



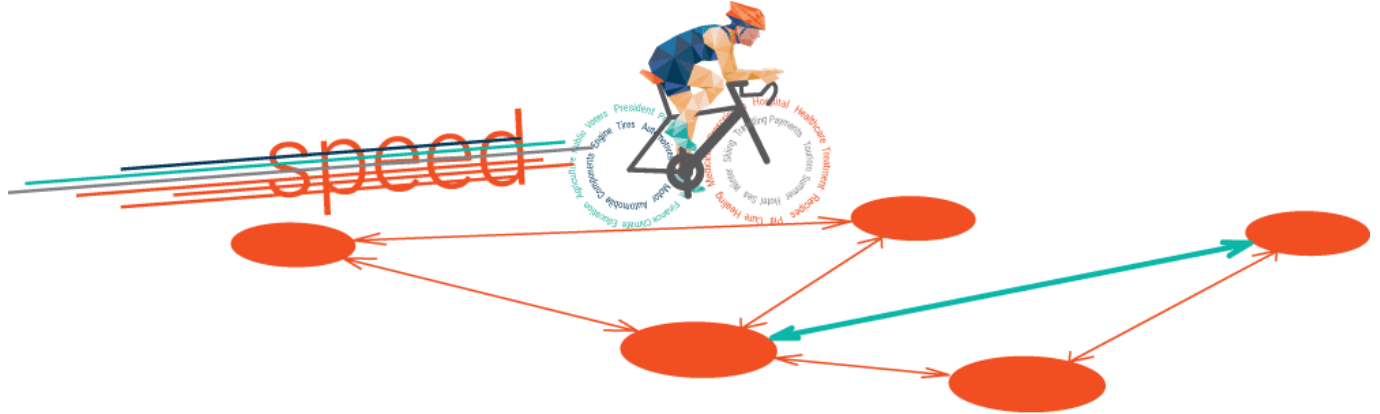
In the recent years, the popularity of graph databases has surged significantly, according to the [DB-Engines](#) initiative to collect and present information on database management systems (DBMS).

Between the beginning of 2013 and October 2016, the demand for Graph databases has increased 6 times. DB-Engines™ [complete trend](#) of database systems popularity shows that since January 2013 graph databases have been growing in recognition more than any other database management systems.

Why are graph databases outpacing other DBMS?

Here are the 5 key drivers that web™ ve identified and grouped under the acronym **SMART**™ speed, meaning, answers, relationships, and transformation.

Speed





These technologies use formal semantics to connect and expose the meaning of all disparate and raw data that surrounds us.



Here is where meaning, in the case of graph databases “ semantics “ comes into play to help computers think more like we humans do.

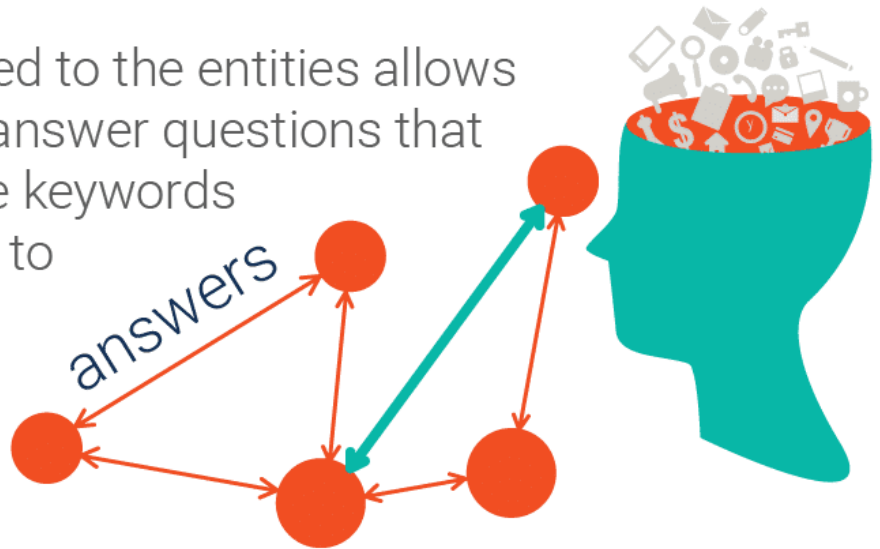
Graph databases, particularly those that adhere to the World Wide Web Consortium’s specifications, are a key ingredient of [Semantic technologies](#). As the name itself suggests, these technologies use formal semantics to connect and expose the meaning of all disparate and raw data that surrounds us.

The way graph databases organize and store information helps to maintain the connectedness of multiple entities enabling computers to interpret related items in a context instead of just match words. Thus machines are able to store, manage and retrieve information based on meaning and logical relations.

Answers



The meaning attached to the entities allows graph databases to answer questions that go far beyond simple keywords and are much closer to what people would intuitively ask.

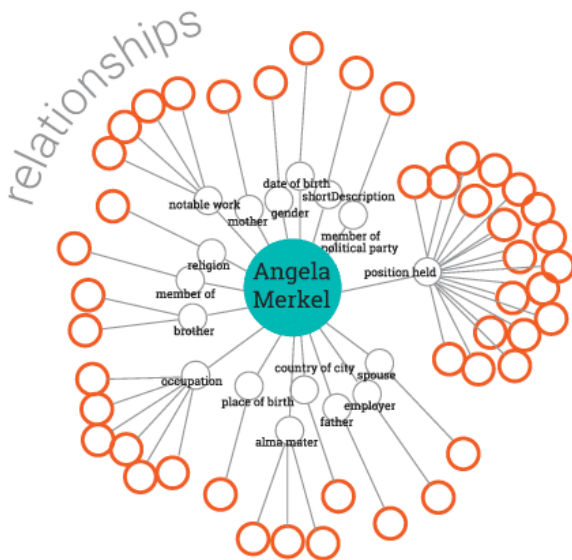


Since graph databases represent knowledge as a graph, connecting interlinked factual information, they are easy to interpret for both machines and humans. These graphs contain descriptions of entities, concepts and the relationships between them.

The meaning attached to the entities allows graph databases to answer questions that go far beyond what can be found with simple keywords and instead are much closer to what people would intuitively ask. This ability to precisely and effectively retrieve information based on extensive criteria gives the querying facilities of graph databases unmatched power and efficiency.

Behind their capability to answer intricate questions when dealing with complex and highly interconnected data, is the fact that graph database technologies use one essential characteristic of the Semantic Web – “relationships”.

Relationships



Graph Databases offer organizations a unique chance to see their proprietary data from different angles and even to connect it to external sources and reveal further relationships.

By representing the connections among billions of entities, graph databases help to explore both apparent and hidden relationship, for example, how one person is connected to another, to a certain place or organization and many more. In today's exponentially growing data world, this offers organizations a unique chance to see their proprietary data from different angles and even to connect it to external sources and reveal further relationships.

That's because graph databases use [graph structures](#) to represent and store data. The graph has interconnected nodes that represent things, and edges that represent the relationships between these things. Edges are how properties are assigned to things. Unlike relational databases, where relationships are expressed via tables upon tables of data, just by adding new edges to corresponding nodes in the graph links these edges to all other connections of this node.

This relationship-centered storage of information is particularly useful to organizations that analyze huge amounts of disparate data to identify patterns and obtain insights. Moreover, relationships and [Linked Data](#) – another pillar of the Semantic Web – transform knowledge and content representation and management across various industries. And here comes our fifth SMART driver of graph database popularity – transformation.



Transformation



Graph databases have the potential to drive innovation and transform enterprise data management into an interconnected all-round view of all data sets.

Graph databases have the potential to drive innovation and transform enterprise data management into an interconnected all-round view of all data sets. They have an incredible impact on the way academic and scientific publishers, museums and archives, government and financial institutions are beginning to look at their data and use the power of semantic technology to link and integrate their most precious resources with content.

Ontotext's semantic graph database [GraphDB](#) is the graph database that organizations such as the BBC, AstraZeneca, Elsevier and Springer Nature use to create smarter and more interlinked content.

The BBC transformed its content with the use of the [Ontotext Platform](#) architecture. AstraZeneca remodeled its knowledge repository with the [iSIM](#) (intelligent study information mining) system to quickly identify patterns and relationships, important in studies and drug therapies. One of the biggest scientific publishers uses GraphDB to power their data management platform - [Springer Nature SciGraph](#), which aggregates data sources from the scholarly domain.

Graph databases, together with other semantic technologies, are capable of transforming



[fraud detection](#) analysis and compliance management in the financial industry. The principles of Linked Data and the graph database technology allow businesses across all industries to [integrate data](#) in order to analyze performance, plan resources and budgets, and optimize business processes.

The amount of data and information is only set to rise in our increasingly digital and interconnected world. So the ability to achieve business transformation and have an impact on industries and society gives the adopters of semantic technology and graph databases the competitive edge to make more sense of data.

Want to learn more about graph databases like Ontotext's GraphDB?



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