Data Sharing in Business Ecosystems

TREO Talk Paper

Abstract

Asset sharing has gained popularity in many domains, among them cars (e.g., Zipcar, Car2Go), apartments (e.g., AirBnB, HomeExchange) or equipment (e.g., Floow2, Yard Club). Asset sharing 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 is promoted by policy-makers, funding agencies and research councils. It has been found to stimulate progress and innovation, improve quality of data collection, help uncover errors, and increase the reproducibility of academic studies. However, research data sharing remains a conundrum, and most academic disciplines still need to develop and adopt sharing mechanisms and practices. A similar situation prevails in enterprise data: Although data sharing is increasingly 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.

In this paper, we study a unique, longitudinal case of a pioneering data sharing community. This 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. The group worked together over 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, the data sharing community comprises more than 15 global companies from different industries that use productive data sharing with workflow integration into their backend systems (typically ERP systems from SAP, but also CRM systems, such as Salesforce.com). From this longitudinal case, important insights into data sharing mechanisms in the enterprise context can be derived:
1) Shared data knowledge ("semantics"): Data sharing requires agreed-upon data standards and conventions, which are often lacking for enterprise data. Hence, the group started with gathering essential knowledge about the data to be shared (here: business partner). 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"): The peer-to-peer sharing was designed to allow participants to collaboratively maintaing business partner data and achieve higher data quality. It relies on collaborative, cross-company workflows and integration into backend systems at the level of individual data records.

The presented case demonstrates the practical implementation of enterprise data sharing in an emerging business ecosystem. The case represents a specific form of data sharing that focusses on data quality and maintenance, thereby exposing similarities with producer communities. Future research will be needed to analyze the commonalities with other emerging forms of data sharing, that aggregate data from multiple data sources and focus on advanced data analytics, such as Skywise, an aviation's platform launched by Airbus in collaboration with Palantir Technologies.