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“Sorry, no content matched your criteria” is probably one of the most frustrating messages we can get after a search. Especially, nowadays when more and more of the world’s information is supposed to be at our fingertips, seemingly a click away. If we look behind that, though, we’ll see an important reminder from today’s data-driven world:

The potential of data for knowledge discovery is only as big as the capacity to intelligently search through these data. Share on X

Understanding Semantic Search Through a Verse From Antiquity

Semantic search is what opens the door for such intelligent information retrieval.

When referring to machines, the term ‘intelligent’ raises not just an eyebrow. The controversy is immediately up when we start discussing if we want machines to be able to understand the meaning of content.

However, it subsides the moment we are faced with a pressing need to find the nearest pharmacy or speed up our research project. In these cases, (not surprisingly) we are happy to use an elaborate computational process to sift through data and get to the most relevant results as quickly as possible.

Semantic search does exactly that. It is an approach to querying data that seeks to understand (i.e., to compute) the intent and the context around a query in order to retrieve the most pertinent resources, related to the particular information request.

To grasp the semantic approach to search, it is useful to look a couple of millennia back where an unexpected perspective on the process of understanding emerges.

> Launched on the void, assail it not as yet
> With keen-edged sickle, but let the leaves alone
> Be culled with clip of fingers here and there.

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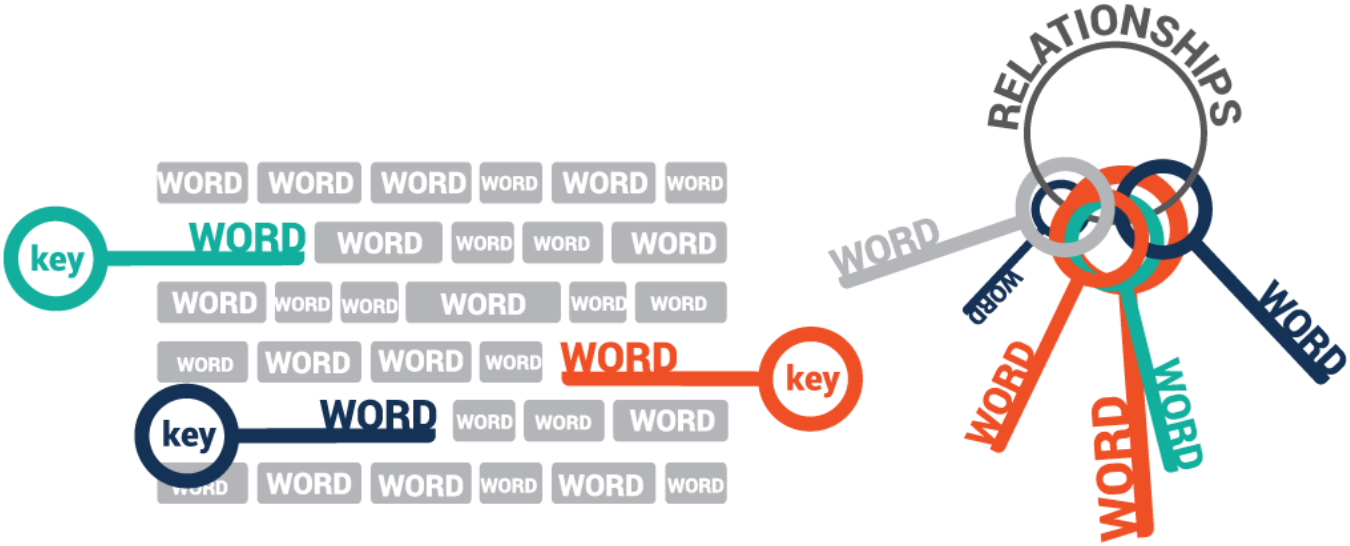
Verg. G. 2.366

The verb “cull” in the last verse is a translation of the Latin verb “*intellegere*”. This Latin word literally means “to choose from”, it is formed from *inter* ‘between’ and *legere* ‘choose’. With time *intellegere* came to denote “understand” and to further grow more elaborate meanings. Its present participle (*intelligens*, i.e., discerning) is the origin of the word intelligent.

That explained, the verse above can be read as another reminder, this time from the distant past, restating the fundamentals of understanding: the ability to pick from.

Bye Bye Keywords, Hello Networks of Relationships



In simple terms, the ability to pick from is our capacity to discern noise from actionable information that moves us forward on our quest for finding relevant knowledge and, ultimately, answers. What the semantic approach to information retrieval does is enhance this capacity by utilizing the analytical powers of computers to dig huge amounts of data and surface their interconnections for us.

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Neither text nor any type of content can be exhaustively defined by their exact textual representation. In both cases, it's more about a fabric of relationships. Not just the mere sum of exact words and phrases but a network of entities connected in a so-called knowledge graph.This term is gaining more and more popularity thanks to Google who first adopted it. But what is important is that is by analyzing the relational aspects of these entities that Semantic Search is able to address complex queries, foster knowledge discovery and take information retrieval to the next level. In other words, from a list of results solely based on keyword matching to a set of connections, pertinent to the intent and the context of the specific query.

Leveraging Semantic Technology and, more specifically, data represented in RDF and organized in formal collections (ontologies) of related entities, Semantic Search turns the process of looking for information from "dull" term matching into asking questions and getting answers.

By definition, Semantic Search reaches out beyond keywords and seeks to understand the semantics of the search query. It improves search accuracy by looking at both the data and their connections. Instead of more links, which are only a single kind of a relationship, the algorithm presents you with a networked view of relationships you might not be aware of.

Semantic Search Across the Web: The Inevitable Shift

In his book Google Semantic Search (op. cit., p. 13), author David Amerland writes:

> Search is key to making the Web useful, creating order out of its chaotic data, and making it navigable.

The adoption of Semantic Technology is inevitable for their potential to model real-world complexity and manage resources and their interrelations in a machine-readable format. In contrast to search based on the occurrence of words in documents, querying interconnected pieces of data whose chain of relationships can be followed allows for deeper and broader search experience.

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On the Web, Semantic Search profoundly changes the landscape of SERPs. Google, Bing, Yahoo! and Yandex, to mention the major search engines, constantly optimize their algorithms, as to be able to return richer results to search queries.

In their effort to enable Web-scale exchange of structured data through Schema.org (a collaborative, community activity creating, maintaining and promoting schemas for structured data on the Internet), search engines also enable the publishing of more and more Semantic Web data. This, in turn, makes Semantic Search more precise and reliable. The more data an algorithm is presented with, the better the chances it can accurately assess and verify them.

Put shortly, Semantic Search across the Web becomes smarter and its potential to satiate the need for relevant results, save time and provide a better user experience grows. And this is what keeps search engines in business.

But the same applies for enterprise Semantic Search. Incrementally, more and more companies realize the dire need for better information retrieval systems and more agile ways of managing knowledge across their structures.

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Enterprise Semantic Search: Benefits and Challenges

Within organizations and closed enterprise systems, Semantic Search implementation translates into efficient enterprise content usage. A Semantic Search built on top of an existing content management system brings new dimensions to extracting usable information out of huge amounts of heterogeneous data. This solves one of the big problems many organizations face: the massive volumes of dark data, which is hard to discover by content creators.

Enabling the navigation of semantically integrated data, Semantic Search enables discovery of hidden relationships and information gathered beyond keywords, and saves hours of fishing disparate data scattered across multiple resources. Share on X

Despite the advantages, though, Semantic Technology gains traction very slowly and incorporating Semantic Search is still a challenge for many organizations. Businesses are still a bit short-sighted to the opportunities interlinking their data, content and the Web can open for them. Too focused on the short-term benefits, they are still hesitant about what this technology can buy them.

The Quest for Meaning

The good news is that major Web search engines and larger organizations are already paving the road to a more meaningful Web and more efficient enterprise content management systems, thus bringing good Semantic Search practices for others to take advantage of.

Steadily, the algorithms that understand the semantics of our searches are becoming smarter. With a smarter and more precise information retrieval approach, more correlations are being found, more clues are being presented, ultimately, more breakthroughs are being made.

Semantic Search proves to be not only a tool for exploring and retrieving information but also a powerful way to ‘cull’ knowledge out of data and to really help us put the world’s information at our fingertips.

Want to learn more and see some examples?

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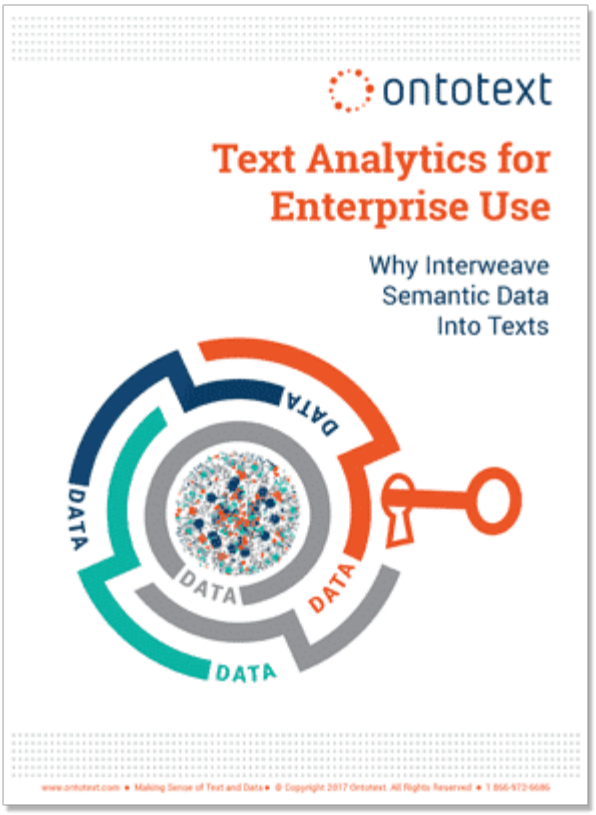

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