SciBite
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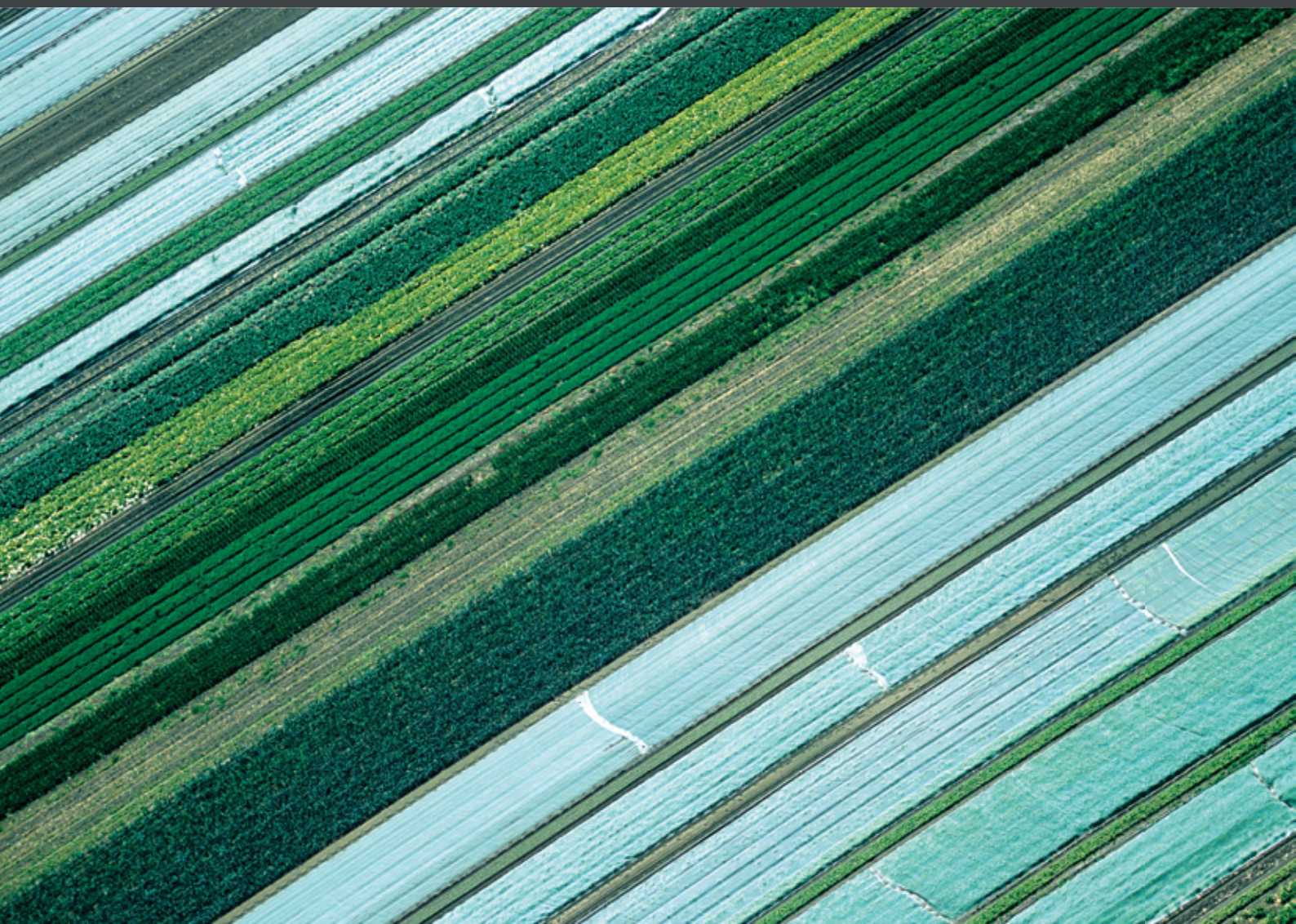
Use case

# Bringing scientific intelligence to enterprise search



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# Bringing scientific intelligence to enterprise search

**How often have you searched for something and had to iterate through repeated attempts to get to the right answer? In science it's pretty common that, for example, a search for novel research related to 'muscarinic acetylcholine receptor M1' will not find articles that use the common synonym 'cholinergic receptor muscarinic 1'.**

**A recent forecast by IDC predicts that organizations that are able to analyze all relevant data and deliver actionable information will achieve significant productivity benefits over their less analytically-oriented peers[1]. To remain competitive, Pharmaceutical companies need to be more information-driven and are turning to enterprise search technologies to break down data silos. Such technologies enable companies to make faster, more informed decisions by identifying relevant information from the wealth of new and historical data, both from within their organisation and from public and subscription sources.**

Enterprise search platforms provide the scalable, high performance infrastructure to enable secure access to millions of documents from across the whole organisation and deliver content analytics from a single portal. However, users can typically only search for exactly what was written by the author of a document. The inconsistent use of synonyms during data entry makes it difficult to identify and collate all relevant data for a disease or target of interest.

At SciBite we understand the complexity of science. We bring scientific understanding to any enterprise search technology by utilising world class ontologies to semantically enrich and contextualise content, opening up new possibilities to mine the data more effectively and derive valuable insights.

## Semantic enrichment of enterprise search

At the core of the SciBite platform are the established controlled vocabularies which apply an explicit, unique meaning and description to scientific terms. This enables complex scientific text to be contextualised so that it can be understood and used as high quality, actionable data, irrespective of its source. Standard reference vocabularies can be augmented with proprietary information, such as project codes and compound IDs, to ensure comprehensive coverage of the terms important to your business.

SciBite generates a semantic index which transforms unstructured experimental text, including embedded supporting files such Word documents, PowerPoint presentations and PDFs, into a structure that can be queried in a simple fashion to answer questions that would otherwise require time-consuming, error-prone manual aggregation.

As illustrated in figure 1, the semantically enriched data can be surfaced through enterprise search portals.

SciBite's semantic layer is composed of a simple API specifically designed to integrate and enrich complimentary technologies such as enterprise search platforms. It is technology agnostic and easy to deploy across an organisation without the need to change existing infrastructure. Input of content in any format and from any location can quickly be transformed into machine-readable data and fed back into the enterprise search platform to increase the accuracy of the results and improve the user experience.

1 https://www.idc.com/getdoc.jsp?containerId=US41866016

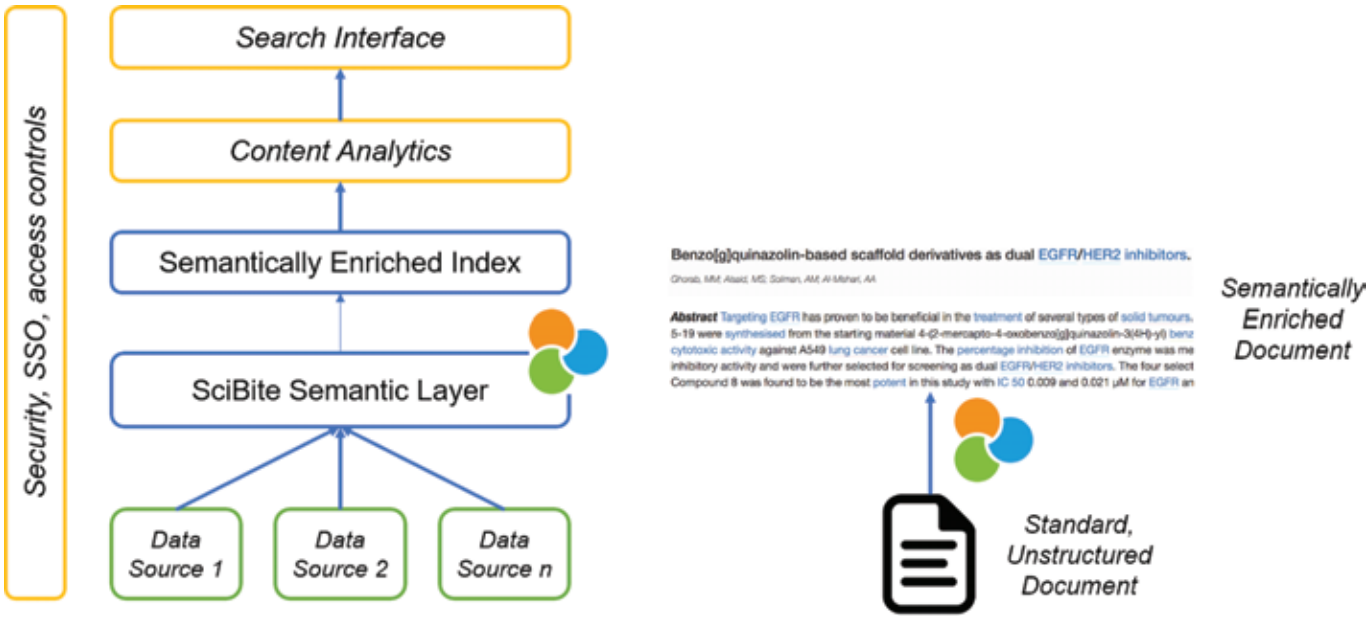


*Figure 1: Semantic Enrichment of Enterprise Data*

## Smart, comprehensive searches

Most enterprise search tools only have rudimentary search capabilities. For example, a search for the Alzheimer's related gene, PSEN1, would miss references to synonyms such as Presenilin-1, AD3 and PSNL1.

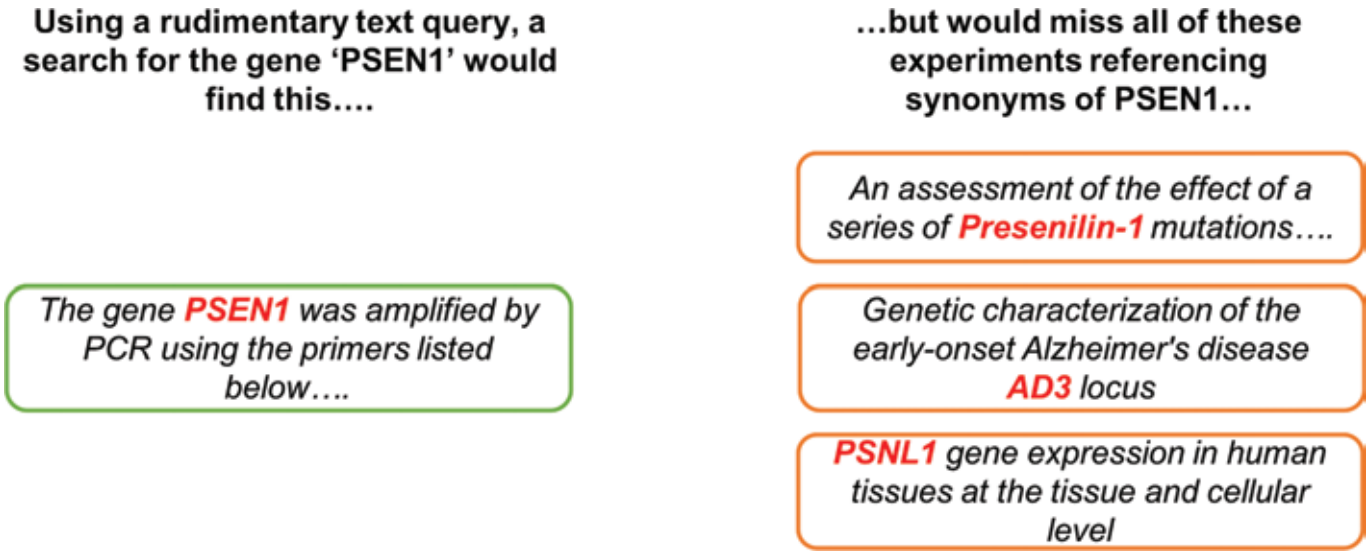


*Figure 2: Enterprise Search Tools Miss Synonyms of Search Terms of Interest*

Through semantic enrichment, SciBite provides a more comprehensive and inclusive query, ensuring that all relevant data is found, regardless of which synonym is used as the search term. SciBite not only makes it simpler to interrogate enterprise content, it also enables users to answer more complex questions such as concept-type searches (e.g. Find any content that mention a drug, indication, etc of interest) and ontology-based queries (e.g. Find any content that mention a 'type' of entity such as a gene).

## Identify important themes

Once a semantic index has been generated, it becomes a much easier process to explore relationships between entities, such as identifying the targets that have been studied that are associated with inflammatory disorders and generating a list of most frequently co-occurring disease indications for a gene of interest. Organisations are also able to easily identify themes in their content, for example to identify the most frequently mentioned genes or assays. The results of these powerful analyses deliver valuable business insight and enable companies to understand their research landscape, from identifying trending topics to revealing how the volume of information associated with the current 'hot' target has changed over time.

## Summary

SciBite's semantic capabilities are delivered through a flexible platform that can be applied to satisfy many different use cases[2]. Through semantic enrichment, SciBite brings scientific understanding to enterprise search, enabling it to 'understand' scientific concepts such as drugs, targets and indications within a company's entire document collection as well as public data such as PubMed, patents and grant applications. This combination opens unparalleled access to drug discovery intelligence and vast amounts of knowledge, previously hidden in scattered document repositories.

SciBite semantic enrichment provides critical scientific search, retrieve and explore functionality to end-users of semantic search technologies and ensures they are better informed, without overloading them with information.

## About SciBite

SciBite's award-winning platform[3] is the culmination of tens of years of experience applying Semantic Analytics to Pharmaceutical data. Global pharmaceutical companies and emerging biotechs have partnered with SciBite and are leveraging our unparalleled know-how to unlock the potential of the wealth of unstructured biomedical literature that is now at their disposal.

To learn how SciBite can support your monitoring initiatives with a flexible, easy to use, accessible environment that will ensure an integrated view without compromising quality, speak to one of our experts today or email us at contact@scibite.com.

2 For example, see SciBite's publication 'Unlock the Full Potential of Departmental Scientific Documents' which describes how semantic enrichment can deliver value to departments and teams that don't have access to enterprise search technology

3 SciBite has been recognised with a series of awards, including Bio-IT World's Best of Show 2017 and the British Chamber of Commerce in Japan's 2017 British Business Award for Innovation. The latter is in recognition of our transformation of data management in the life sciences, and the opportunity this has brought for Japan to gain a global advantage in the sphere.

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SciBite's data-first, semantic analytics software is for those who want to innovate and get more from their data. At SciBite we believe data fuels discovery and we are leading the way with our pioneering infrastructure that combines the latest in machine learning with an ontology-led approach to unlock the value of scientific content. Supporting the world's leading scientific organisations with use-cases from discovery through to development, SciBite's suite of fast, flexible, deployable API technologies empower our customers, making it a critical component in scientific, data-led strategies. Contact us to find out how we can help you get more from your data.

To learn how SciBite can unlock the value of your data, speak to one of our experts today or email us at contact@scibite.com

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