

Developing an elementary value web



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Take home message:

A value web consists of:

- Actors, who offer and request value objects via value ports. Value ports are grouped into value offerings and interfaces to represent bundling and economic reciprocity
- Between actors, value objects are exchanged via value transfers. Within an actor, value objects are related via dependency elements

A value web is constructed by:

- Eliciting actors
- Eliciting (reciprocal) value objects
- Eliciting ports, offerings and interfaces that transfer value objects
- Relating value ports by value transfers and transactions between actors
- Relating value ports by dependency elements within an actor

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Elementary value web

- A value web consisting of precisely two actors

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Example

“A traveler wants to travel from Amsterdam to Paris.

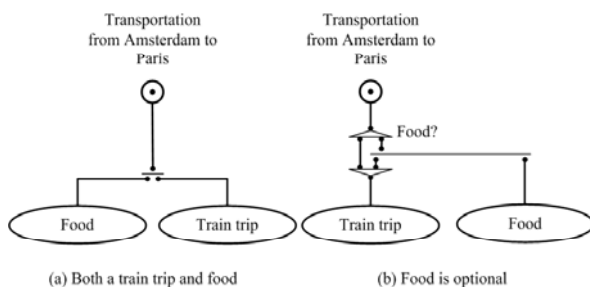
He decides to do so by a high speed train.

During traveling, it is possible to buy some food on board of the train.

Two alternative are possible. First, the food can be included as part of the train trip. Second, the food can be optional.”

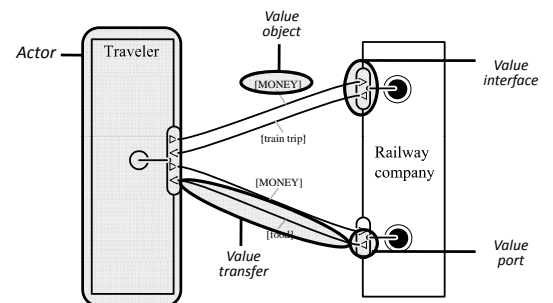
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Example: Value hierarchies



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A value web: Both a train trip and food




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Building blocks for value webs


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Actor

- An actor is perceived by its environment as an economically independent (and often also legal) entity.
 - Enterprises and end-consumers
 - A profit and loss responsible business unit
- Example: Traveler, Railway company
- Visualization: 

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Value port

- An actor uses a value port to provide or request value objects to or from its environment
- A value object flowing into or out an actor denotes a change of ownership of a physical object, or experiencing a service outcome (in flowing) or providing a service outcome (out flowing)
- A value port abstracts away from how all this is done
- Example: a provided/requested train trip
- Visualization: 


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Value offering

- A value offering models what an actor offers to (an out-going offering) or requests from (an in-going offering) its environment as a bundle
- A value offering contains equally directed ports
- Consumer side bundling:
 - Value objects are only of value in combination
 - Example: Electricity power plus a distribution service
- Supplier side bundling:
 - A supplier thinks that a bundle of products yields more profit than the individual products themselves, usually because the total sales volume is higher
 - Example: Microsoft Office, McDonalds

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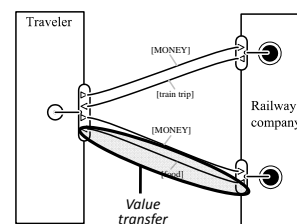
Value interface

- A value interface shows the mechanism of economic reciprocity
- A value interface groups precisely one in-going and one out-going value offering
- The transfer of value objects is atomic at the level of the value interface; how this is done is not considered
- Example: A train trip for money
- Visualization: 

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Value transfer

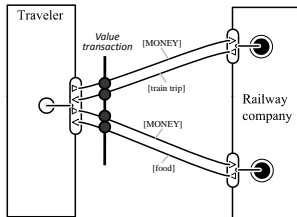
- A value transfer shows the actors, who are willing to transfer value objects with each other
- Example and visualization



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Value transaction

- A value transaction groups all value transfers that all should happen, or none at all, as a result of how the value interfaces are chosen
- Example:



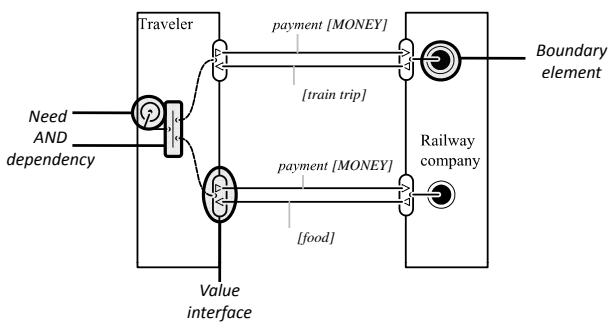
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Dependencies

- Value transfers: how actors transfer value objects between each other, so externally
- Dependencies: how an actor internally obtains/delivers a value object:
 - via which (alternative) value interfaces an actor transfers value objects to satisfy a consumer need
 - via which value interfaces an actor obtains value objects to be able to provide other value objects via other value interfaces of that same actor
 - when not to consider additional value transfers anymore, so to state model boundaries

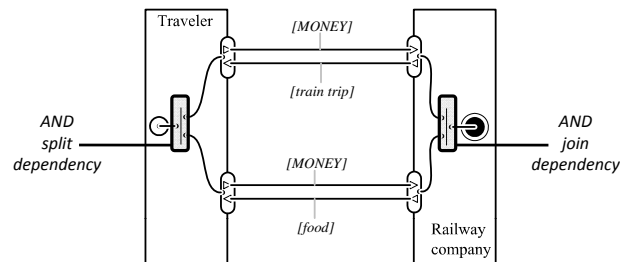
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Dependencies cont'd



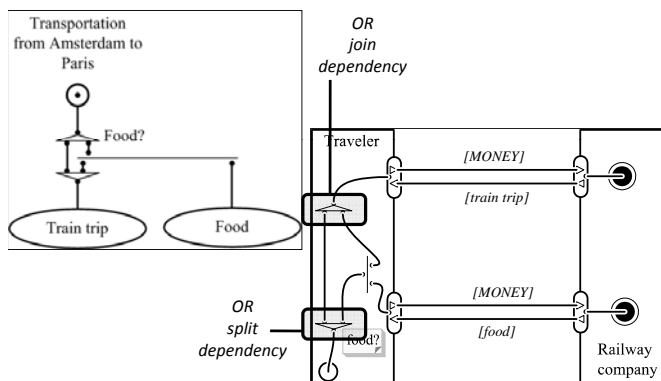
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Dependencies cont'd: Number of food and train trip transfers must be the same

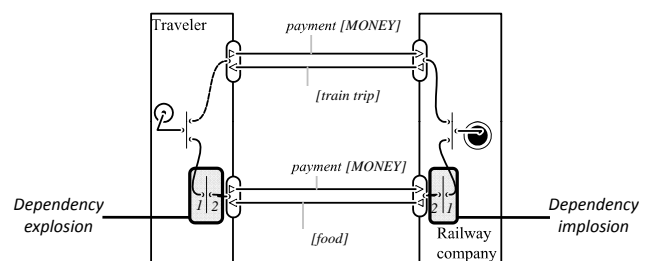


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Dependencies cont'd: Food is an option














Dependencies cont'd: Two times food



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Reference legend

Legend		
Actor 	Value interface 	Value port 
Market segment 	Activity 	Consumer need 
Value Transfer 	AND element 	OR element 
Connect. element 	Boundary element 	Value object [...]

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Constructing value webs

- Elicit actors
- Elicit (reciprocal) value objects
- Elicit value ports, offerings and interfaces
- Elicit value transfers (and transactions)
- Elicit dependencies

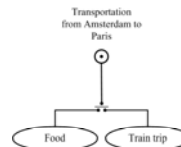
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Elicit actors

Actor elicitation	Actors A-1
FIND ACTORS IN TERMS OF ROLES , AND STATE THE OBJECTS THEY REQUEST OR OTHER	Ask and search actors that are interested to produce or consume value objects, as stated by the value hierarchy.
NAME ACTORS	Name actors by their company name if they are already known. Otherwise, just state the role.
IDENTIFY CORE AND ENVIRONMENTAL ACTORS	Decide which actors which are core actors, and therefore subject to further analysis, and which actors are environmental actors, for which we assume they are sustainable already.

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Elicit actors cont'd Example



Actor elicitation	Actors A-1
FIND ACTORS IN TERMS OF ROLES , AND STATE THE OBJECTS THEY REQUEST OR OTHER NAME ACTORS	<ul style="list-style-type: none"> • Traveler: requests a train trip and food • Railway company: offers a train trip and food
IDENTIFY CORE AND ENVIRONMENTAL ACTORS	<ul style="list-style-type: none"> • Traveler: Role • Railway company: Role
	<ul style="list-style-type: none"> • Traveler: Core • Railway company: Environmental

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Elicit actors cont'd Guidelines

- Each value object in the hierarchy can be produced/consumed by a different, and alternative actor(s)
- Actors are named by giving their company or role name
- Actors can be core actors, or can be environmental actors

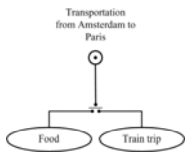
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Elicit reciprocal value objects

Value object elicitation	Value objects VO-1									
FIND RECIPROCAL VALUE OBJECTS	Find value objects, by asking for each already found value object, what the requested reciprocal object is.									
	<table border="1"> <thead> <tr> <th>Actor</th> <th>Value object in</th> <th>Value object out</th> </tr> </thead> <tbody> <tr> <td>Actor 1</td> <td>object 1</td> <td>reciprocal object</td> </tr> <tr> <td>...</td> <td>...</td> <td>...</td> </tr> </tbody> </table>	Actor	Value object in	Value object out	Actor 1	object 1	reciprocal object
Actor	Value object in	Value object out								
Actor 1	object 1	reciprocal object								
...								

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Elicit reciprocal value objects cont'd Example



Value object elicitation
FIND RECIPROCAL
VALUE OBJECTS

Value objects VO-1

Actor	Value object in	Value object out
Traveler	Food	Money
	Train trip	Money
Railway company	Money	Food
	Money	Train trip

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Elicit reciprocal value objects cont'd Guidelines

- Ingoing value objects require outgoing value objects, and vice versa

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Elicit value ports, offerings and interfaces

- Value port:
 - Each value object is requested or offered via a port of an actor
- Value offering:
 - Which cases of bundling exist?
- Value interface:
 - Which value objects are reciprocal?

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Elicit value ports, offerings and interfaces cont'd Example

Actor	Role	Core/Environmental	Value interface	Value offering in	Value offering out
Traveler	x	Core	vi ₁	Food Train trip	Money Money
Railway company	x	Core	vi ₂ vi ₃	Money Money	Food Train trip

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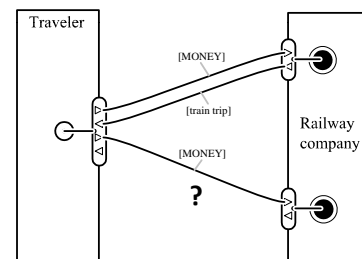
Elicit value ports, offerings and interfaces cont'd Guidelines

- An actor offers and requests value objects via value ports
- Group ingoing value ports into a value offering if :
 - the objects obtained via these ports are only of value in combination for that actor
 - for specific reasons, an actors wants to offer value objects via these ports only in combination
- A value interface has exactly one ingoing and one outgoing value offering

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Elicit value transfers

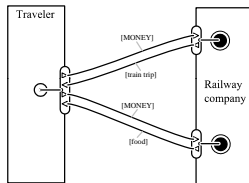
- Value transfers must respect the semantics of the value interface; either all ports transfer a value object, or none at all



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Elicit value transfers Guidelines

- An actor can only do value transfers with other actors (why?)
- Value transfers do not state a particular time-ordering



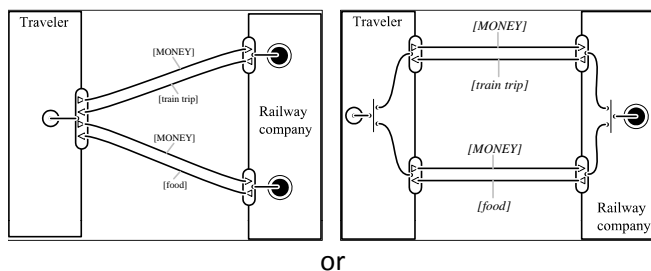
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Elicit dependencies

- Use the value hierarchy
 - The need
 - The objects
 - The boundary elements
 - And dependencies between these

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Elicit dependencies Example



or

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Elicit dependencies Guidelines

- Each consumer need in the value hierarchy results in a consumer need of an actor in the corresponding value web
- If the value hierarchy shows a value object, which has no dependents anymore, the value interface offering this object is connected to a boundary element
- Dependencies show no time-ordering

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Next lecture: How to make a multi-actor value web

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Key points

- Actors are profit & loss responsible entities
- Actors use value ports to request and offer value objects from/to their environment
- A value offering is used to represent customer- and supplier side bundling
- A value interface is used to represent economic reciprocity
- A value transfer is used to relate various actors, by stating what they transfer of value
- Dependency elements show how a need is satisfied by value objects, and when not to consider additional value transfers anymore.

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