


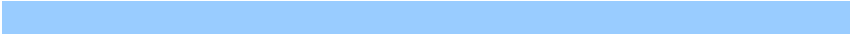



Revision of Stockflow Ontology

- Pavel Hruby
- Jesper Kiehn

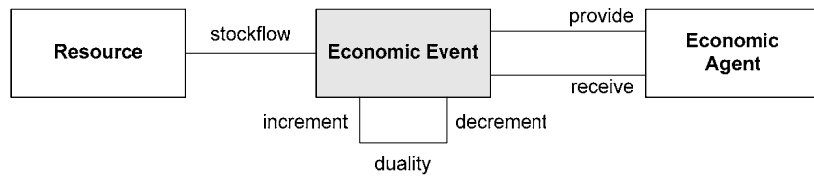


Who are we



- We work for Microsoft Development Center Copenhagen
- We came across REA when we worked on a development of a new generation business software
- This became the topic for cooperation with IT University Copenhagen

Core REA Model



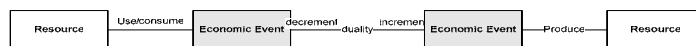
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Core REA Model

Exchange



Conversion



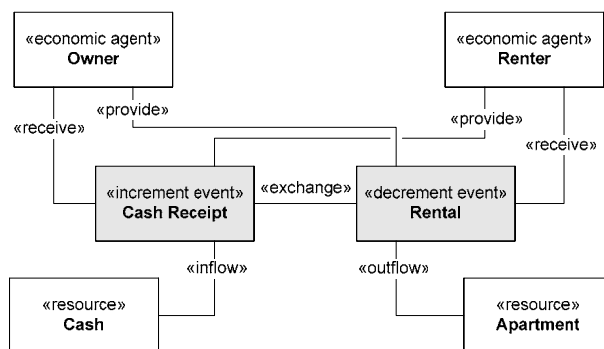
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Problem

- How to model rental?
 - you transfer only some rights to the resource
 - classic REA cannot distinguish between rights. It has only ownership.
- If you consider a resource as a rights of usage, then you can model in REA.
 - then owner creates other resource – the usage rights, and sells this new resource to the renter.
- We propose to distinguish in the stockflows.

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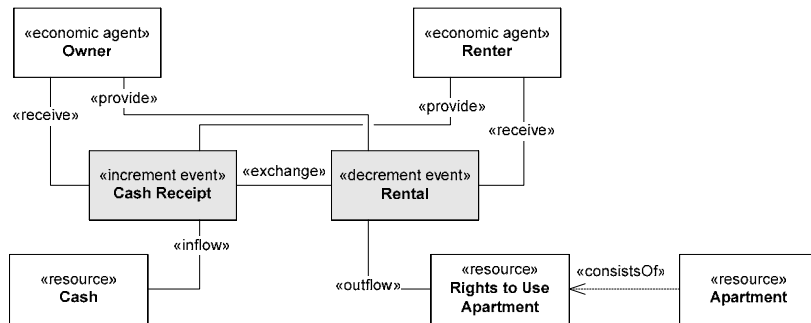
How to Model Rental



- Problem with this model is that it is the same model as for sales of apartment

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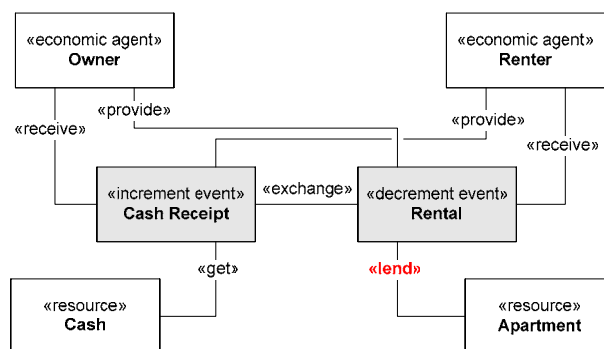
How to Model Rental



- Problem with this model is that renter might run a conversion process on Apartment, and the model does not explain how he can possibly do it.

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How to Model Rental



This is the model that we like
We don't want to consider Rights as special resources

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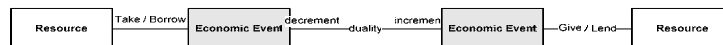
Ontology for stockflows

- Ownership changes
 - Take / Buy
 - Get / Sell
- Conversion
 - Use (no influence on ownership)
 - Consume (terminates ownership)
 - Produce / Modify (no influence on ownership)
 - Create (establishes ownership)
- Usage rights changes
 - Borrow
 - Lend

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Model for exchange process

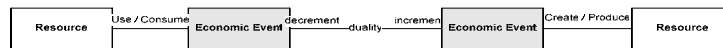
Exchange of rights



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Model for conversion process

Change of properties or existence



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Consequences

- Now we know which events are instantaneous and which are time intervals
 - Those events that change ownership are instantaneous
 - Those events that change other rights are time intervals
 - Those events that change existence ...?
- No mix between conversion and exchange
 - Exchange transfers rights to the resource
 - Conversion changes features of the resource AND transfers control over the resource

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Consequences - continued

- Single concept of agent, and subtypes of participation
 - Provide rights participation
 - Receive rights participation
 - Provide control participation
 - Receive control participation