

# TOWARDS AUTONOMIC UPLIFT OF INFORMATION

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In this project we propose an approach to transform the XML data into RDF using XQuery. The mappings from XML to RDF are encoded in XQuery. We are also transforming the XQuery to RDF, allowing us to analyze, manipulate and recompose mappings automatically. The project is motivated as a way to provide a robust mechanism to support the maintenance of the mappings automatically, particularly to cope up with frequent change in data schema or ontology.

The developed prototype for this research is based on the MarkLogic Server. The prototype uses an XQuery parser for parsing the XQuery. It provides two ways to analyze and manipulate the mappings 1) GUI- where the user manually updates the mappings 2) SPARQL- triples of XQuery can be automatically updated using SPARQL queries. We evaluated the system for both functionality and usability. We applied the developed solution to the industry problem of transforming the metadata to RDF. We transformed the Trinity digital collections resource metadata from FileMaker to modsRDF. For evaluating the system, we changed the mappings (FileMaker to ModsRDF) automatically as well as manually to see the changes in the final output. We evaluated the usability with the help of multiple users, who updated and analyzed the mappings using the prototype. Users rated the prototype based on their experience of operating it.

Overall, we found that our prototype successfully uplifted both the XML and XQuery. Based on the evaluation it can be said that the prototype was successful in analyzing, manipulating and recomposing the mappings automatically.