What if… INSPIRE data was as easy to use as Shapefiles?

Position Paper for the *What If…?* Workshop @ the 102nd OGC TC Meeting, Delft, 23rd of March 2017 (Thorsten Reitz, wetransform GmbH)

TL;DR: *Focus on early usability of data and on enabling high-quality user experiences. Make sure required investment goes into the latter, and not only in back-end infrastructure.*

Since about 2010, our group has worked with people from more than 200 INSPIRE implementing organisations. From these organisations, we've seen two key objections:

1. Complexity and cost of implementation, especially for data harmonisation and publishing
2. Limited usability of the infrastructure with existing server, desktop and web software

Due to objection #2, people have focused on the investment and effort required to implement infrastructure, and due to limited options for comparisons, judged these efforts on an absolute basis. They came to the result that the building of such an infrastructure is complex and expensive. There is definitely substantial investment required, though the question is, what alternatives were there, and what did comparable projects such as the national SDIs in Germany or Singapore cost?

Thus, we believe that a key differentiator in the implementation process could have been to focus on making INSPIRE data useful to implementers and their stakeholders very early on. This would have meant focusing on opportunities for data usage and on application usability in two ways:

1. Change the implementation roadmap to small iterations and little work in progress: Work on small sets of data specifications and implement them fast end-to-end, so that interoperable data set are available early on, at least for selected high-value use cases;
2. Create modern, high-quality user experiences: Match high expectations of users what they can do with web and mobile technology today, and make INSPIRE enable these;

Current limitations to the user experience come mostly from inefficient investment through implementers and industry, less so from the underlying technology choices made for INSPIRE:

> *"We don't have the resources to invest in a good User Experience for INSPIRE."*
> *(Representative of a big GIS company, at the INSPIRE conference 2012)*

As an example, XML as an Encoding format is still the only choice with an open schema language and standardized mechanisms for in-depth validation, such as Schematron. XML and XML Schema are robust technologies that come from "Mainstream IT" and thus have good and wide-ranging tool support. Using a different encoding, such as JSON, would mean pushing data validation down to each application implementation or re-inventing the wheel. At the detail level, there is some unnecessary complexity in INSPIRE[1]. As changes can induce a lot of extra effort, an alternative approach to modifying the data specifications would be to introduce simple, isomorphic models, which are easier to use and to store and allow for lossless transformation.

[1] Example: replace `CI_Citation` with a simple string + datetime XSD type)