Industry Case Study

How Engineering and Construction Companies Optimize Costs and Avoid Incidents Using a Linked Data Strategy

A Linked Data strategy transforms any kind of enterprise data into graph-based data to make it accessible, reusable, and interpretable. This industry case study introduces how Engineering and Construction (E&C) companies offset increasing client's demands with improved data management based on a semantic knowledge graph. Project managers, domain experts, mid- and upper-level management profit from interconnected data that is easier to find, search and analyze. Increased data quality yields better decision-making, helping to save costs and mitigate safety and process risks.

Industry

✓ Engineering & Construction

Business Users

✓ Subject Matter Experts
✓ Project Managers
✓ IT Management
✓ Management

Challenges

✓ Real effort in bringing data together.
✓ Lack of consistency in the status of data.
✓ Difficult tracking of changing datasets & source systems.
✓ Inability to smartly query the data.

Key Benefits

✓ Agile Data Integration
✓ Data Quality
✓ Data Exploration and Discovery
✓ Data Governance

Situation: Clients Demand Faster and More Cost-Efficient Performance

Several trends are reshaping the engineering and construction industry for the upcoming years: Contracts migrating to lump-sum, turnkey (LSTK) contracts, an increase in competition from players in China, Korea, and India, as well as conservative investment in case oil prices drop again. In response to these trends, companies must become more flexible and proactive. In an increasingly dynamic environment driven by globalization, data management is highly relevant but seemingly cumbersome. Information that is mostly stored in relational databases may not integrate well with other systems. E&C companies are struggling to link and share their changing data and source systems. There is no reliable overview of the status of data handled cross-departmental and between similar projects. Companies need a unified data definition to make knowledge reusable across the organization. Data must provide actionable insights in order to assist in cost-savings and to be consistently ahead of safety and process risks.

Approach: RDF Data Modelling for Agile Data Integration and Exploration

Data transformed into Semantic Web standards, such as RDF (Resource Description Framework), links data elements across disparate systems. RDF is a standard that describes concepts and its relationships within and across heterogeneous data sets. Information is then accessible for both, machines and people. All content produced by experts, project managers, departments, business units, etc. will be made accessible through a semantic data lake with a single point of access to various kinds of information. End users will have a better understanding of the data. Following up on data status and ownership becomes transparent. A knowledge discovery application will replace traditional and inefficient document exchange. Semantic search will help you reach answers to engineering questions, applicable to your project discipline. Based on a more consistent data management, PoolParty helps to underpin all efforts in the areas of data reuse, data sharing and data linking within a governance framework.
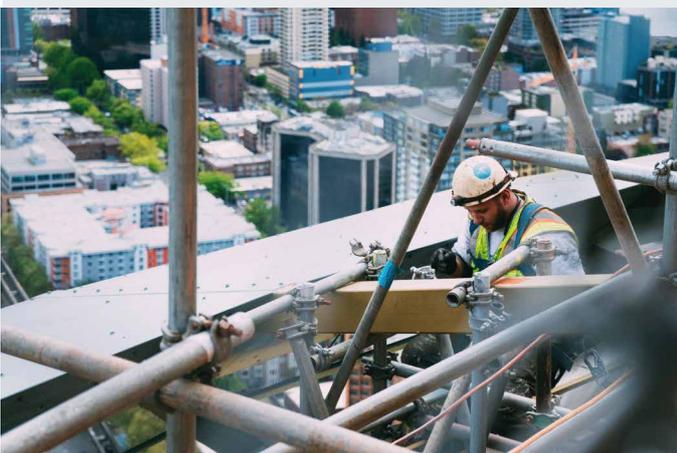
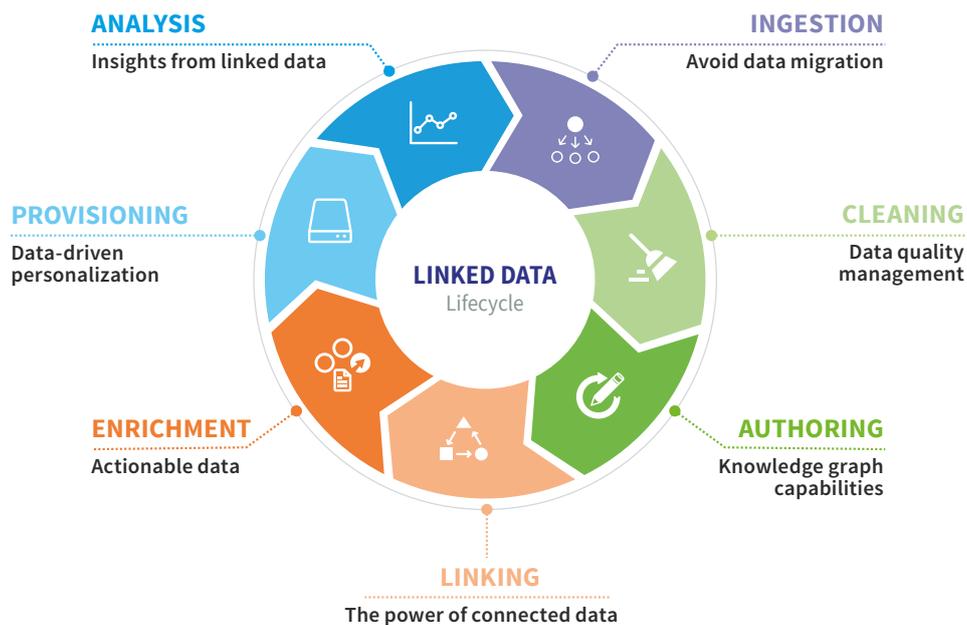## Solution: Higher Data Quality with Semantic Technologies & Linked Data

E&C companies are able to profit from higher data quality by implementing a linked data strategy with PoolParty. There is an imperative need to identify bloated costs and reduce them as the shift to LSTK contracts continue, making well-documented data a must. Semantic technologies describe the data model and the data itself with RDF, making it easier to understand and interpret. Improving operational efficiency in data management can help project managers better handle RFPs (Request for Proposal). For example, employees easily find out the latest version of an RFP or if similar equipment has undergone a bidding process. To a large extent, linked data provides more context and meaning to data, which helps to reuse content more often. In addition, data reuse will facilitate more scrutiny and error detection, thus ensuring higher data quality.

Possible Next Steps: Think Big, Start Small, Learn Fast!

Semantic Web standards provide enterprises with a foundation for rich capabilities such as impact analysis, reporting, and deep querying across multiple domains. Linked Data also lets you create information networks including business rules for smart risk management. When changes in your ecosystem occur, you will get immediate alerts. Smart predictive systems generate operational efficiency and cost savings. Process automation based on knowledge graphs, machine learning, and NLP brings human-level performance and accuracy to the automation of complex information-based processes.

Implementation Insights

PoolParty's latest release supports a systematic implementation of semantic knowledge graphs along the whole Linked Data Life Cycle.

ANALYSIS
Insights from linked data

INGESTION
Avoid data migration

PROVISIONING
Data-driven
personalization

CLEANING
Data quality
management

ENRICHMENT
Actionable data

AUTHORING
Knowledge graph
capabilities

LINKING
The power of connected data

LINKED DATA
Lifecycle

REACH OUT TO US

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