

## Developing a multi-actor value web



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## Take home message:

A value web consists also of:

- Market segments, consisting of similar actors who assign economic value to value objects in the same way
- Value activities, which are commercial viable activities performed by an actor or by a market segment
- Partnerships, groups of actors who jointly satisfy a complex need

Additional construction rules apply for:

- These concepts, and
- Due to the multi-actor setting (rather than elementary value webs)

A trace is a path through a value web, starting at a consumer need, and ending at a boundary element

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## Multi actor value web

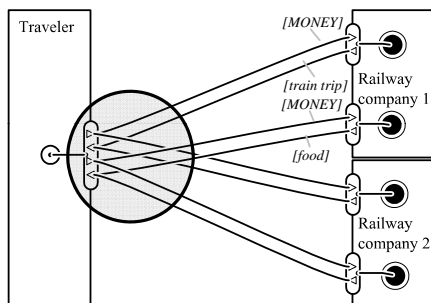
- A value web consisting of any number of actors

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## Building blocks for value webs

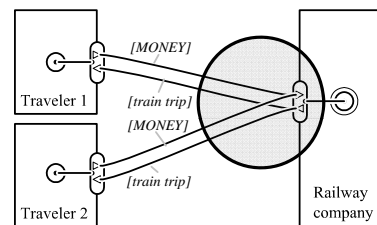
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## Value transfer Supplier selection



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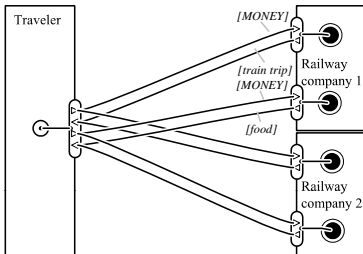
## Value transfer cont'd Merging transfers



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## Are value transactions really needed?

- A value transactions contains value transfers that all should happen or none at all.



- What are the value transactions here?

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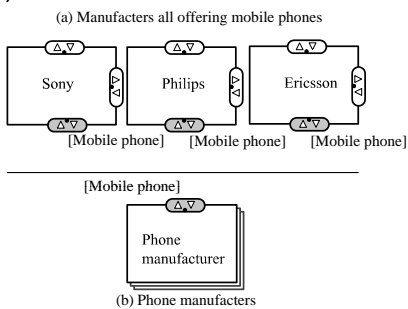
## Market segment

- A number of actors assign economic value to objects equally and thus from a modeling perspective can be dealt with as one
- Actors in a segment are usually implicit
- As an actor, a market segment has value interfaces
- Example: Traveler
- Visualization:

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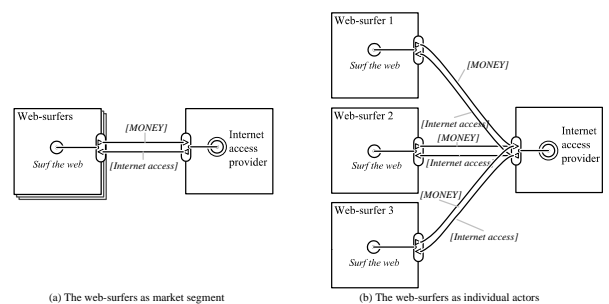
## Market segment cont'd

- A market segment groups value interfaces of actors, rather than the actors themselves



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## Market segment cont'd What's the difference?



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## Value activity

- A value activity is a task performed by an actor (or market segment) that potentially results in a positive net cash flow (in case the actor is an enterprise), or that potentially contributes to an increase of economic utility in its own right.
- Design question: who does what?
- Value activity  $\neq$  operational activity

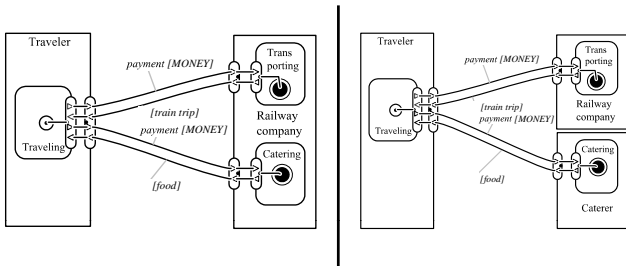
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## Value activity cont'd

- As actors and market segments, a value activity has value interfaces
- Example: transporting, catering, traveling
- Visualization:

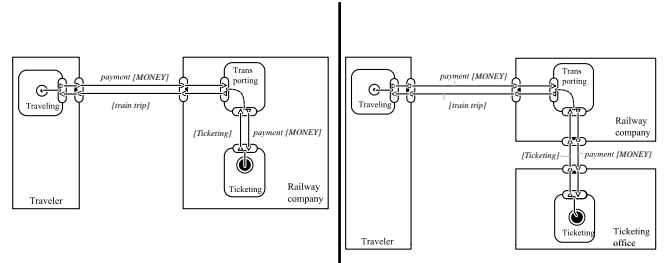
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### Value activity cont'd Who does what?



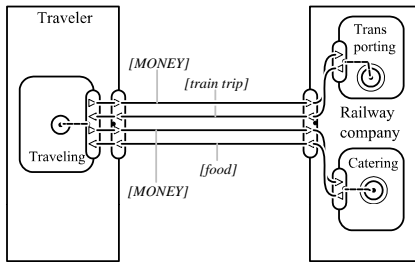
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### Value activity cont'd Transfers between value activities



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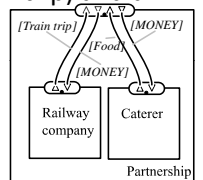
### Value activity cont'd Number of ports of actor and value activity are not always equal



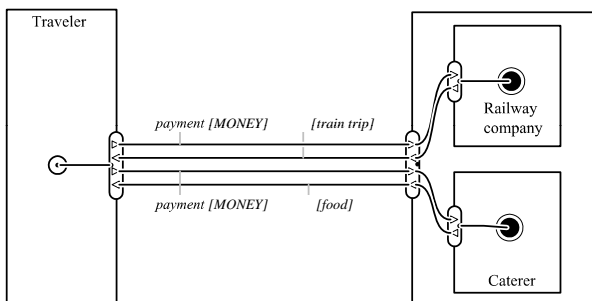
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### Partnership

- A partnership groups already existing value interfaces of actors or market segments into one interface, to model a joint offering
- Needed to satisfy a complex consumer need
- Not: ownership!
- Example: A railway company (train trip) and a caterer (food) form a partnership
- Visualization:



### Partnership cont'd



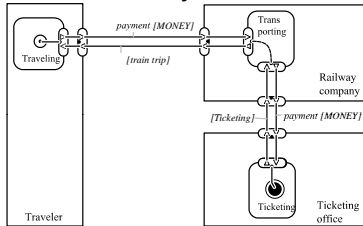
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### Constructing value webs

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## Finding more value objects "Causally related" objects

- Find additional value objects/value ports by asking for each value object offered by actor, which other value objects are needed to produce that value object

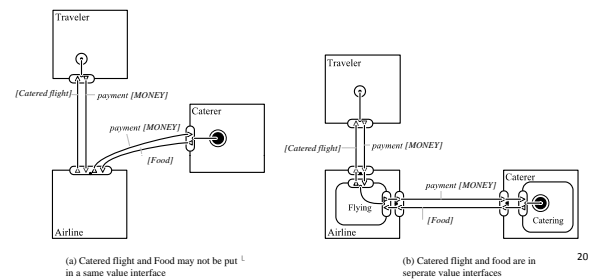


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## Value interface

### To group or not to group?

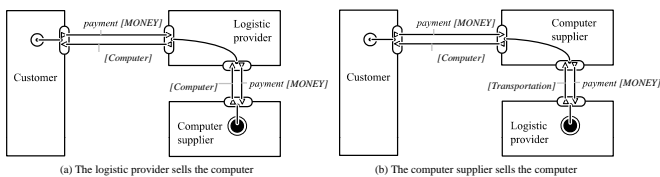
- If an actor obtains object  $o_1$  and uses this object to create object  $o_2$ , then the objects  $o_1$  and  $o_2$  can not be part of a same interface



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## Value transfer Who sells to whom?

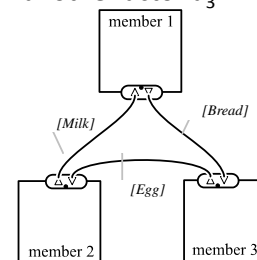
- Value transfers represent a change in valuable rights, such as possession, and not a change in ownership only



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## Value transaction n-party transactions ( $n > 2$ )

- If an actor  $a_1$  is offering a value object to actor  $a_2$ , actor  $a_1$  may obtain a reciprocal value object from another actor  $a_3$



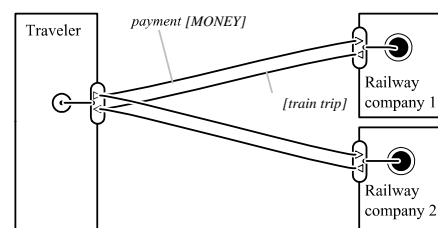
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## Traces in dependency networks

- A trace starts at a consumer need, and then follows dependencies and value transfers to ultimately arrive at a boundary element.
- In case an OR-dependency is encountered, or if an actor can choose from alternative value transactions/transfers, a selection is made, and the trace continues.

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## Traces cont'd How many traces?

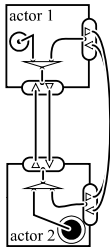


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## Traces cont'd

### Traces are a-cyclic

- Right or wrong? (and why?)

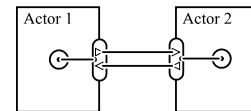


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## Traces cont'd

### Traces start with a need, and end with a boundary element

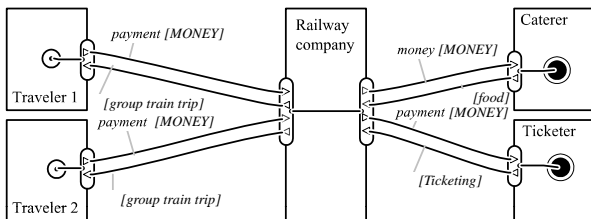
- Right or wrong? (and why?)



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## Traces cont'd

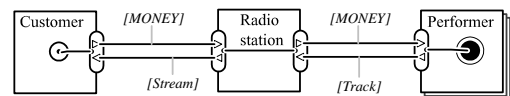
### A trace may have multiple needs



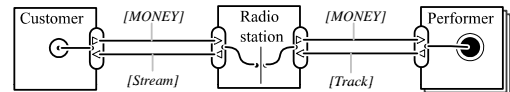
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## Traces cont'd

### Check the cardinalities



(a) Streams are produced using tracks, cardinality mismatch



(b) Streams are produced using tracks, shown as dependency explosion

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## Next lecture:

### How to assess economic sustainability

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## Key points

- A market segment is used to model that some actors value the value objects they obtain or provide the same
- A market segment groups only the value interfaces of actors expressing this equal valuation; not the actors themselves
- Actors perform value activities. Such activities are operations that potentially yield a profit for at least one actor involved in the value web.
- Value interfaces of actors can be grouped into partnerships. This models that actors jointly offer value objects to their environment, rather than on their own.
- Value objects depending on each other can not be grouped into a value offering.
- Ultimately, value transfers represent a change in valuable rights.
- Actors transfer value objects with their environment, and consequently an actor may execute a transfer and a reciprocal transfer with different actors, together forming the environment.
- Value webs have traces, which are paths starting at a consumer need, and traversing web via dependency elements and value transactions, to boundary elements. Such paths do not contain cycles.

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