- The approach is based on a principle of creating value:
 - Based on establishing requirements and value analysis
 - Developing essential trade standards
 - Compatibility with national and international standards
 - ICT suitability and implementation in software
 - Testing virtually and 'live' in construction projects
 - Implementation in the business and educational communities



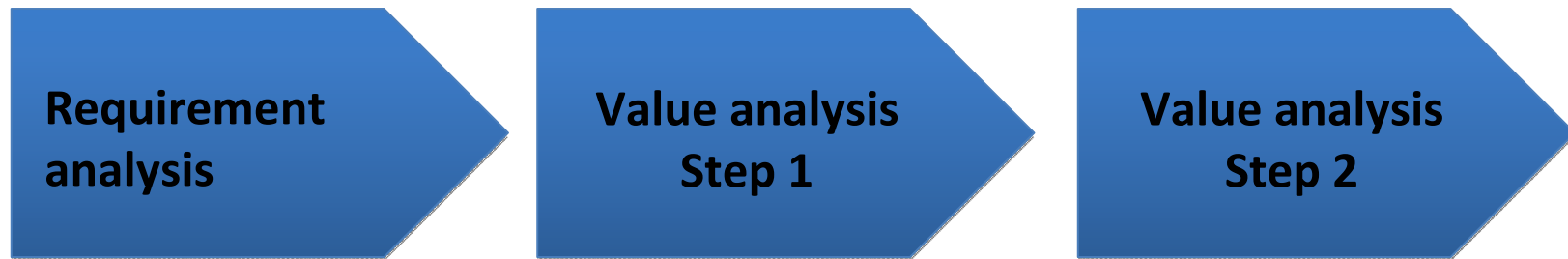
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Requirements and value analysis



- Workshops
- Focus groups
- Process modelling
- Information analysis
- Requirement specification
 - Trade
 - Cross-trade

- Ex ante assessment
- Economical Value
- Time consumption
- Quantification
- Estimated value

- Ex post assessment
- Effect evaluation
- Quantification
- Actual value

The analysis is the prerequisite for starting projects

Assessment of the effect from implementation

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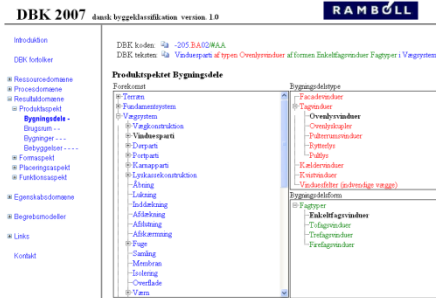
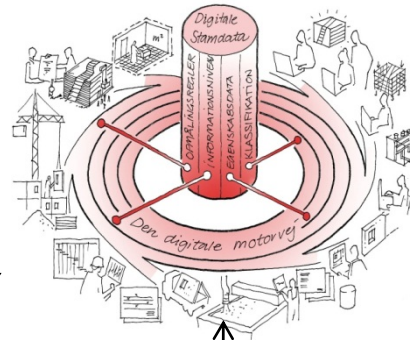
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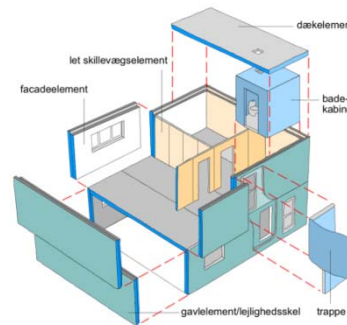
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The cuneco server

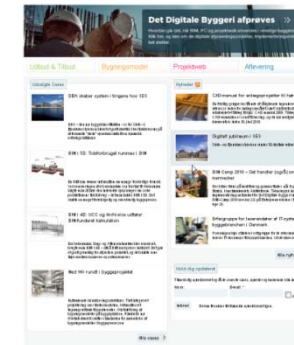
...a common ICT solution for distributing data to the value chain of construction



Data from other projects, e.g.
 Classification of building materials with properties and information levels

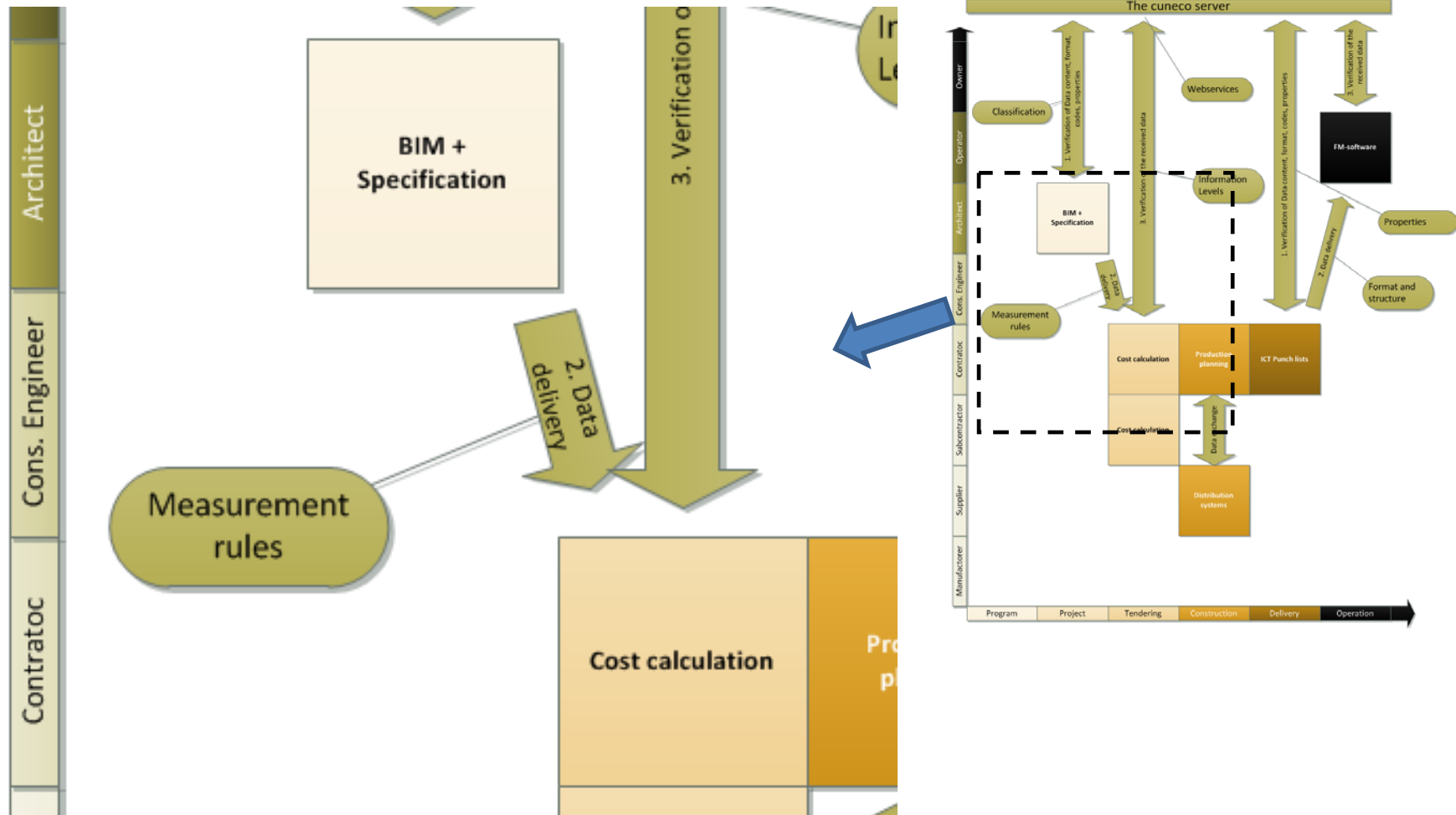


The structure, data and rules of the Standards
 to enable integration with the ICT systems in the industry



Best Practice Manuals to enable searching, extraction and download through various interfaces

Software integration



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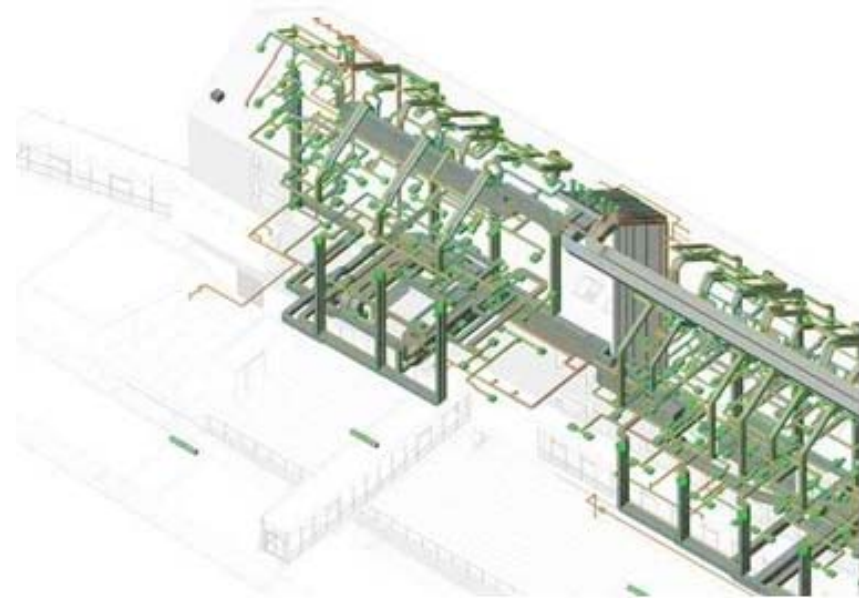


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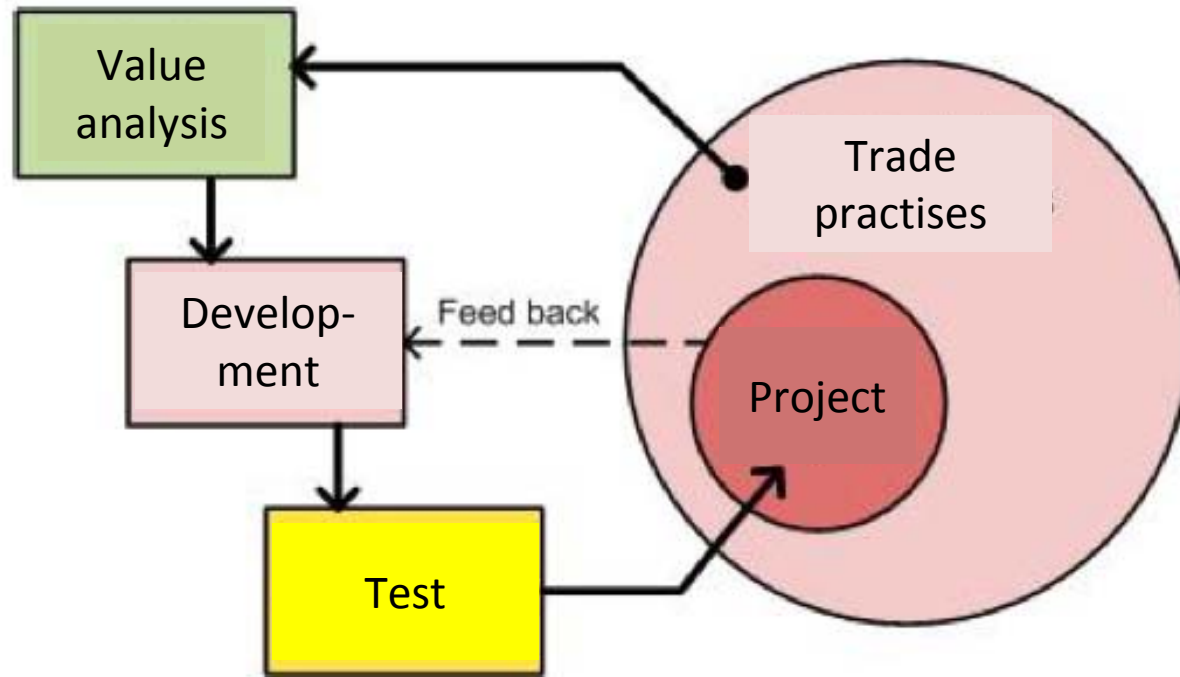
Contractor – Receiving material for tender



1. A contractor is going create a bid for a job
2. The architect will deliver digital material at a specified information level
3. The material consist of a Bill-of-quantities, the specification and a IFC representation of the BIM
4. Before starting his work the contractor uploads the material to the cuneco server
5. The server sends a reply stating whether the information level is met
6. The contractor imports the material in his cost calculation system



The Test Framework



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Projects - June 2011



- 'Skill' mapping in the industry
- Website
- Requirements analysis
- DBK code and syntax
- Properties – Ends and means
- Information Levels – Ends and means
- The cuneco server
- Conceptual model – Resource domain
- Conceptual model – Process domain
- Data for operation

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DBK – Classification of elements



- Specification of the syntax for classification of the product aspect of building elements in the Result domain of ISO 12006-2
- **Objectives**
 - Establishing the syntax
 - Creating the tables
- **Plan**
 - Syntax: June 2011 to December 2011
 - Development of a prototype ICT tool for testing in relation to existing software applications



DBK – classification of elements - objectives



- Implementable in existing ICT systems
- The classification code must be consistent throughout the lifecycle
- Easy to sort elements of similar type
- Use of a compositional structure
- Separate elements of similar type through a sequential number
- Contribute to international standardization

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Properties – Ends and means



- Establishing the basis for future work in this area
 - Examine international standards and systems in the area (e.g. IFD)
 - Interview software suppliers regarding the use of properties in their systems
 - Establish how we are going to structure properties
 - Investigate properties in relation to the three other of ISO 12006-2
 - Describe how we are to go about include all relevant participants in the work
- An online forum on the cuneco server with 3 areas:
 - An area where all interested parties can suggest properties
 - An area where suggestions are made for structuring the properties
 - An area where the agreed structure is published

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Information levels – Ends and means



- A system for supplying information about what level of detail the receiving party can expect to find in a data package
- Originates from the Digital Construction Initiative in 2006
- The development in cuneco aims at creating more dimensions – e.g. geometry, function, materials etc.
- A project can contain elements with several different information levels at a given time
- This first project aims at looking at the exchange of information carried out today
- Later projects will implement IDM's

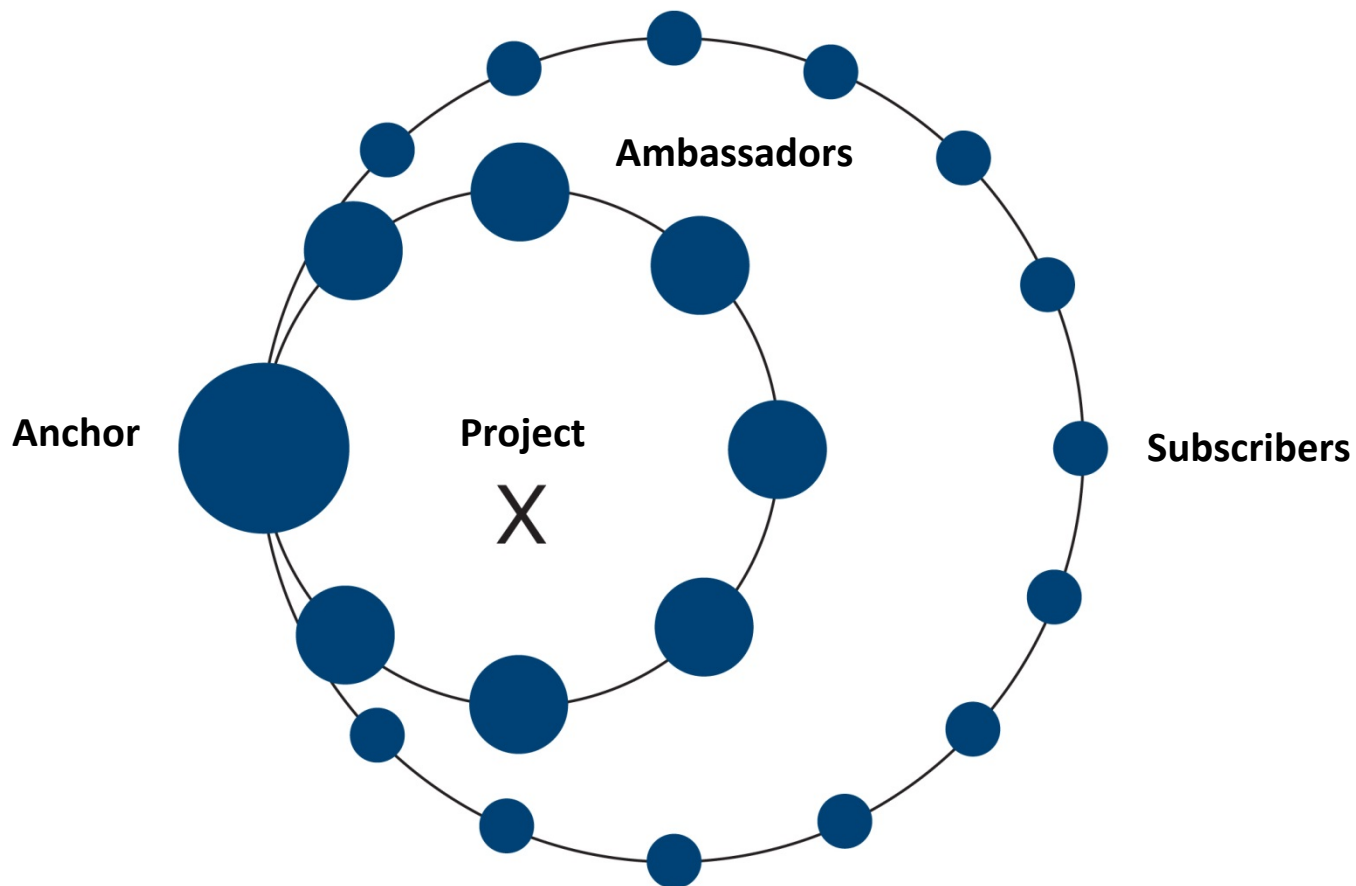
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Network Strategy



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