



MSc Information Studies Data Systems Project 2023-24

Project Title

Sustainability reporting using Linked Data to improve reliability and comparability

Project stakeholder (name and/or organization)

SemmTech

Stakeholder contact details

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Brief project description:

From 2024 onwards reporting on the sustainability of business activities will become mandatory for all (large) corporations in Europe, in compliance with the CSRD and the EU taxonomy of sustainable activities. That means that there are 150.000+ companies across Europe that will have to start/update the way they report on the sustainability of their activities. But are these companies ready? The availability of comparable source data from suppliers is a big challenge, which corporations currently try to solve with surveys and data requests towards suppliers. But this puts a lot of strain on suppliers having to answer multiple clients of theirs and the outcomes greatly depend on which questions are asked in the survey and what granularity of data is required by the clients.

Seeing that the availability and the interoperability of data – and consequently also the reliability and comparability of data – are some of the key challenges to the reporting process, Semmtech wants to offer these corporations the means and tools to help them. We believe that new technologies such as Linked Data are key to achieve adequate solutions in this problem space. We believe that by sharing product (source) data as Linked Data the flow and use of data between suppliers and their clients can be optimised and can in turn be much more sustainable.

Key challenge/problem:

In order to deal with these issue, relevant questions to explore are:

- How can we share the EU taxonomy as Linked Data?
- How can we provide a platform for suppliers/corporations to publish their services and product data?



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- How can we investigate the requirements to incentivise sharing of source data?
- How can we provide support in configuring tooling to use this data and map it to operational- and financial systems?

We believe that the technology to make this happen is already available. However, in order to use that technology for this use case and truly make it happen, the following sub questions need to be answered (not exhaustive):

1. What do large companies see as the biggest challenge in sustainability reporting?
2. What requirements do large companies have towards publishing/sharing data?
3. How can suppliers be incentivised to share their source- and product data as Linked Data, connecting it to the published EU taxonomy?
4. What type of platform (interface, API, methods) can promote this sharing?
5. How can we best publish the EU taxonomy as Linked Data (i.e. a software-neutral form aimed at achieving interoperability)?
6. How can we facilitate/automate the generation of linked data related to the EU taxonomy depending on the dataset(s)?
7. What additional regulations and incentives may be required by the EU to enforce a more interoperable way of sharing data across value chains and industries?

Questions (1) to (3) can be answered by qualitative research/desk research. Question (4) aims to conceive a system (front-end/back-end) that respond best to stakeholder's requirements. Questions (5) and (6) have a more direct correspondence to the solution space. The first concerns ontology development and validation. The second the integration of machine learning with symbolic tools, one of the current frontiers in AI research and practice. Question (7) can possibly be explored for instance by agent-based modelling, simulating current policies, a model of contemporary context, and the effects of potential changes.

When the data that is required for sustainability reporting in line with the CSRD is more readily available, the following benefits can be achieved:

- Individual companies will have to spend less time reaching out to suppliers, converting, standardising and mapping various data sources to combine into their sustainability reporting.
- On an industry scale the comparability of sustainable activities will be greatly enhanced, and there will be a more level playing field where it comes to data availability and granularity.
- On a EU level, the EU will have a powerful mechanism to help drive sustainability and change as well as measure and monitor progress / continuous improvement for industries, value chains and society as a whole.



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Exemplar projects or additional reference materials (books, papers, products, URLs etc):

https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en

https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en

Goals or key criteria qualifying a relevant *exploration*:

Depending on what is the actual goal selected by the students, one or more of these goals will apply:

- Students will form a model of current practices and requirements of relevant stakeholders, and (of various interpretations) of existing regulations and guidelines on sustainability-related activities.
- Students will identify best practices to develop and validate a relevant ontology, taking into account its maintenance
- Students will identify relevant technologies to facilitate the process of acquiring knowledge as linked-data, including machine-learning-based ones or better interfaces

Suggested key requirements or success factors for an *implementation*:

The students will develop an executable platform for data collection, sharing and visualization, and validated adequately, both on technical level (with adequate testing) and at user level (with user experience evaluation).

Challenges or constraints envisioned (if any):

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Any specific technical or content requirements:

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Any additional comments or thoughts:

You will engage with new EU directives on sustainability – assisting in improving insights thereon and analyses of necessary measures for improved sustainability – and you will learn solving real-world problems that organisations face. You will learn about new technologies such as Linked Data, but also about key concepts in handling information such as master data management, interoperability and integrations. Lastly, you will experience what it takes to work as an employee in an information management consulting company.