A Study of Ontology Evaluation Indicator System and Evaluation Method

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As an important technology of semantic Web, ontology is the cornerstone to solve the semantic level of information sharing and exchange. In the last few years, a number of ontology systems have been developed based on different size and application in many domains. However, due to the lack of a mature and systematic ontology evaluation criteria and analytical framework, the users find it difficult to determine which are the most appropriate ontologies for the system. In this paper, based on the existing approaches and tools for ontology evaluation, we propose a three-level evaluation indicator system, including 4 first level indicators, 12 second level indicators and 37 third level indicators to evaluate an ontology by considering its structure, function, share and application. While, these indicators were assigned different weights indicating their importance. At the same time, the evaluation system is open; the real users that need to evaluate these ontologies can increase, delete or modify these indicators and can also directly assign weights depending on the objective of their evaluation. According the final value, suitable ontologies will be found for their applications.

Keywords: Semantic Web, Ontology evaluation, evaluation indicator