

## **Social Media Idea Ontology: A Concept for Semantic Search of Product Ideas in Customer Knowledge through User-Centered Metrics and Natural Language Processing**

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**Abstract :** In order to survive on the market, companies must constantly develop improved and new products. These products are designed to serve the needs of their customers in the best possible way. The creation of new products is also called innovation and is primarily driven by a company's internal research and development department. However, a new approach has been taking place for some years now, involving external knowledge in the innovation process. This approach is called open innovation and identifies customer knowledge as the most important source in the innovation process. This paper presents a concept of using social media posts as an external source to support the open innovation approach in its initial phase, the Ideation phase. For this purpose, the social media posts are semantically structured with the help of an ontology and the authors are evaluated using graph-theoretical metrics such as density. For the structuring and evaluation of relevant social media posts, we also use the findings of Natural Language Processing, e. g. Named Entity Recognition, specific dictionaries, Triple Tagger and Part-of-Speech-Tagger. The selection and evaluation of the tools used are discussed in this paper. Using our ontology and metrics to structure social media posts enables users to semantically search these posts for new product ideas and thus gain an improved insight into the external sources such as customer needs.

**Keywords :** idea ontology, innovation management, semantic search, open information extraction

**Conference Title :** ICKWI 2017 : International Conference on Knowledge and Web Intelligence

**Conference Location :** Bangkok, Thailand

**Conference Dates :** December 18-19, 2017