

# Use Case: Semantic Intelligence for Oil & Gas Business

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## **Introduction (Background)**

Eni is an international, integrated energy company committed to finding, producing, transporting, transforming and marketing oil and gas.

Within Eni, there is a corporate function known as Integrated Initiatives Promotion, where the “integration” implies the achievement of core business results across several stages of the hydrocarbon value chain (upstream and downstream).

Creating value in today’s globalized business encompasses a tight and continuous effort in understanding and anticipating what’s to come environmentally, economically, politically or otherwise. As such, technological innovation is crucial to stay afloat in the energy and fuel market.

The risk for any international player is having an intelligence process that is slower than the speed of destructive marketplace events or having an “after the fact” approach in the process of tackling risks and opportunities in business and technology environment, with little or no room for maneuvering.

In this frame, the adoption of semantic technology enabled an early awareness of changes (ongoing and prospective): a key factor in order to stay competitive and keep in step.

## **General Description**

### **The challenge**

For Eni, with a staff of 76,000 employees and a presence in 70 countries, where global market events can trigger new challenges and changes in strategy, the need for early and accurate notification required investment in an innovative, intelligence platform.

Eni needed to employ a knowledge management tool that could capture weak signals of discontinuity and understand technology evolution. In order to address this unique challenge, Eni turned to semantic intelligence to improve the quality of information flow deriving from external sources, in addition to the optimization of data management and the exploitation of intellectual capital within the company.

## **The Solution**

The adoption of semantic technology has enabled Eni's knowledge workers to select and connect pieces of knowledge critical to maintaining stability in a tumultuous industry. Field experience shows that knowledge is more about the connections among concepts within a text than the mere collection of keywords or documents themselves. A semantic engine is the only tool that can improve productivity and effectiveness in making such connections.

Semantic software Cogito™ is that engine. Eni's knowledge workers use semantic search engine in order to;

- Capture the weak signals and nuanced technological advancements buried in textual documents.
- Distill key information, for example using SAO (Subject, Action, Object) structure identification, which can boost technical problem solving so that knowledge workers can make informed decisions.
- Select, store and track the signals of knowledge out of the huge overflow of current information until they grow large enough to be classified as an opportunity or threat.

## **Key Benefits of Using Semantic Technology**

For Eni, the benefits of adopting an advanced semantic search tools ranged from the effectiveness of searching – providing targeted responses and extracting “meaning” from text documents – to the more complete organization of the company's information assets. It also ensures security and compliance, fosters knowledge sharing and cooperation among all users, and gives tangible support for business processes that are developed in the pursuit of the strategic mission.

## **Next Steps**

Eni's collaborative investment with Expert System's semantic platform allowed the creation of several user communities within the organization, making more agile and effective information search and analysis processes amidst the volatile external events typical of today energy business.

Semantic technology has played, and will continue to play, a critical role in supporting strategic decision process, managing data in internal knowledge generation and management, and monitoring and detecting early signals of change in the energy markets.

In the future, Eni expects that this collaborative investment in semantic intelligence will contribute to the optimization of the knowledge management process in other parts of the company worldwide and solve:

- The problem of wasting effort on poor content, through an early selection of high quality information without a “full reading” of the text.
- The problem of not finding information that could potentially bring the business to its knees.
- The problem of unnecessary re-creation of content, because managing knowledge with semantics enables to overcome the “If we only knew what we know” syndrome.