Previously...
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Law and Logic
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Steps - Ontology Design
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Analysis Preview
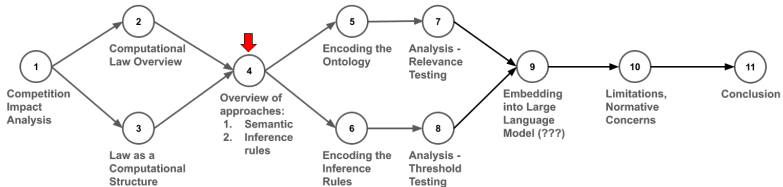ooo

References
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Encoding the Semantics of the OECD Threshold Tests

Emerson S. Bañez

July 18, 2024

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Outline

1. Previously...

2. Law and Logic

3. Steps - Ontology Design

4. Analysis Preview

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Chapter Plan

Computational Law Approaches

Problem	Encoding	Analysis
Relevance Testing: Does the law map with the industry being assessed? (Actors, transactions)	Ontologies (Ontology Web Language)	Reasoning engines to determine relationships: - No mapping? - Identity? - Classification? - Mereological?
Threshold Testing: Given a specific rule within a relevant law - How does this rule relate to the norm of the threshold test?	Inference rules (Prakken, Sartor) - LegalRuleML	Argumentation Frameworks (?) Propositional networks (?)

Computational Law

Text	Deontic Logic Version	Ontology
A1 - Grants exclusive rights for a supplier to provide goods or services	If it is *permitted* to supply goods, AND it is *obligatory* that the supplier = 1 THEN (P(Supply Goods) ∧ (O(Supplier=1)) → (0 - No effect; 1 - Indirect Effect; 2 - Direct effect)	

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Law and Logic

"The life of the law has not been logic; it has been experience."
Oliver Wendell Holmes, Jr.

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Law and Logic

- Historical arguments
- Epistemological arguments
- Practical arguments

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Threshold Test

A. Limits the number or range of suppliers
A1 - Grants exclusive rights for a supplier to provide goods or services

Step 1 - Determine domain and scope

COMPETITION ASSESSMENT CHECKLIST

Competition assessment should be conducted if a legal provision has any of the following effects:

A — Limits the number or range of suppliers

This is likely to be the case if the provision:

- ☐ **A1** Grants exclusive rights for a supplier to provide goods or services
- ☐ **A2** Establishes a license, permit or authorisation process as a requirement of operation
- ☐ **A3** Limits the ability of some suppliers to provide goods or services

B — Limits the ability of suppliers to compete

This is likely to be the case if the provision:

- ☐ **B1** Limits sellers' ability to set prices for goods or services
- ☐ **B2** Limits freedom of suppliers to advertise or market their goods or services
- ☐ **B3** Sets standards for product quality that provide an advantage to some suppliers over others, or are above the

Step 2 - Consider existing ontologies

- Concepts and relationships in the OECD Guidelines - LegalRuleML for concepts related to law

- Concepts and relationships in the digital payments sector - Subset of the Financial Industry Business Ontology
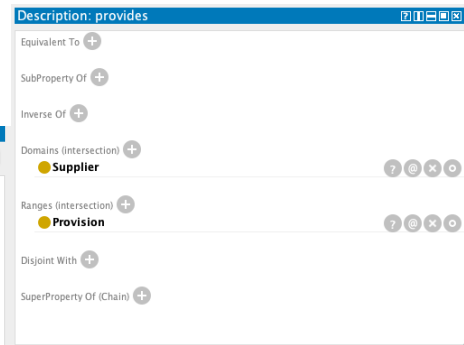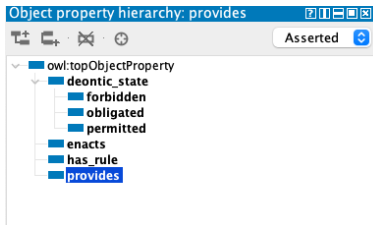
Step 3 - Enumerate Important Terms

Nouns	**Verbs/Adjectives**
Right	limit
Supplier	number
Goods	range
Services	grant
(State)	provides
(Law)	exclusive

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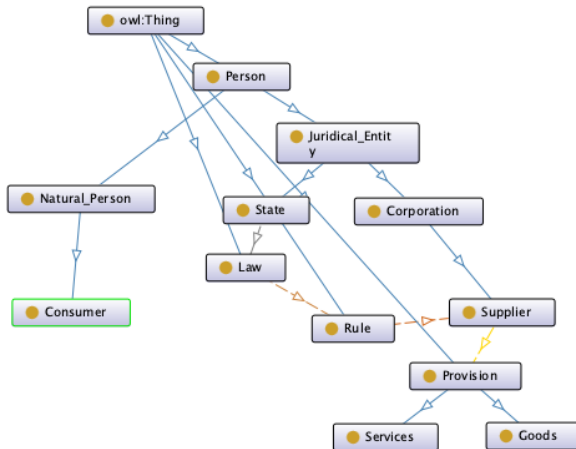○○○○●○○

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Step 4 - Design Class Hierarchy

Step 5 - Design Internal Structure of Classes

Step 6 - Define Attribute Restrictions

Analysis Preview

Demo: Constraints and Inferences - Who is an Aunt or Uncle?

Analysis Preview

Demo: Querying Facts

Next Steps

- Document assumptions and constraints
- Ontology as data structure (Python)
- Encoding the deontic logic

End

Thank you!

`emersonbanez.github.io/dissertation_`
`public`