Enrich Your Enterprise Knowledge Graph with Linked Open Data via JSON-LD

**Brief Description** - JSON-LD effectively delivers the many benefits of JSON into the linked data world. Linked Open Data is a vast corpus of knowledge that provides opportunities to enrich enterprise data for next gen AI applications.

**Short Abstract**

The linked data approach is designed for the exchange of information. Linked Open Data on the web is possibly the best example of the standards-based interoperability of semantically tagged data, enabling organizations to readily incorporate publicly available data without having to transform or flatten the data. Knowledge Graphs rely on many of the same standards to deliver these benefits to the enterprise. By aligning data with standard models and vocabularies, these graphs facilitate internal system interoperability via Linked Enterprise Data.

Enrich Your Enterprise Knowledge Graph with Linked Open Data via JSON-LD

JavaScript Object Notation Linked Data (JSON-LD), it is already a force impacting businesses today. Search engine giants such as Google have mandated JSON-LD as a preferred means of adding structured data to web pages to make them considerably easier to parse for more accurate search engine results. The Google use case is indicative of the larger capacity for JSON-LD to increase web traffic for sites and better guide users to the results they want.

JSON-LD effectively delivers the many benefits of JSON, a lightweight data interchange format, into the linked data world. Linked data is the technological approach supporting the World Wide Web and one of the most effective means of sharing data ever devised.

In addition, the growing number of Enterprise Knowledge Graphs fully exploit the potential of JSON-LD as it enables organizations to readily access data stored in document formats and a variety of semi-structured and unstructured data as well. By using this technology to link internal and external data, knowledge graphs exemplify the linked data approach underpinning the adoption of JSON-LD—and the demonstrable, recurring business value that linked data consistently provides.

**Linked Data for JSON**

The linked data approach is designed for the exchange of information. Linked Open Data on the web is possibly the best example of the standards-based interoperability of semantically tagged data, enabling organizations to readily incorporate publicly available data without having to transform, flatten, or account for time consuming data modeling calibrations to do so. Knowledge Graphs rely on many of the same standards to deliver these benefits to the
enterprise. By aligning data with standard models and vocabularies, these graphs facilitate internal system interoperability via Linked Enterprise Data.

JSON-LD implements linked data standards within the JSON format, so it’s possible to link to the vast world of data with those standards—whether in knowledge graphs with Linked Enterprise Data, or on the web with Linked Open Data. Due in part to the unique identifiers given to each datum, linked data is also innately machine-readable. Therefore, JSON-LD exponentially increases the value of the JSON format by making the information in these documents machine readable and easily understood by other linked data systems whether in knowledge graphs, on the web, in partner’s databases, or anywhere else.

Enhancing Knowledge Graphs
JSON-LD enhances the use of Knowledge Graphs in several ways. Smart data graphs focus on the underlying semantic meaning of data objects and their relationships to one another. JSON-LD offers an additional document format with which to link enterprise data or external data—yet enables organizations to link that data to a range of web-based applications (many of which natively support either JSON or Java) as well.

Knowledge graphs can leverage JSON-LD to swiftly integrate with web-based applications, particularly since with a few minor alterations JSON-LD makes conventional JSON understood as linked data. Organizations can therefore link specific information in their internal knowledge graphs—pertaining to customers or products—to web applications for timely action like recommendations. Alternatively, they could use JSON-LD to link real-time web application data to their internal knowledge graphs for comprehensive analytics supporting fraud detection or cyber security.

Documents and Beyond
JSON-LD allows Knowledge Graphs to substantially broaden JSON’s utility beyond documents to a holistic web interchange format. Imbuing JSON with linked data capabilities is especially significant because JSON supports schema on demand, making it ideal not only for web applications, but also for compelling big data use cases involving real-time, machine-generated sources. Most of the data from these sources (such as those typifying the Internet of Things) are either semi-structured or unstructured, presenting considerable data management difficulties in schema and formatting.

Many of these issues are obviated by using JSON-LD as a self-describing data model, since it supports any schema with a flexibility vastly exceeding that of relational methods. Furthermore, JSON-LD standardizes the semantics of the schema for interchanges underpinning the rapid aggregation or integration of unstructured, streaming data produced by machines. JSON-LD is able to make these data immediately understood by the array of downstream applications and system components that can derive value and action from data which otherwise, would likely be too obscure to use anytime soon.
Presentation
During this presentation we will demonstrate working with Linked Open Data via JSON-LD as well as discussing best practices for building Enterprise Knowledge Graphs that take advantage of freely available Open Data.