

Towards a Structured Overview of Use Cases of Natural Language Processing in the Legal Domain

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Outline



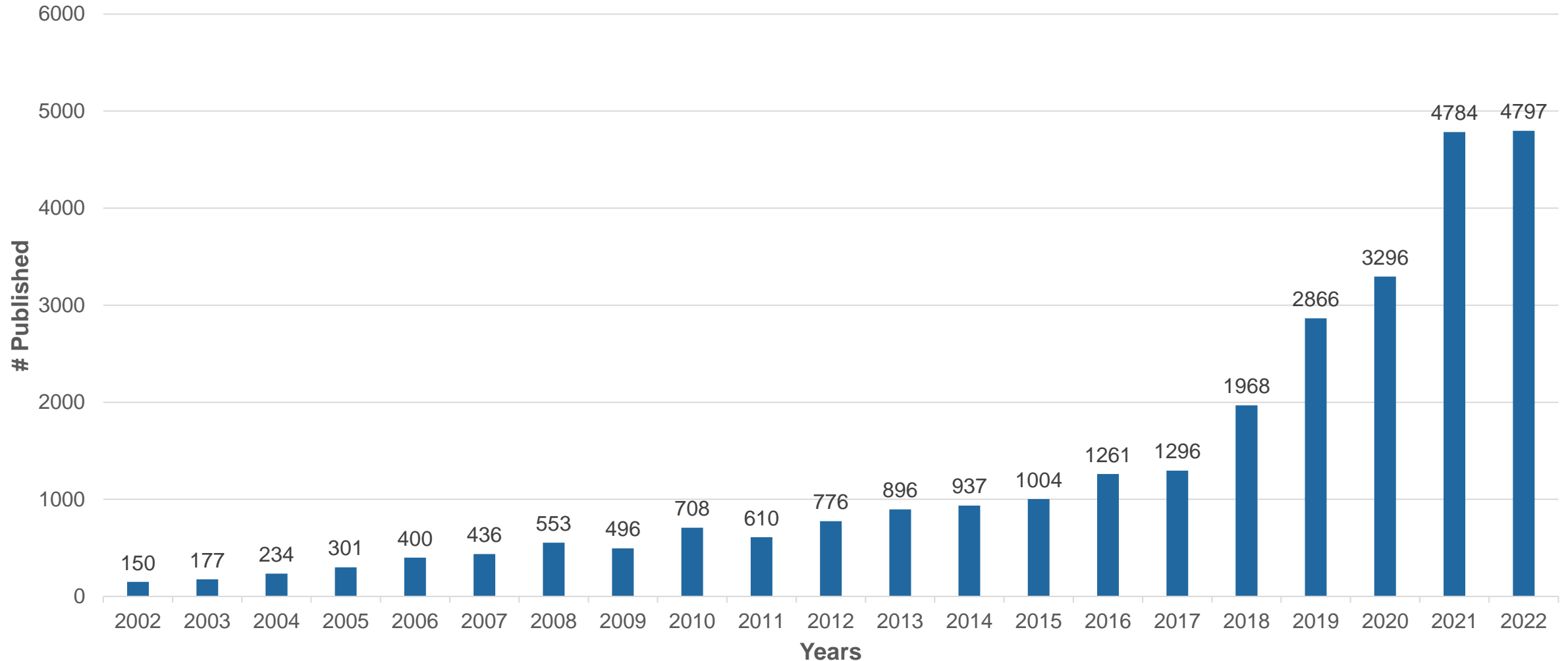
1. Motivation
2. Research Questions
3. Methodology incl. Initial Findings
 - Systematic Literature Review
 - Semi-Structured Interviews
 - Joint Knowledge Base
4. Timeline

Motivation – Natural Language Processing (NLP)

→ Big rise of NLP in academia



Scopus: NLP-Related Papers Published

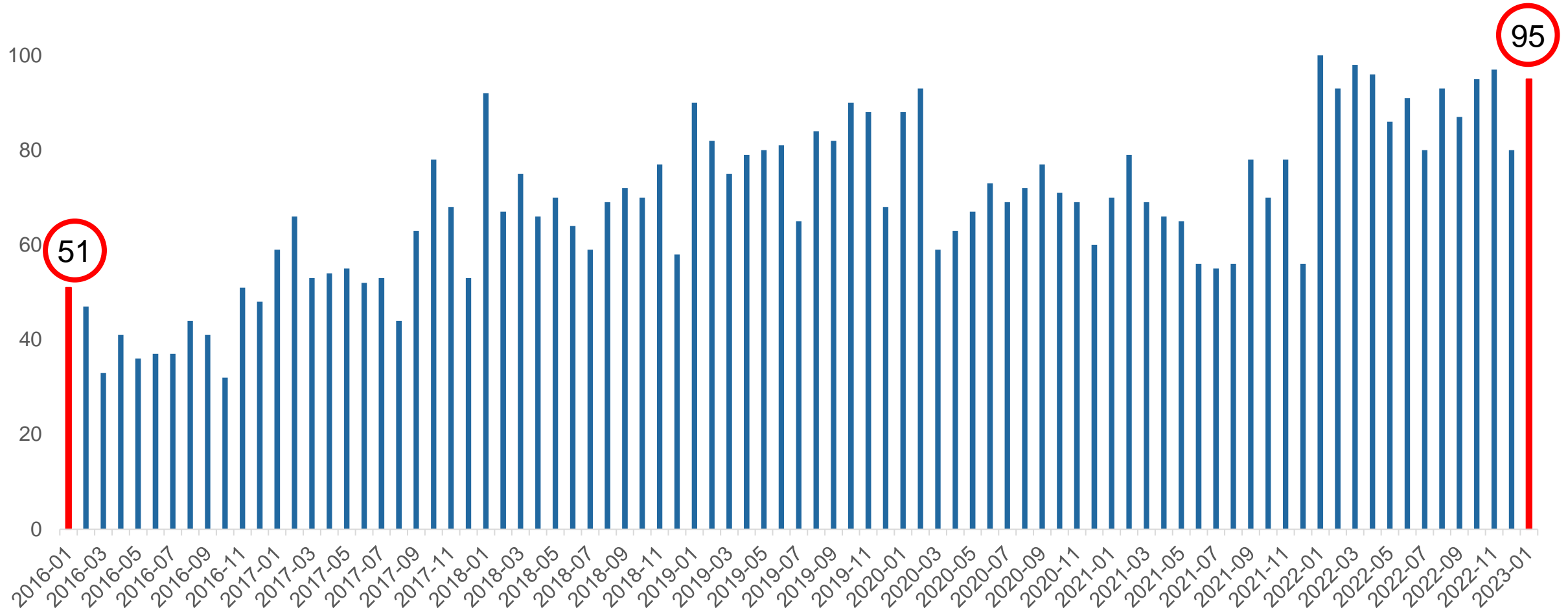


Motivation – The Rise of Legal Tech

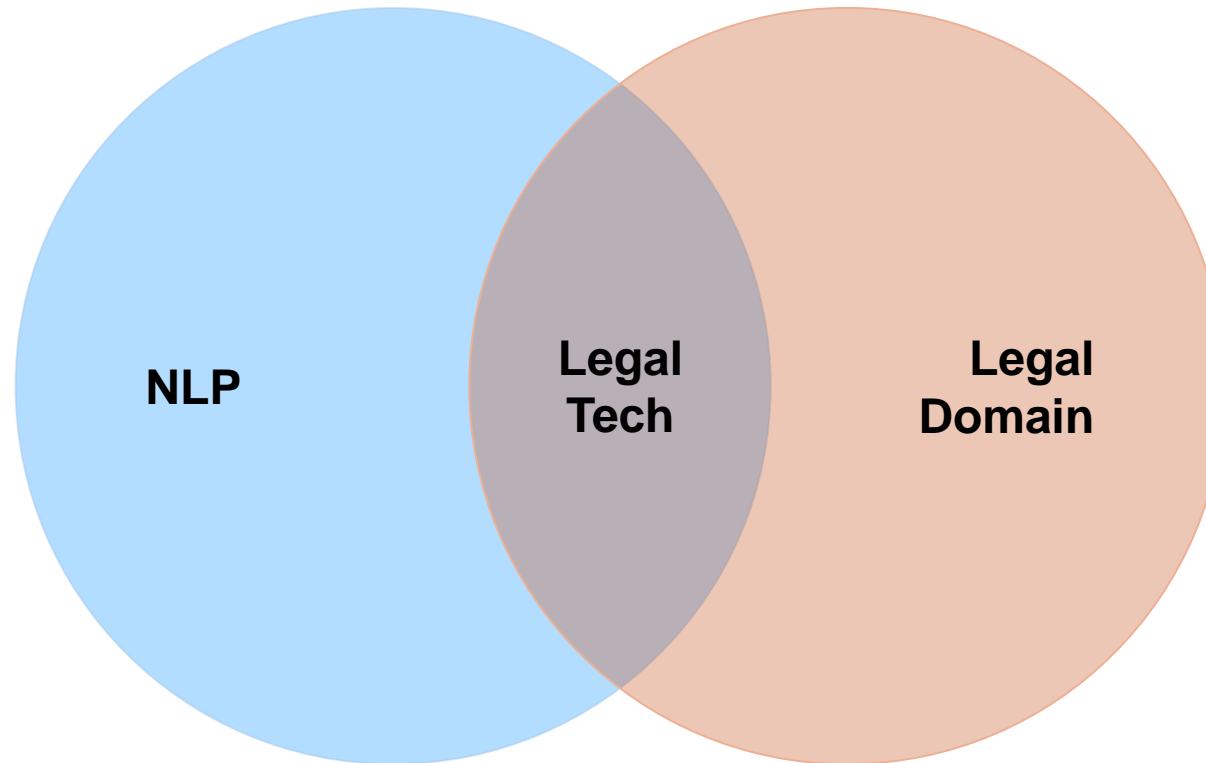
→ Interest in Legal Tech growing as well



Google Trends Analysis, how often the term “Legal Tech” was searched for

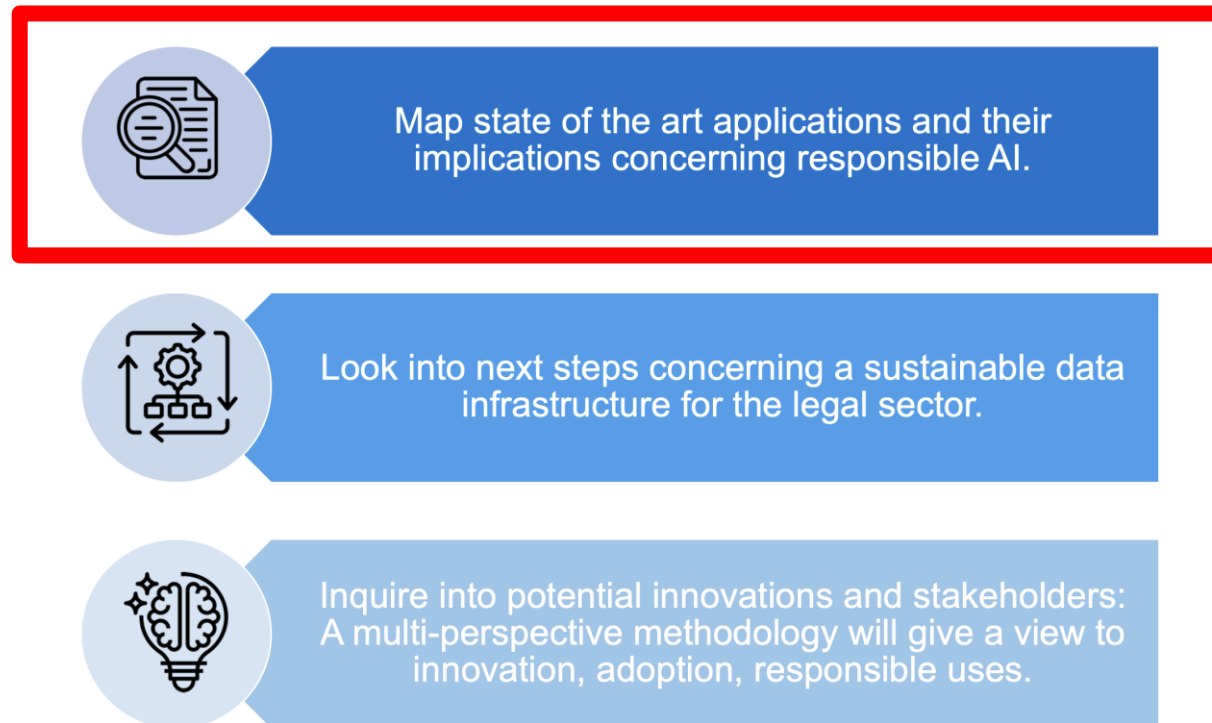


**How can we foster the use of NLP in the legal domain
in order to use its disruptive potential?**



Project NLawP – Natural Language Processing and Legal Tech

- How AI technologies can impact the legal sector
- Looking into requirements for adoption of NLP tools in Legal Tech and its ELS (Ethical, Legal, Societal) implications
- Bringing stakeholders together
- Workflow:



Thesis Title

Towards a Structured Overview of Use Cases of Natural Language Processing in the Legal Domain

1

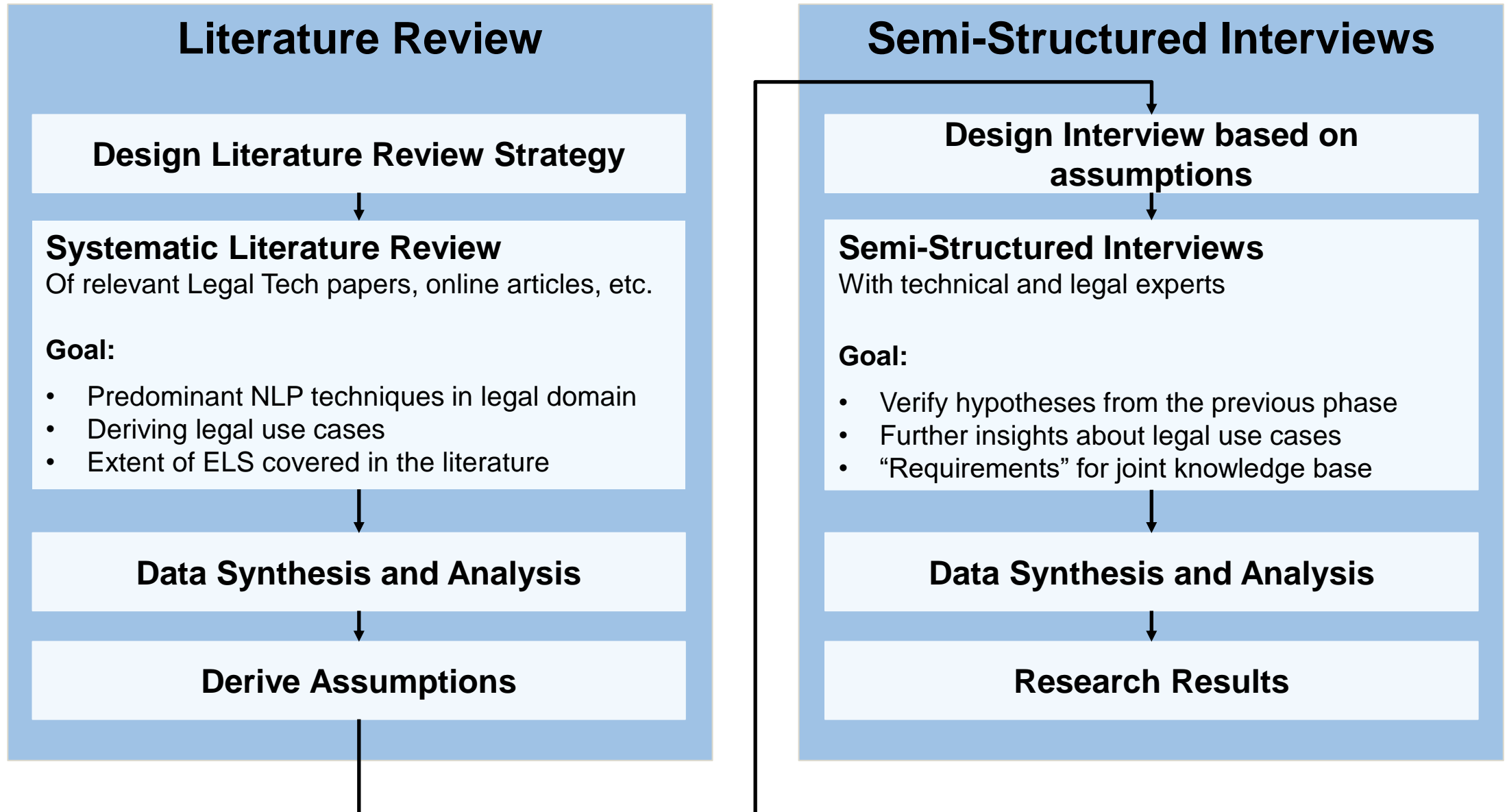
From a technical perspective, what are the predominant Natural Language Processing techniques being applied in the legal domain, and to what extent are ethical, legal, and societal aspects covered?

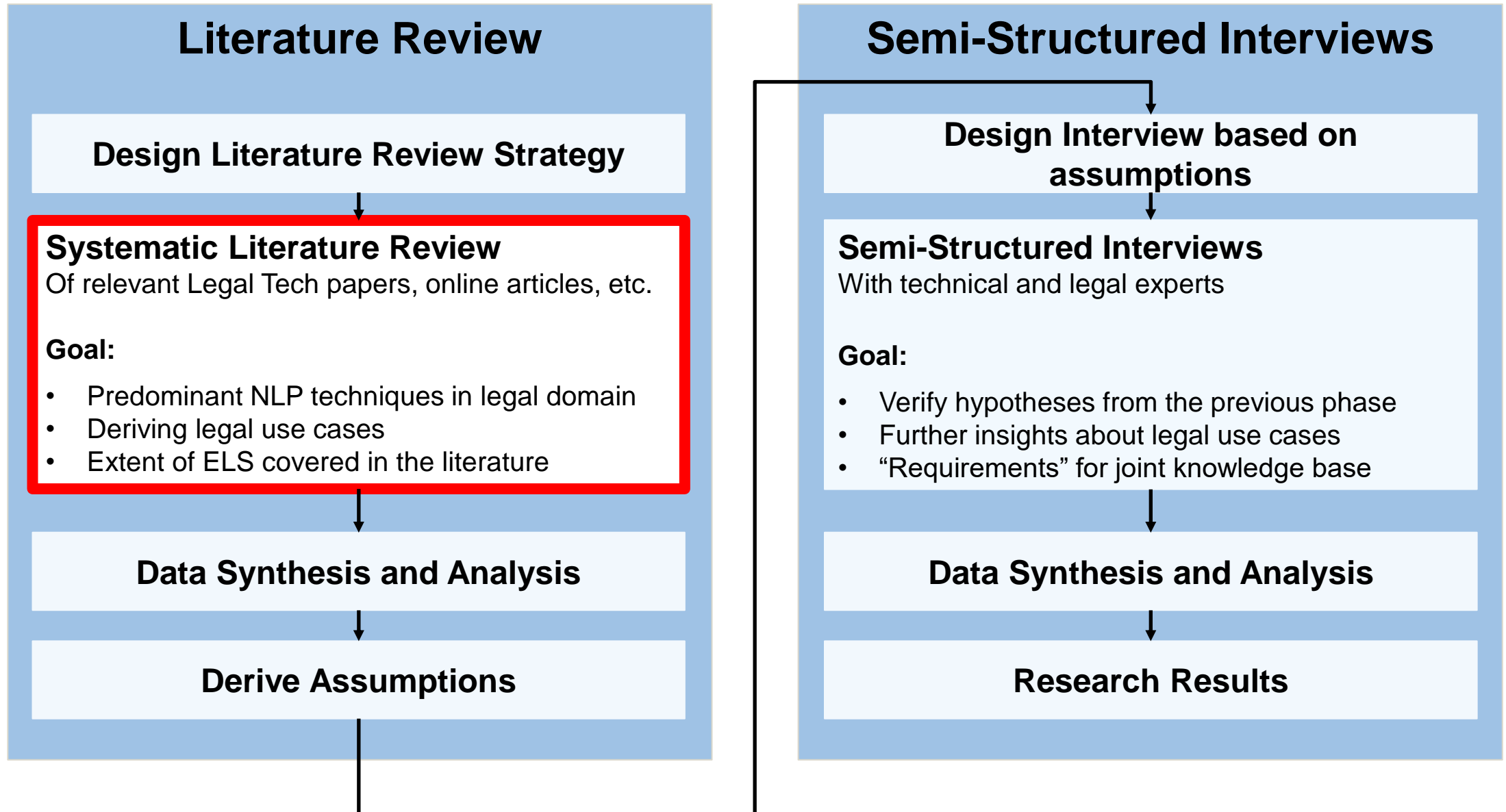
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What are the use cases in which the identified NLP techniques can be utilized?

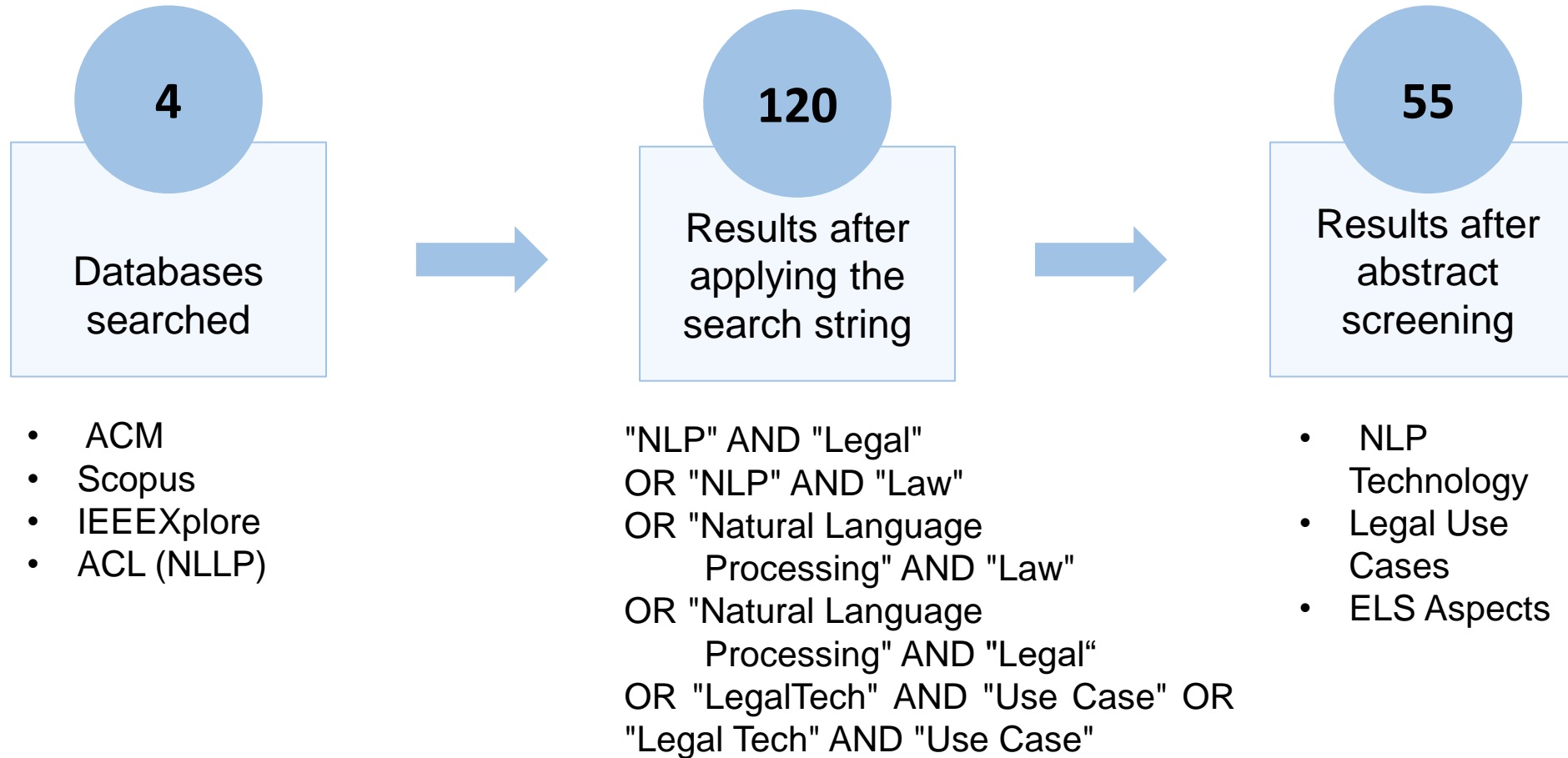
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Together with semi-structured interviews, how can the results of the systematic literature review be synthesized with legal expertise to form the basis of a joint knowledge base?





Systematic Literature Review: Status Quo



NLP Technology

- Ongoing Task: Structuring the NLP technologies used and forming categories
 - Many abstracts scanned in the fields Information Extraction, Information Retrieval and Question Answering.

Legal Use Cases

- Wording “Legal Tech” not as widely spread as expected
- Ongoing Task: Deriving use case categories
 - Many abstracts scanned in the fields summarization of legal documents or classification of documents.

ELS Aspects

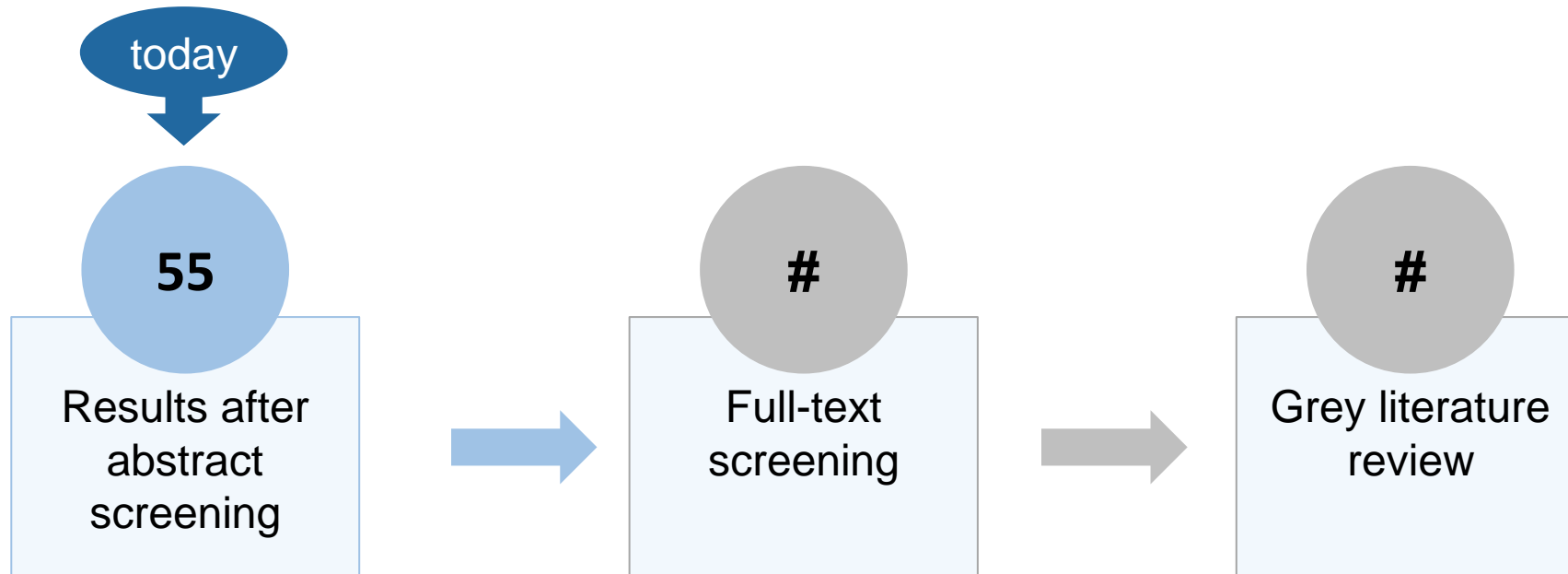
- In abstract: Focus rather on the motivation behind the development of a certain tool, instead of its implications. But there are some ELS-examples:
 - *“This, of course, does not rule out the need for highly qualified lawyers.”* [1]
 - *“... promoting the healthy development of enterprises and social stability.”* [2]
 - *“... social challenges of legal intelligence.”* [3]

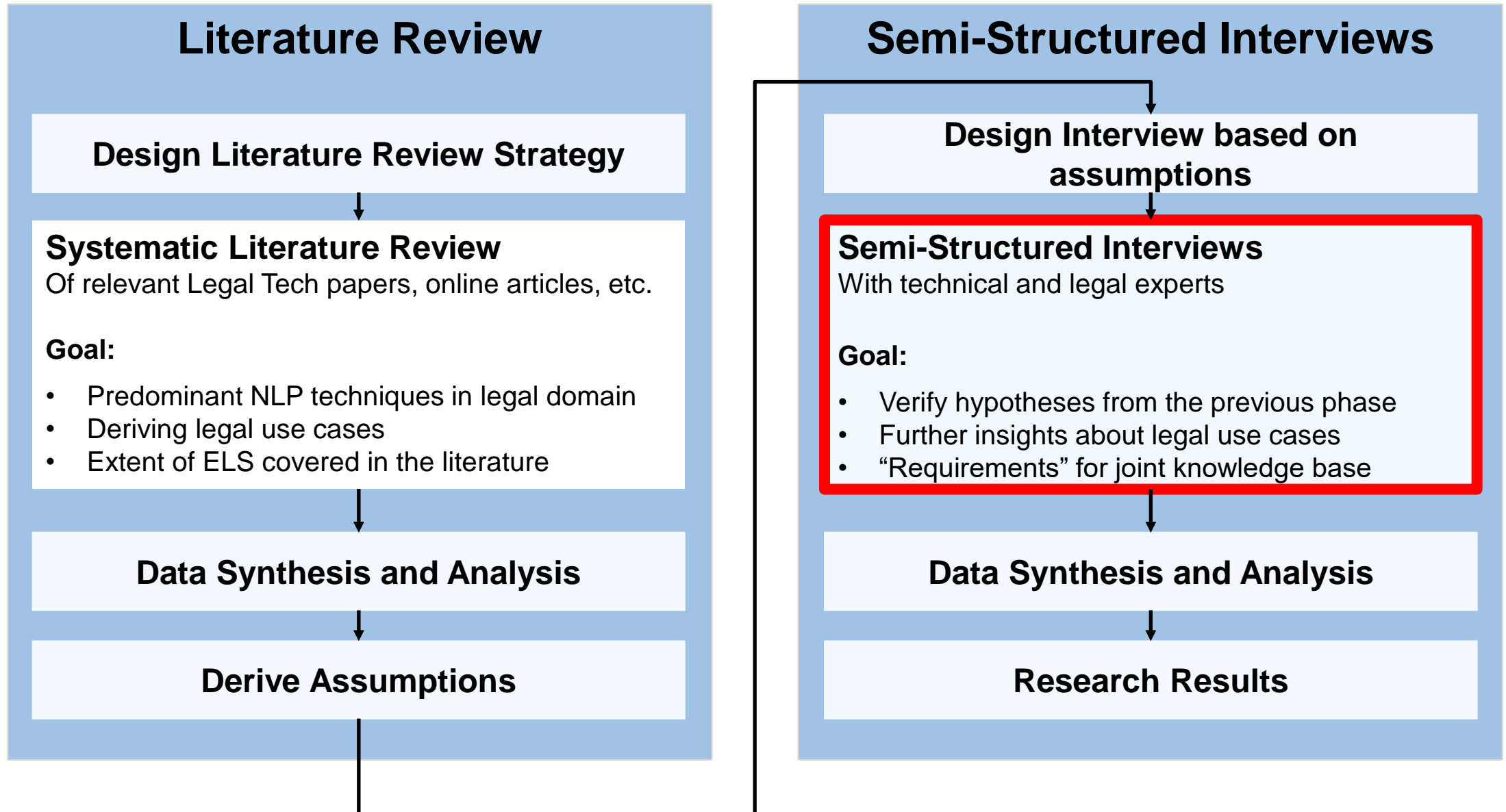
[1] K. Stoykov, S. Chelebieva: Legal data extraction and possible applicatoins

[2] Yaqin et al.: Design of Contract Review System in Enterprise Legal Department Based on Natural Language Processing

[3] C. Yating Zhan, X. Liu, F. Wu: Legal Intelligence: Algorithmic, Data and Social Challenges

Next Steps: Systematic Literature Review





Preliminary Plan

Planned Interview Partners



Legal Tech
experts from
the TU-9
Universities

Legal Tech
spin-offs and
startups

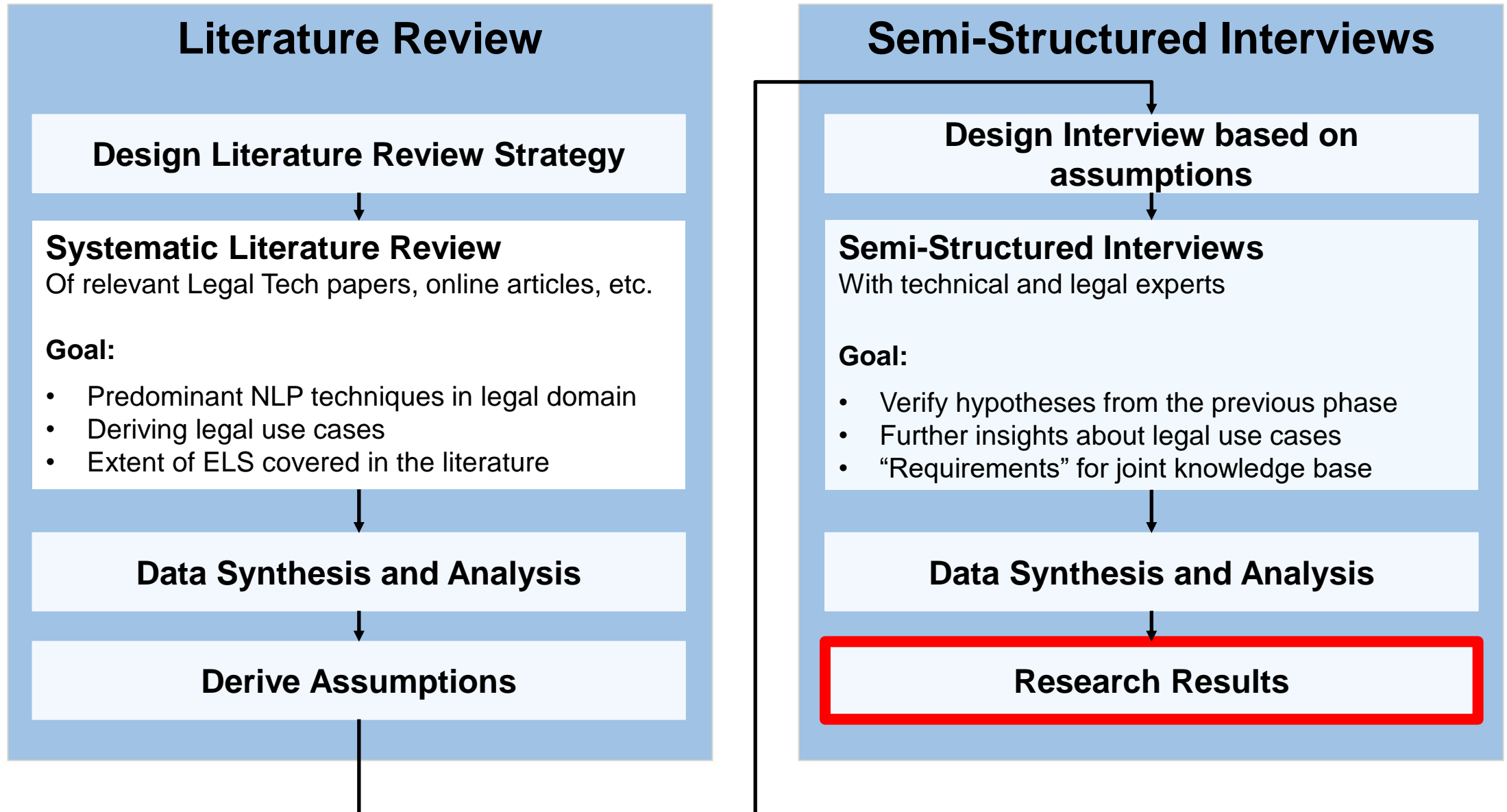


Lawyers with
different spe-
cialisations

Legal Tech
student
initiatives

Goals

- Gather further insights about the previously identified use cases
- Find out about new use cases
- Gather ELS-related insights
- Find out about the „requirements“ for a joint knowledge base



Next Steps: Basis for a Joint Knowledge Base

Stanford Techindex [1]

Discover Legal Technology

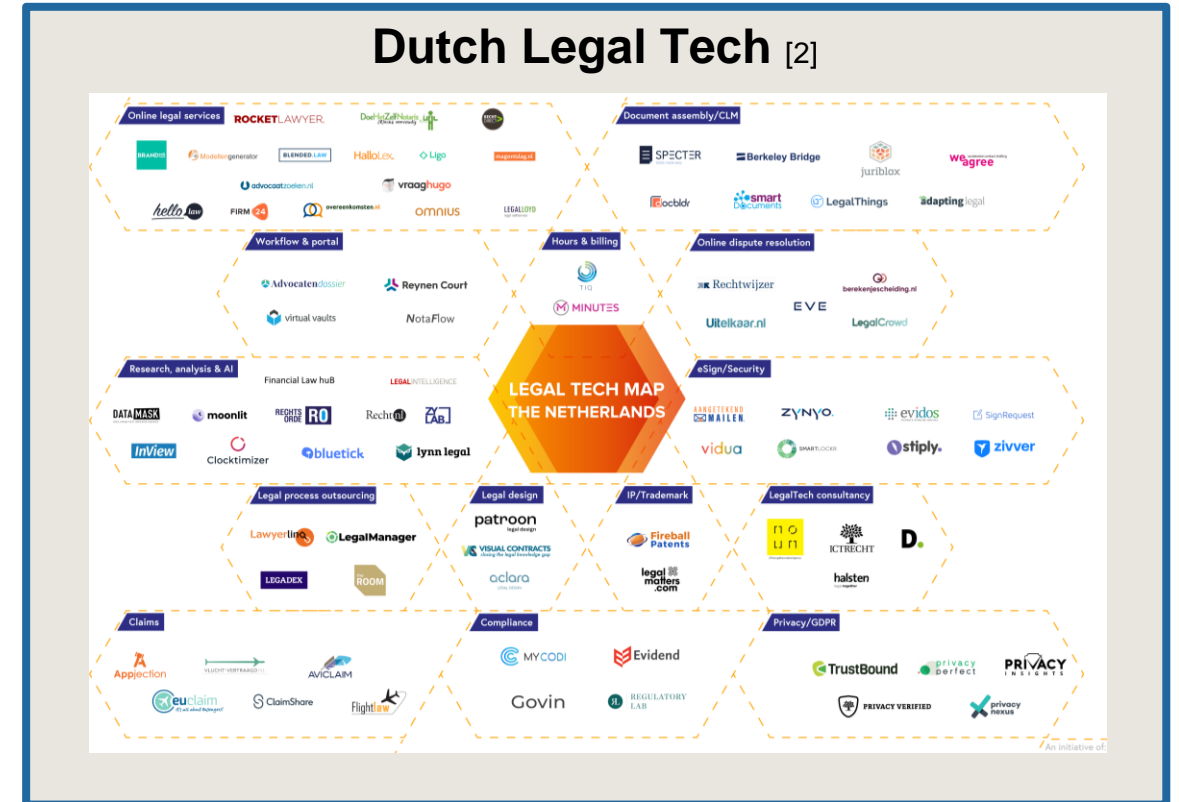
Explore a curated list of 2032 companies changing the way legal is done.

Search for a company

Analytics

Compliance

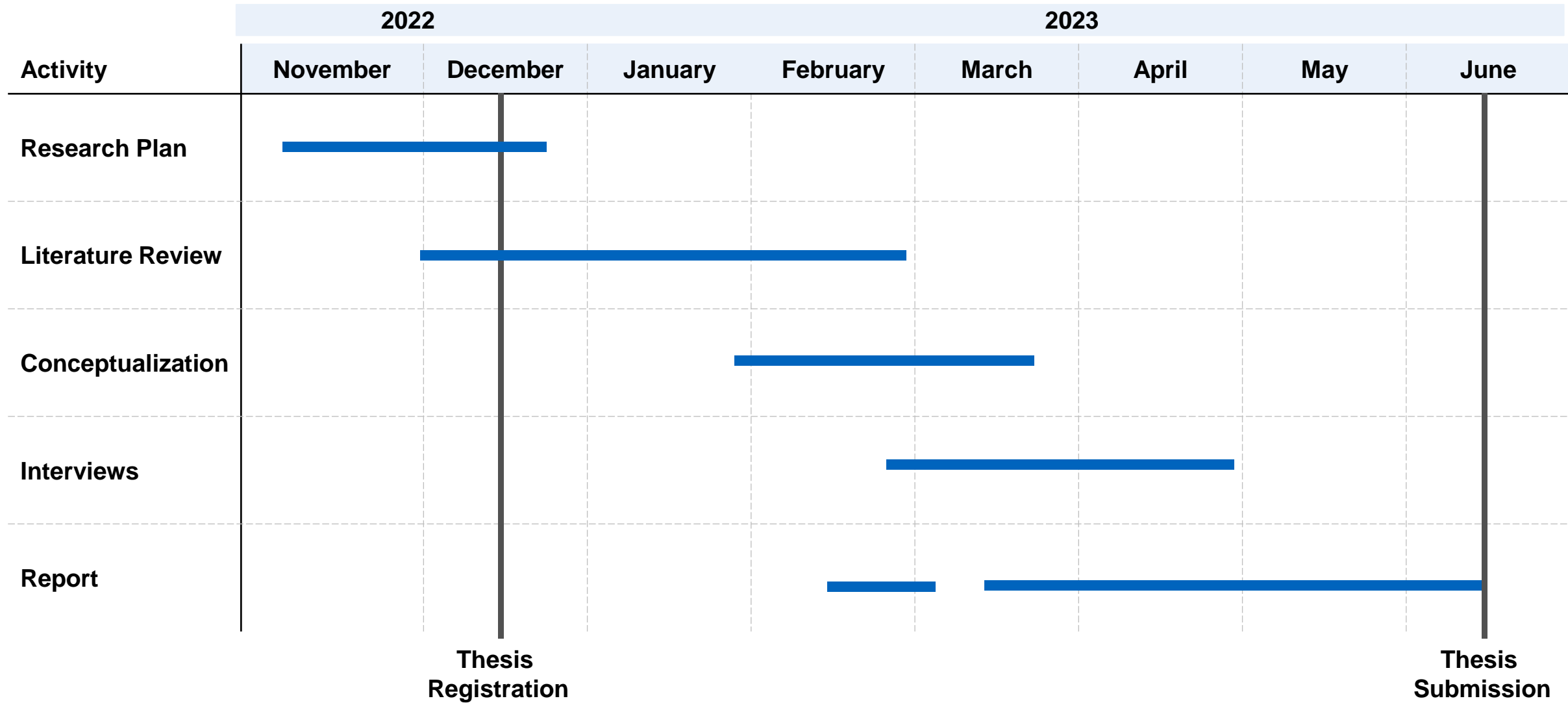
Document Automation



Observation

- Many tech-maps/Knowledge-bases already exist
- Mostly focus on browsing through Legal Tech companies
- **No focus on technology/use cases**

Timeline





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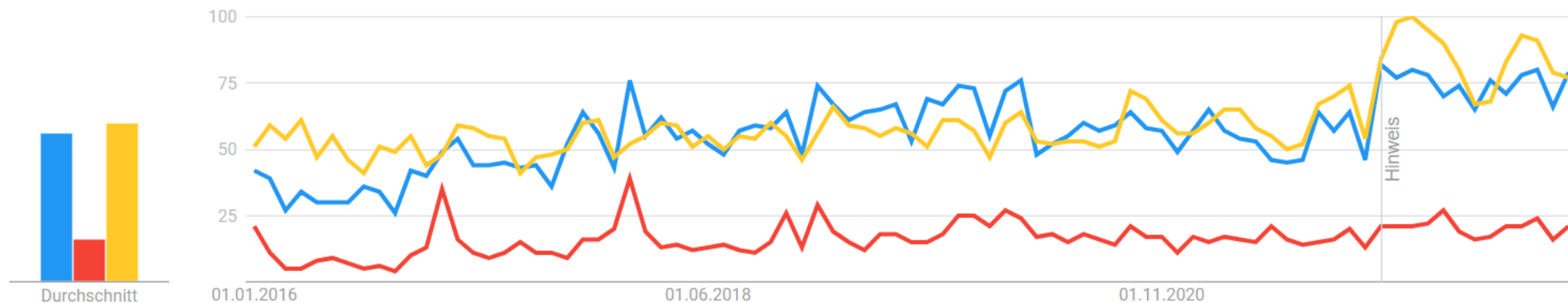


Appendix A: Use of the Different Search Terms

Legal Tech Suchbegriff LegalTech Suchbegriff Legal Technology Suchbegriff + Vergleich hinzufügen

Weltweit 01.01.16 bis 03.02.23 Alle Kategorien Websuche

Interesse im zeitlichen Verlauf ?



Source: [Google Trends](#)

