Visualizing the Potential for Knowledge Transfer in Research Museums

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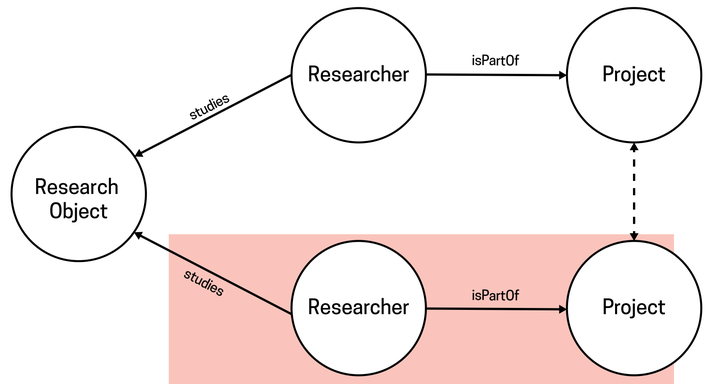
www.mi.fu-berlin.de/en/inf/groups/hcc/projects/ikon/index.html

The Natural History Museum in Berlin (Museum für Naturkunde - Leibniz Institute for Evolution and Biodiversity Science) is the largest of its kind in Germany and is among the top 10 world-wide. The museum is home to over 30 Mio. collection objects, more than 250 researchers and more than 400 research assistants as well as PhD students, from disciplines such as biology, paleontology, mineralogy and information science.

Behind the publicly accessible spaces, these researchers work on manyfold projects in a multidisciplinary research setting. To bolster the MfN's efforts at ensuring knowledge transfer throughout its organisation, the HCC collaborates with the MfN in this BMBF-funded project to unveil the currently tacit knowledge, competencies, methods and research project information to the employees of the Museum.

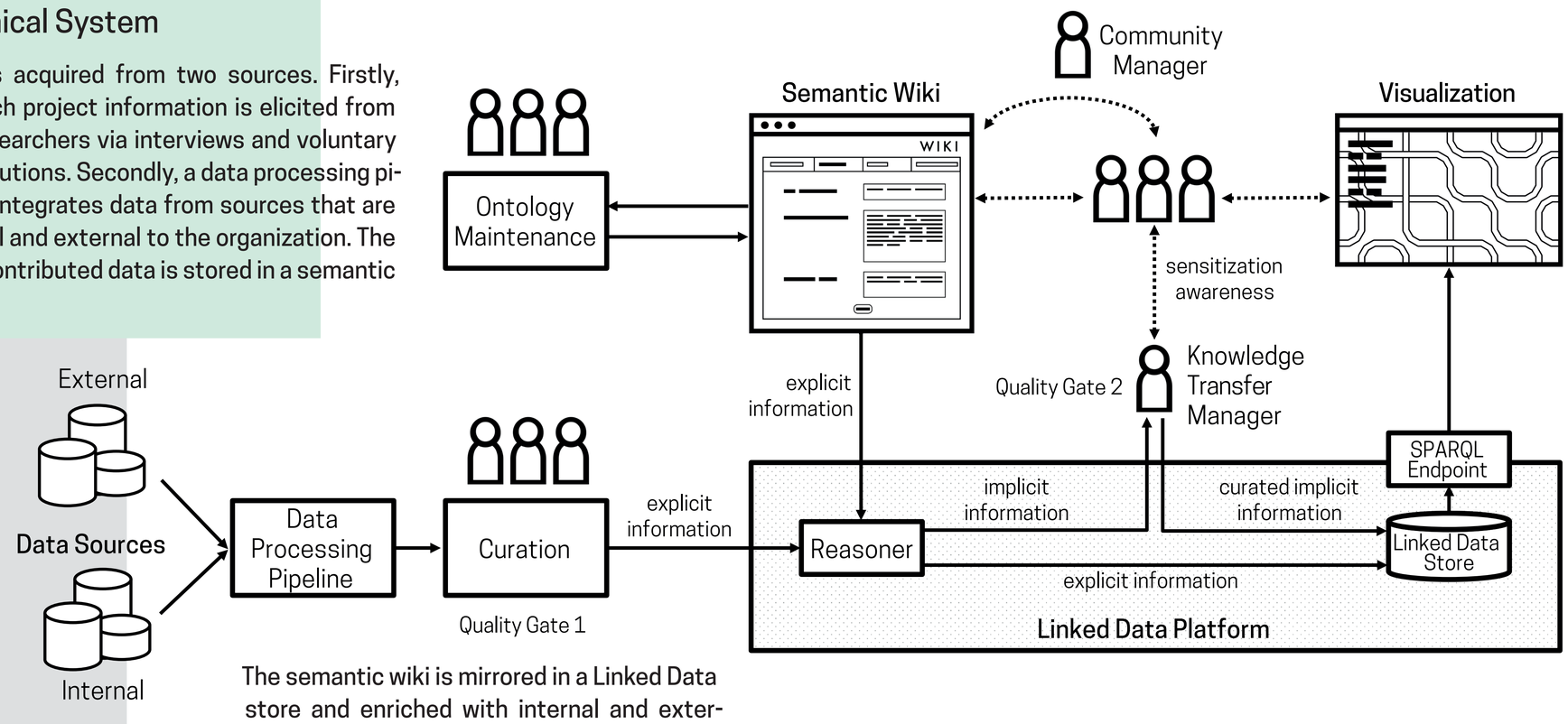


Example of an implicit potential for knowledge transfer (dashed line) between two projects.

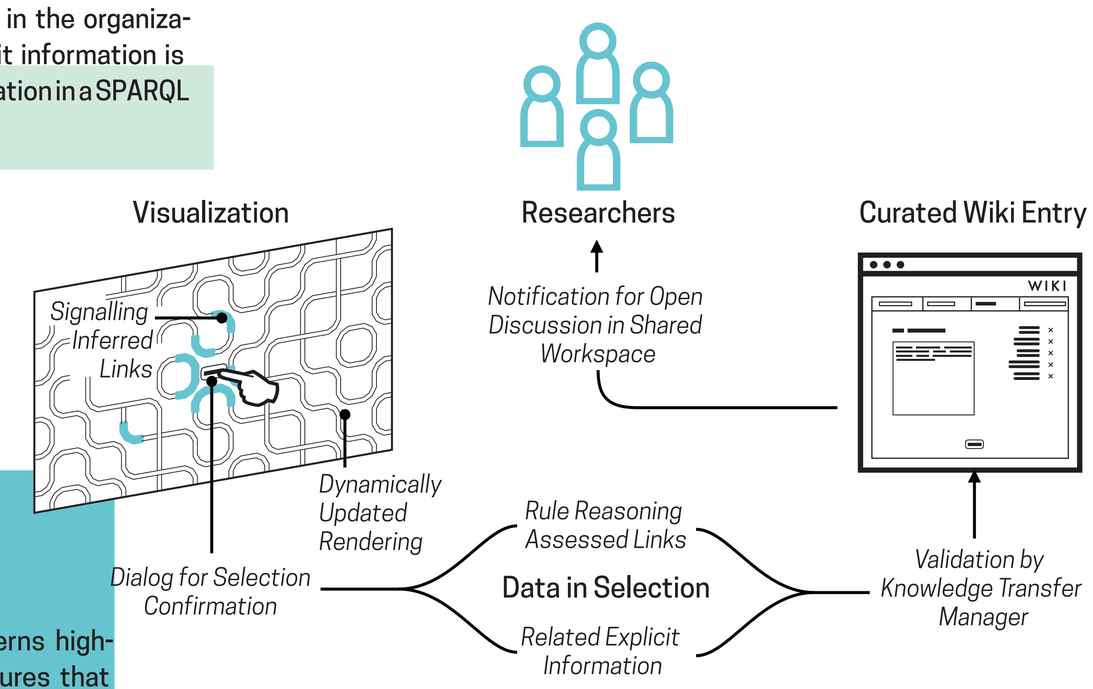
We aim to provide the researchers at MfN with (1) Wiki-based read and write access to research project information, (2) insights about potentials for knowledge transfer powered by linked data and (3) interactive visualisations of these networked sources of knowledge. Focussing on the seamless integration of these provisions, the HCC aims to set up an actionable and holistic system that visualises research project data and their potential for knowledge transfer in research museums like the MfN.

Architecture of the Socio-Technical System

Data is acquired from two sources. Firstly, research project information is elicited from the researchers via interviews and voluntary contributions. Secondly, a data processing pipeline integrates data from sources that are internal and external to the organization. The user-contributed data is stored in a semantic wiki.



The semantic wiki is mirrored in a Linked Data store and enriched with internal and external data. Using automated rule reasoning, we will uncover implicit potentials for knowledge transfer between the actors in the organization. Both explicit and implicit information is made available to the visualization in a SPARQL endpoint.



Designing for Collaboration on Inferred Knowledge

In the visualization, signaling patterns highlight inferred information. This ensures that even cursory glances might transmit a trace information of existing potential in the visualization. Tactile interaction with the highlighted and proximate, yet not explicitly related information opens a dialog. This is followed by confirmation to submit the given set of inferred information to the semantic wiki, pending review. The latter process is undertaken by the Knowledge Transfer Manager, assessing the combination of inferred and connected explicit information as to the benefit to the community.

Upon the decision to publish, the assessed set of information is added as a curated entry to the shared workspace of the semantic wiki. All actors within the STIN can collaborate on such an entry (taking the shape of a Talk or Discussion page akin to the ones found on Wikipedia). This is encouraged through a subtle notification found on the starting page of the semantic wiki, supporting joint attention of current developments.

Human-Centered Computing

museum für naturkunde berlin

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