



xLiMe – crossLingual crossMedia knowledge extraction



UNIVERSITY  
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## 3<sup>RD</sup> PROJECT YEAR

xLiMe proposes to extract knowledge from different media channels and languages and relate it to cross-lingual, cross-media knowledge bases. By doing this in near real-time we intend to provide a continuously updated and comprehensive view on knowledge across media.

In the first year, we focused our research efforts on implementing an initial processing pipeline for extracting machine-readable knowledge from multilingual, multimedia and social media content. In the second year, we focused our development on three concrete business cases.

In the final year of the project we focused on extending and evaluating our business cases, investigating additional business cases as well as presenting and disseminating our technologies and findings to the academic and industrial audience. We laid out a business plan on how xLiMe technologies will be exploited after the end of the project. The top use case highlights of xLiMe are:

- Hot product recommendation from TV and Social Media, which allows detecting products in TV streams to generate recommendations in online shops.
- Efficiently spotting Social Media Opinions by clustering and structuring data across media and across languages, this way significantly reducing manual effort.
- Finding Related Shows on Live TV that go beyond traditional approaches which are usually based on curated TV listings data or collaborative filtering approaches.
- Cross-modal and Cross-lingual browsing of media items before the Brexit vote to intuitively explore the coverage of topics across languages, modalities and channels.
- xKnowSearch – A entity-based system for multilingual and cross-lingual information retrieval with manual query disambiguation and powerful structured cross-channel query capabilities.

We describe how those applications can be exploited further after the end of the project in our business plan. Our top technologies developed in xLiMe that are enabling those use cases are:

- Semantic Image and Video Annotation to follow your favourite brand or to monitor a product of interest both on social network or TV.
- Entity Summarization Technology for fact-based summaries of DBpedia entities.
- Cross-channel and Cross-media Search and Recommendation engine that leverages explicit or latent semantics in the textual data present in different.
- Cross-media event correlation to identify correlations between mentions of an entity in the media or its popularity on social media, stock prices of, number of sold items, etc.

The final year of xLiMe was specifically successful in terms of disseminating the results. We published 26 papers, presented xLiMe at 11 scientific and 15 business events and talked to innovation managers about xLiMe's market potential. xLiMe technology caused great interest by many companies. Ongoing bilateral discussions already resulted in concrete business ideas with more than five companies from the media industries. We developed proof of concepts for 4 companies and evaluated them with their clients in 3 cases (the xLiMe use cases). Last but not least, we got great feedback on our achievements by our advisory and community board members and were invited to discussions about xLiMe results by industry and academia, like IBM, BMW or CMU. Our efforts were recognized by 3 awards and nominated for more.

