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Application/Industry/Domain: Application challenges that may be amenable to semantic technology solutions

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**LOD is a great vision but limited for industry solutions**

**Limited to standardized RDF data**
Companies have today huge a amount of existing data in various formats and silos, which has to be used. This does not match with the limitation of LOD on a specific data format.

**Limited to standardized URIs for links**
An essential value of LOD are links between distributed data items. But they require a convention for identifiers, which are not practicable for distributed industry data silos.

**Limited scalability for corporate solutions**
LOD requires a migration of existing data into RDF and aggregation into a triple store, that multiplies the amount of data in a company.

**Limited to read access of data**
LOD allows mainly read access of data and not data production, modification, data processing or transaction in real time. This disqualifies LOD for most industry application

**Shifting the problem of heterogeneity**
LOD does not solve the challenge of data integration for industry application. It shifts the problem of heterogeneity of data formats to the heterogeneity of identifier and ontologies.

**Extended approach to build smart industry solutions**

**Extension to any data by efficient semantic integration**
The benefit an potential of LOD will be used by mixing up LOD with existing data sources in any format and silo by an efficient bottom-up approach.

**Extension to dynamic links by semantic analysis**
Distributed LOD could be productively used and enriched by creating dynamic links between data objects cross different sources beyond RDF and URIs.

**Extension to linked actions including graph manipulation**
LOD could be productively used by linking data objects with actions, which could be potentially performed on the data objects. It opens even a door for business models.

**Extension to scalable persistency concepts**
A scalable, lean persistency layer without federated queries or data migration in a huge triple store makes LOD practicable in an industry context.

**Extension to uniform information layer**
A uniform information layer makes make LOD easily accessible in the context of existing data silos and formats and simplifies the adaption of domain ontologies.

**Potential research activities**

**SPARQL endpoint for uniform information layer**
Using a query language standard to query graphs in a complex way to benefit from the real potential of aggregated and linked data beyond LOD and RDF.

**Performing ontologies on data sets generically**
Bridging the gab between abstract domain knowledge and real data by automatically performed ontologies in an analyzer chain.
Consuming and producing LOD generically
Benefit from mixing up LOD to enrich internal company data and publish internal data to the LOD cloud for new business models in an automatically process.