Data Sharing in Business Ecosystems

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Asset sharing has gained popularity in many domains, such as cars (e.g., Zipcar, Car2Go), apartments (e.g., AirBnB, HomeExchange), or equipment (e.g., Floow2, Yard Club). It allows using durable goods and other assets more intensively, and involves examples of both collaborative consumption and production. The common denominator is the optimization of under-utilized assets by pooling or sharing them through digital platforms. The sharing idea is increasingly transferred to data assets: In research, data sharing has been found to stimulate progress and innovation, improve quality of data collection, help uncover errors, and increase the reproducibility of academic studies. Despite being promoted by policy-makers and funding agencies, research data sharing remains a conundrum, as most disciplines still lack data sharing mechanisms and practices. A similar situation prevails in enterprise data: Although data sharing is considered as beneficial, most companies manage their data in silos. This implies that suitable data sharing practices and mechanisms along the data life-cycle are yet to be developed.

This talk presents a unique, longitudinal case of a pioneering data sharing community. The community started in 2013 as industry-funded research consortium with the goal of improving data quality and reducing maintenance efforts for non-competitive master data through data sharing (Schlosser 2017). The group worked together for several years to define data sharing mechanisms and a data sharing platform for business partner data (i.e. supplier and customer data). As of today, it comprises 15 global companies that use productive data sharing. From this longitudinal case, we derive insights into data sharing mechanisms in the enterprise context:

1. *Shared data knowledge ("semantics"):* The group started with gathering essential knowledge about the data to be shared. It established shared semantics in the form of a data model, but also business rules and external reference data. Documenting this data knowledge using semantic concepts, such as linked data and knowledge graphs, allows defining business-level concepts and executing them in heterogeneous systems.
2. *Shared data assets ("peer-to-peer sharing"):* Based on these shared semantics, the peer-to-peer sharing was designed to allow participants to collaboratively maintain business partner data and achieve higher data quality. It relies on collaborative, cross-company workflows at the level of individual data records with integration into backend systems (typically ERP systems from SAP, but also CRM systems, such as Salesforce.com).

The case demonstrates the practical implementation of enterprise data sharing in cross-industry business ecosystems. It represents a specific form of data sharing that focusses on data quality and maintenance, thereby exposing similarities with producer communities. Future research is needed to compare it to other emerging forms of data sharing, that aggregate data from multiple data sources and focus on advanced data analytics (e.g., Skywise, an industry platform launched by Airbus in collaboration with Palantir Technologies).

References:
Schlosser, S. (2017): Design principles for collaborative data services, Dissertation, Univ. of St. Gallen