Smals KG Checklist – Part I

1	**Problem identification**	Identify a problem and use this document to determine whether a KG may provide or contribute to a solution.		
2	**Who are the stakeholders? What are the different types of stakeholder?**	The presence of multiple (types of) stakeholders is an indication that information needs to be accessible in a meaningful way.		
3	**What are the business concepts that are important in solving the problem?**	A list of (high-)level concepts will allow you to identify the information sources.		
4	**Answer these questions by filling in the table on the next page. Then follow the directions to circle "YES" or "NO".**			
	Do we need to integrate information and data from multiple (types of) sources?	• Domain knowledge • Unstructured data • Structured data • ….	Count the number of boxes that have been checked in sections I, II, III, and IV. If the number of checked boxes is greater than 1, then the answer is yes.	YES - NO
	Do we need to represent, share, use, reuse,… information in a meaningful way?	• Type hierarchies • Role hierarchies • Definitions and glossaries • Business rules • …	Count the number of boxes that have been checked in section I. If the number of checked boxes is greater than or equal to 1, then the answer is yes.	YES - NO
	Do we need to distill (implicit) knowledge and insights from the KG?	• Via schema reasoning • Via AI and ML techniques • Via applications • …	Count the number of boxes that have been checked in sections V, VI, and VII. If the number of checked boxes is greater than 1, then the answer is yes.	YES - NO
5	**Count the number of "YES" you have circled:** When that number equals 3, then the use of a knowledge graph seems appropriate. If not, then answer the following questions to see whether the use of a knowledge graph may become appropriate.			
6	If a KG were to be constructed: • **Are there other problems that the KG could help solve?** • **Would the integration of additional sources help solve other problems?** • **Are there other stakeholders that may find the KG useful?**	Answering these questions may allow you to identify other (potential) use cases for KGs.		

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Smals KG Checklist – Part II

I. Top-down ← *requires*

- ❑ Experts (domain, users,…)
  - ➢ _____
  - ➢ _____
- ❑ Schemas (conceptual, database,…)
  - ➢ _____
  - ➢ _____
- ❑ Ontologies, thesauri, standards
  - ➢ _____
  - ➢ _____
- ❑ Rules, laws, regulations
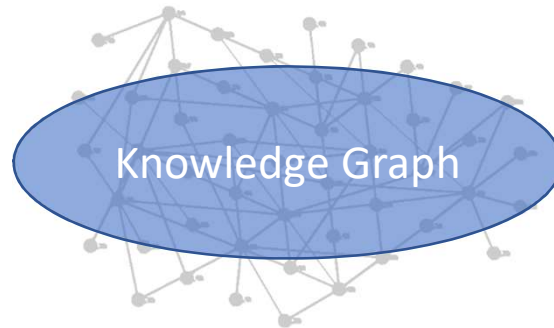 - ➢ _____
  - ➢ _____

V. Reasoning and inferencing

- ❑ Reasoning over concepts
  - ➢ _____
  - ➢ _____
- ❑ Reasoning over relationships
  - ➢ _____
  - ➢ _____
- ❑ Business and domain rules
  - ➢ _____
  - ➢ _____
- ❑ _____
- ❑ _____

VI. AI and Machine Learning

- ❑ Classification
  - ➢ _____
  - ➢ _____
- ❑ Prediction (labels, types, relations)
  - ➢ _____
  - ➢ _____
- ❑ Clustering
- ❑ Recommendations
  - ➢ _____
- ❑ _____

II. Bottom-up: structured data

- ❑ Systems, databases,…
  - ➢ _____
  - ➢ _____
  - ➢ _____
- ❑ Spreadsheets
  - ➢ _____
  - ➢ _____
  - ➢ _____
- ❑ Datasets
  - ➢ _____
  - ➢ _____
  - ➢ _____

Knowledge Graph

VII. Interaction and applications

- ❑ Search
  - ➢ _____
- ❑ Look up
  - ➢ _____
- ❑ Comprehend
  - ➢ _____
  - ➢ _____
- ❑ Explore
  - ➢ _____
  - ➢ _____
- ❑ _____
- ❑ _____

III. Metadata

- ❑ Knowledge enrichment
  - ➢ _____
  - ➢ _____
- ❑ Provenance (who, what, how,…)
  - ➢ _____
  - ➢ _____
- ❑ Governance (roles, responsibilities,…)
  - ➢ _____
  - ➢ _____
- ❑ _____
- ❑ _____

IV. Bottom-up: unstructured data

- ❑ Electronic documents and forms
  - ➢ _____
  - ➢ _____
- ❑ Physical and scanned documents
  - ➢ _____
  - ➢ _____
- ❑ Social media
  - ➢ _____
  - ➢ _____
- ❑ _____
- ❑ _____

Notes

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