

Applying lexical knowledge to improve search quality for a German legal information database **Master thesis kick-off presentation**

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- **Time:**
October 15th, 2014 to April 15th, 2015
- **Supervisor:**
Prof. Dr. Florian Matthes
- **Advisor:**
Bernhard Waltl

- 1. Motivation**
- 2. Research questions**
- 3. Research approach**
- 4. Methods and proposed solution**
- 5. Timeline**



- Very-often-performed task: Searching
- Finding information
- Increasing stored datasets
- Manual search becomes unfeasible
- Need to provide a more effective search tools
- Need of intuitive user interface
- User satisfaction



Applying lexical
knowledge

```
graph TD; A[Applying lexical knowledge] --> B[to improve search quality]; B --> C[for a German legal database];
```

to improve search
quality

for a German legal
database

- **Lexical knowledge**

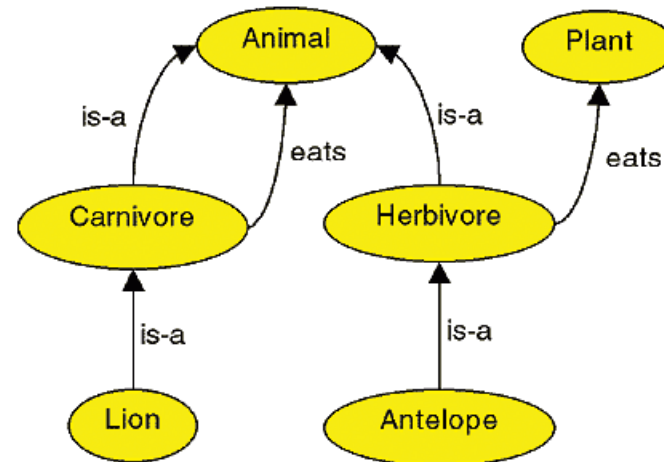
- All what we know about a word
- Relationships with other words
- Ontological categories (Relations, hyponyms, hypernyms, synonyms,...)

- Wordnet

- 117 000 synsets

- GermaNet

- 93 246 synsets



Applying lexical
information

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Applying lexical
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to improve search
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- Style of writing legal documentation – traditional format
- Frequently revised information
- Legal information is used as basis for building up cases, for resolutions, etc...
- In Germany exist:
 - 1924 laws
 - 3440 regulations } 76,328 articles



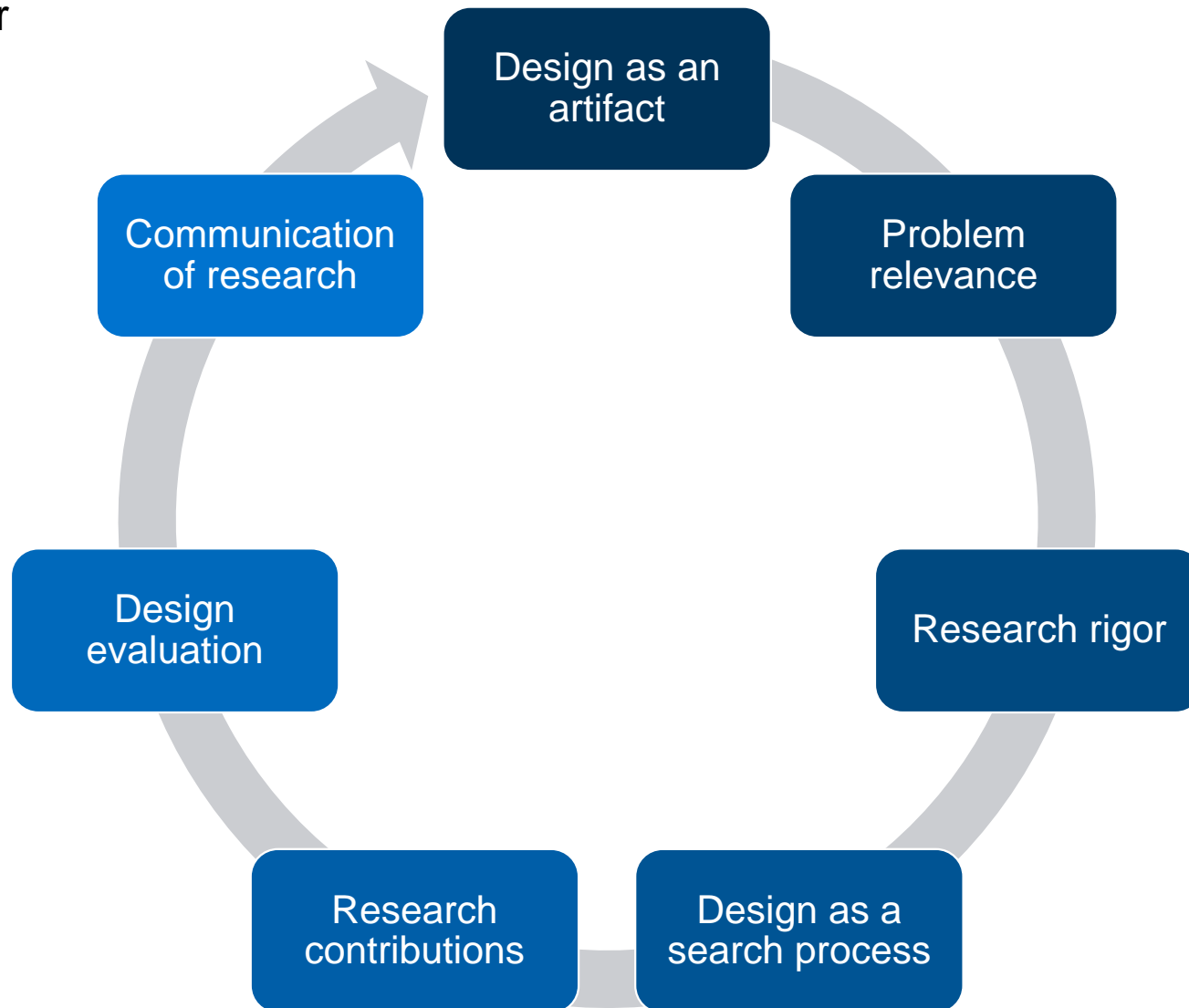
How can search quality be improved for a legal database?

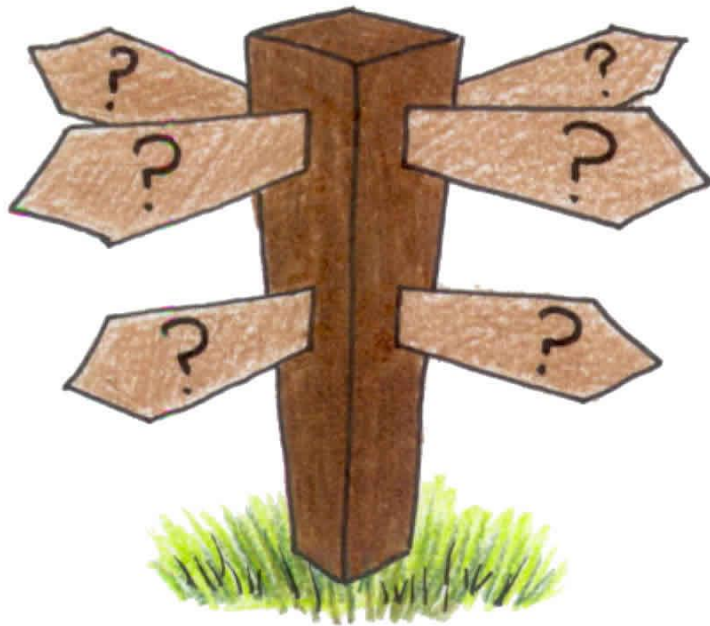
What mechanisms and methods for searching are common in legal databases?

What mechanisms can be enhanced by lexical information and how?

What possibilities exist that the lexical information about a word improves search quality?

- Hevner

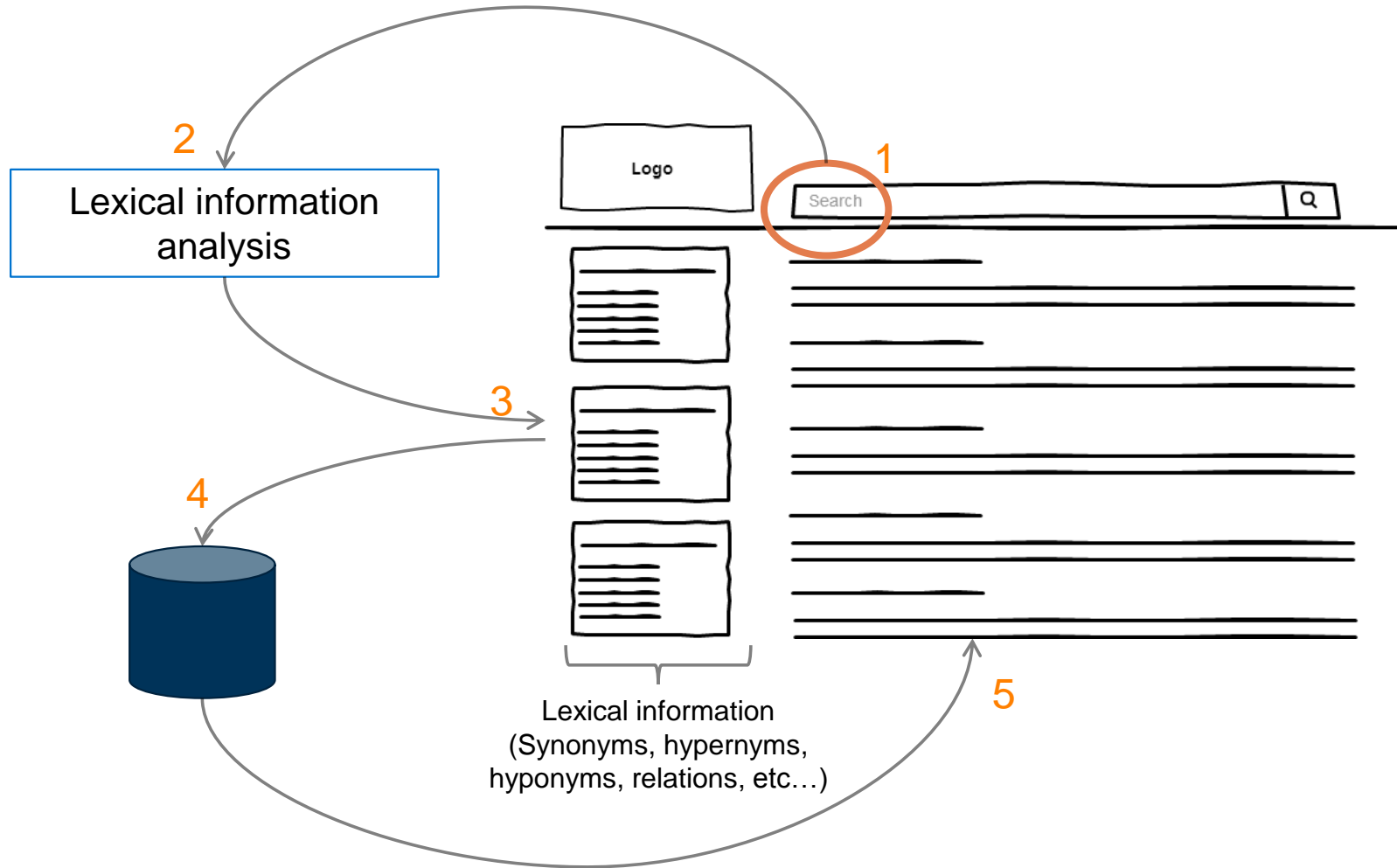




- Web-based
- Technologies

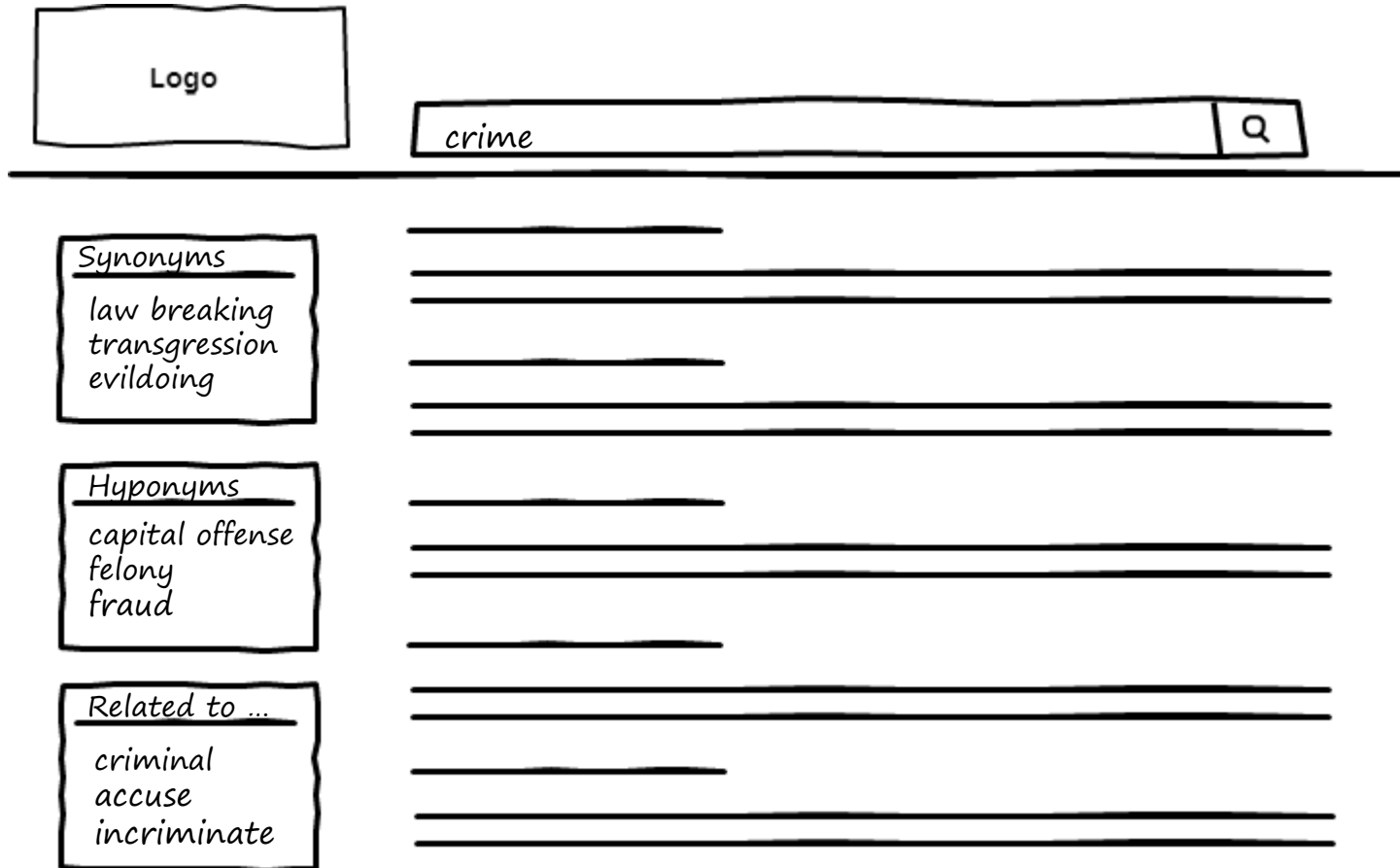


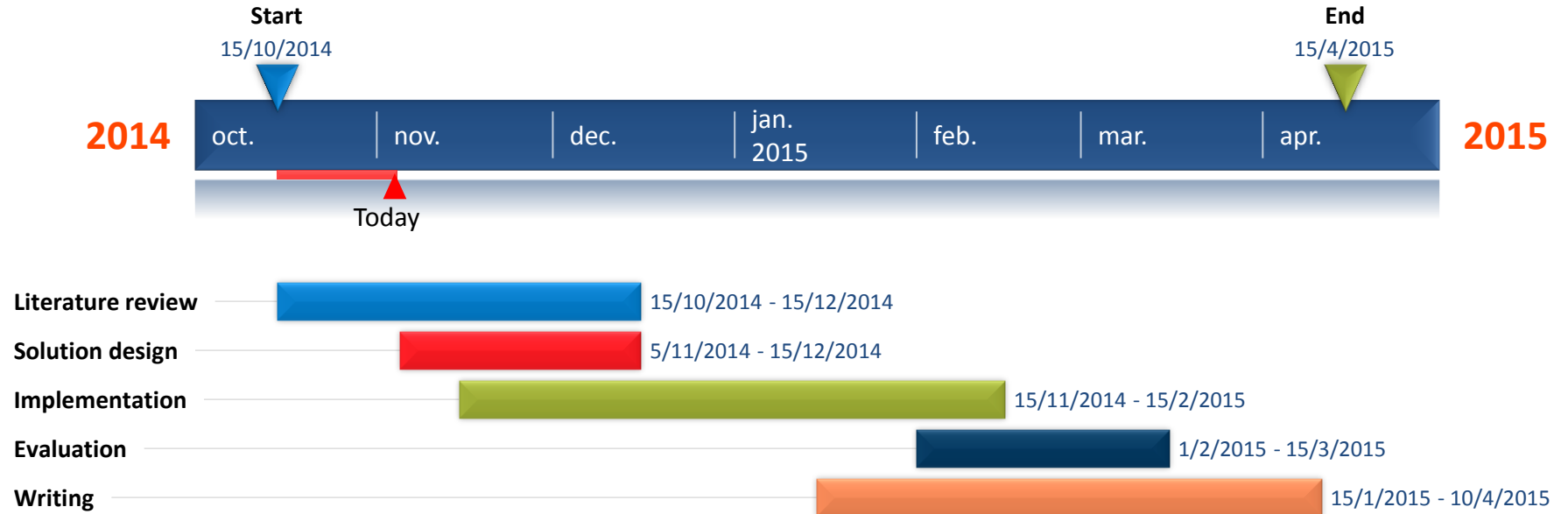
- Available algorithms for information retrieval



- Example (outcome overview)

Searching the word «crime»





Thank you for your attention!



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