

A Property driven approach to REA Modeling

By Mette Jaquet



Research Environment

- NEXT/BEFORE collaboration with MDDC and the Computer Science Department at University of Copenhagen
- Software Development Group at ITU
- 4 senior faculty members, 5 PhD. students
- 28 students wrote a masters thesis involving REA so far



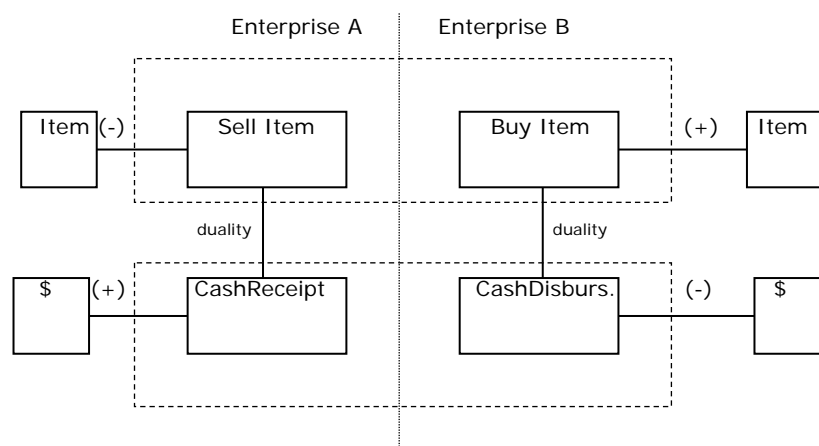
Evolving REA

Over time REA has met the challenge of having its scope changed from covering accounting needs in a single retail enterprise to:

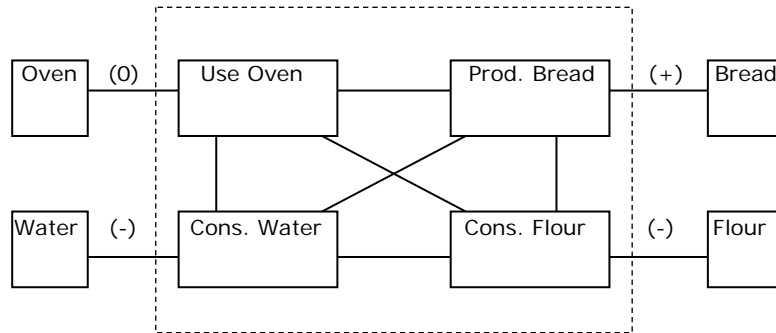
- Several cooperating enterprises
- Manufacturing enterprises
- Other areas of enterprise functions
- Planning purposes



Dualities in Exchanges



Dualities in Conversions



Differences between transfers and transformations

	<u>Transfers</u>	<u>Transformations</u>
Coupled by dualities in	Exchanges	Conversions
Are always	Across boundaries of agents	Within boundaries of an agent
Agents participating	Two, of competing economic interest	At least one
Dualities connect	Separate events	A congruent event
Change	Agent-Resource relations	Properties of a resource
Temporal nature	Are instant	Have a duration



Resources

Have various types of properties:

- Temporal
- Spatial
- Substance
- Relationships
- Identity*
- State

A key to determining which events to model for a specific business case may be the properties they affect

... and vice versa the key to handling properties flexibly may be the events that change them

*: I.e. unique, countable, immaterial



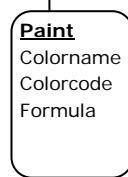
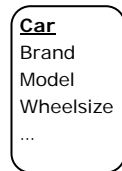
Events describing properties – An example

Car
Brand
Model
Wheelsize
...

A resource has static properties that do not change during its lifetime



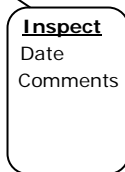
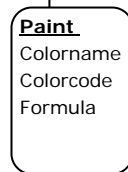
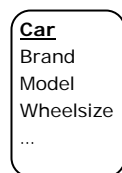
Events describing properties – An example



Events can add or change properties, and may be reusable for similar properties of other resources i.e. bicycles or dustbins



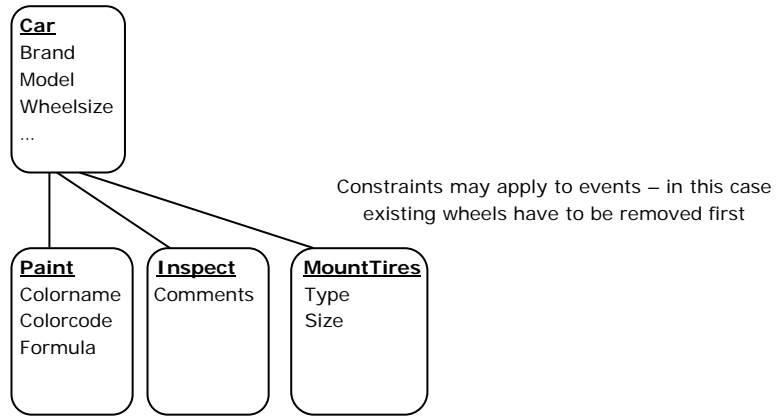
Events describing properties – An example



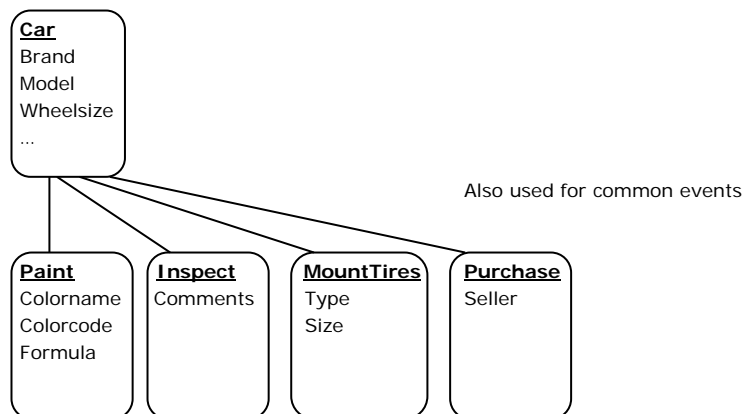
Events might not change any physical properties, but still be required for a car to be ready to sell



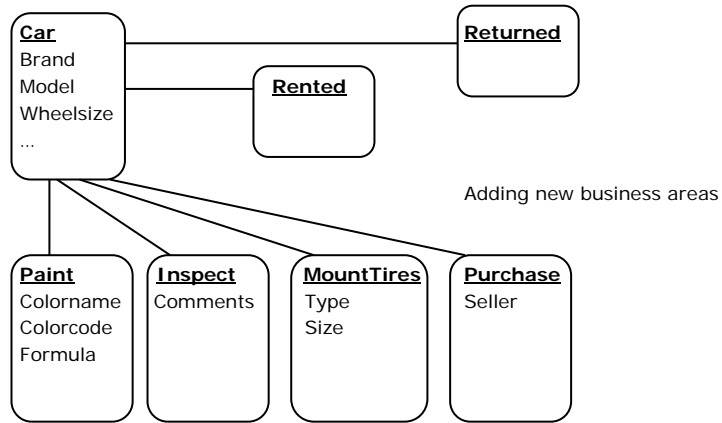
Events describing properties – An example



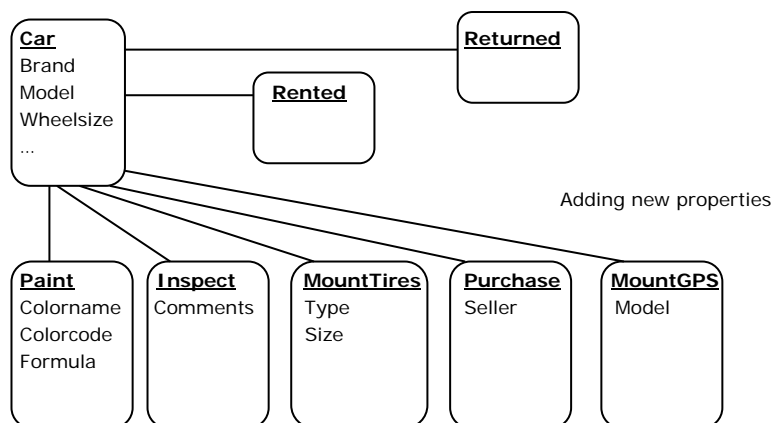
Events describing properties – An example



Events describing properties – An example



Events describing properties – An example



Selected Suggestions for Further Work

- Updating the axioms of the REA Ontology and differentiating between transfers and transformations
- Exploring the use of classification schemes as suggested by Hessellund et al. to describe other types of semantics than than event/property dependencies.
- Exploring the notion of property-driven event modeling by modeling exercises and prototype development

