INTOP – mapping documents against standard models

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For example, in drilling, drillers everywhere accept there are about 9 common problems with drilling, and then each has subcategories. One of the problem categories is "stuck pipe" and two of the subcategories are "pressure problems" and "mechanical problems".

As Intop sees it, this model of problems is the 'context' which drillers operate in. And if you create a structured 'context', and map documents to it, it can be easier to find the documents you want, and get useful analysis from them.

So then you have a group of documents contextualised against the theme of "mechanical problems causing a stuck pipe".

Since stuck pipe is a problem which drillers are often concerned with, it is helpful to them to be able to pull up information related to it. For example, a driller might want to know which of its 55 drilling rigs most often has stuck pipe problems, or does the occurrence match more closely the type of well, or the type of geology.

You could have a dashboard which give you numbers about how many times a certain drilling problem has been described before, or which drilling problems are most prevalent.

The mapping work is done largely automatically (not manually).

"You've changed your way of looking for information," says Øystein Drivflaadt, Chief Technology Officer of Intop. "It is a whole different strategy when you try to find solutions."

Intop has a contract with Wintershall, a German operator which bought a big oilfield from Statoil, including topsides, drilling and reservoir. The acquisition brought a large number of documents with it. Intop was hired to develop data models for the context behind the documents, and map the documents to it.

It is exploring offering a similar service in other domains. For example marine insurance companies have large numbers of documents which are very hard to search – and it might want to know which documents relate to a certain ship problem, so it can easily pull out documents which relate to that problem.

Øystein Drivflaadt, Chief Technology Officer of Intop

Gap between knowledge and information

The technology aims to fill the gap between the data in our databases and archives, and knowledge which someone can actually work with, Mr Drivflaadt says.

When raw data calls itself information, it is not really information, in that there is not usually much in it which will usefully "inform" people.

Working with raw data might give you a skewed idea of how many problems there are, because a lot more data is generated from problems than successful activities, he said.

By applying contexts to the data, you might be able to cross this gap, he says.

Defining contexts

The hard part of defining a model of contexts which relates to how professionals in the field understand the domain, is rich enough to add value, but not so complex that every document is mapped against something different.

Contexts are not exclusive, for example, a safety report could relate mainly to two contexts - the barrier itself and the performance standard of that barrier.

"Once you start to understand the concept of context - and how elastic or plastic or dynamic that term is, there's no end to what you can do," he says.

The 'context' can be created by people, for example by interviewing subject matter experts, and understanding the kind of terminology which they use to describe the context they are working in.

One way to understand the most useful 'contexts' is to listen to people and see what they spend most of their time discussing. For example you might hear a group of drillers spending a lot of time discussing gyros, and see that is a context behind a lot of their interest in the data.

People in different oil and gas domains have their own contexts, for example geologists working with unconventionals might understand their world in terms of typical problems encountered with shale.

Perhaps there can be value from linking one domains' contexts with another – for example linking geophysics documents about shale with pipe sticking problems drilling through shale.

The set-up could be described as similar to how a human brain works, where we index thoughts together, for example when we go on holiday to the same place we went to last year, memories will come back which are linked to that place in our brains.

End deliverable

The end deliverable which Intop provides is a cloud based service which customers can use to navigate their documents by context.

The documents are still stored in their same location, but the navigation system and the context mapping system is done on the cloud (so long as documents can be accessed by Intop's software).

The computer system gives a score for how relevant a document appears to be, to a certain context. This enables the computer system to bring back the documents most likely to be relevant first.

The staff of Intop are information management professionals, who have worked with information for many years, in oil and gas and other industries.