

Leader - Digital Earth

Digital Earth – finding oil and gas information online

Digital Earth, a company founded by two ex-IHS Energy executives and a number of early internet pioneers, has a bold business plan – creating an online portal for oil and gas information which is easy to search, a basic version of which will be openly available to the general public.

Imagine if there was a single place on the Internet, where you could quickly search for available information about a specific part of the world or subject related to oil and gas, or you could find experts in certain areas, or where to find local oil and gas service suppliers?

This is the business plan of a start-up company called Digital Earth, founded by two ex-IHS Energy executives, John Redfern, a former president of IHS Energy, and Robert Winsloe, a former international managing director and senior VP worldwide sales and marketing with IHS Energy.

You can find a lot of the public information using Google, but Google has its limitations; its algorithms might recognise when you type in a flight number, but they don't generally recognise a well number, so they could never (for example) give you all the documents about the wells in a certain region.

Whereas on Digital Earth, "You'll be able to type in a keyword, for example, 'shale play,' and it will say 'hey – are you looking for documents about shale plays from these basins?'" said Digital Earth's VP of engineering, Hitesh Sachan.

There might be reports about a particular oilfield written a few years before, but they will be impossible to find on Google if the field name is a commonly used word. There is plenty of unstructured data that can be impossible to find if you don't even know it exists.

"Given the relative costs of data versus drilling in the oil industry, you normally want ALL the available information on a particular area of interest, but you don't want to spend months looking for it," says Mr Redfern.

"Our goal is to enable you to quickly find additional useful information, but also to help give you some assurance that you know of all the relevant data sources and can stop looking."

Mr Redfern emphasised that a large amount of information which is sold by organisations such as IHS, Woodmac and Deloitte which is already from publicly available sources, but that these data vendors process and package the information to make it a lot more valuable. All of this processing and packaging is made manually by highly qualified staff; but could computer systems also add a lot of value to public information, by making it easier to find?

"I thought, there's an unmet demand between what Google does and what the oil service sector currently offers with subscription database

products," Mr Redfern said.

There are already a number of companies offering similar services in real estate, health, finance, and other industries, that by adding domain experience to the search process are helping people find what they are looking for.

"Google is well placed to offer such a service, but they are just not interested", Mr Redfern said. "This was made clear during my discussions with Google on integrating my then company's structured database of 45 million electronic components into their search algorithms.

They admitted it would vastly improve their searches in the \$250 billion dollar electronic components market, but that just wasn't big enough for them! They have to keep focused on their consumer markets and that leaves the door open for us."

With a team of software developers in Shenzhen, China, Digital Earth is currently scouring the Internet through an oil and gas lense, going through public sources of oil and gas information and indexing documents according to oil and gas related terminology (e.g. for specific oil relevant job titles, oil field names, well numbers, geographic locations, types of drilling).

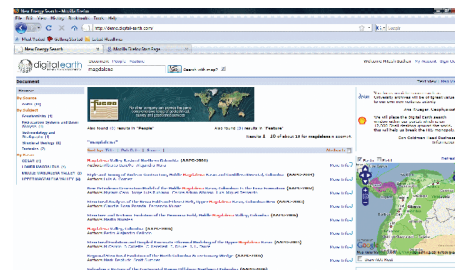
This will enable the system to immediately serve up the documents which users are looking for.

Robert Winsloe sees the system's content as being "built through the creation of both a thin film and a deep dive. The 'thin film' is data we are collecting from service company partners and industry associations such as the AAPG. These are structured, global datasets that we can index and tag alongside existing data from the web."

"This is then being augmented by what we're calling our deep dives," stated Mr Winsloe. "By a 'deep dive,' we mean user-sponsored county-by-country research conducted in conjunction with the government and local partners to ensure we uncover every data item of possible value, whether it be in the national archives or some regional university, regulatory body or institute."

The system will also include a bit of guesswork as sites like Zoominfo do; they try to guess information about people, using sources about them on the internet; they don't always get it right, but when they get it incomplete, it prompts people into correcting their own information.

That way the site can build up a large amount of information without having to cover the costs of doing all the research, or negotiating



Digital-earth.com - you will be able to make free internet searches of oil and gas information

with companies about what information they are prepared to make public.

"We want to avoid putting up a big subscription, or entitlements, barrier around the core search functionality because then you can never get the same dynamic going as you can on a public website," Mr Winsloe said.

Not all the information on the site will be free; the company hopes to follow in the footsteps of sites such as One Petro (www.onepetro.org) and Touch Oil and Gas, acting as an online broker to organisations which sell information.

The Business

Digital Earth has twelve staff at the moment, the four founders, two business development people and six staff in the Shenzhen office.

A prototype version of the software has already been developed, to be followed by a commercial product launch early in 2009.

For the public part of the site, it plans to keep costs low enough to cover its costs and make a profit from advertising, with a system similar to Google Adwords. That said there will be a number of subscription products for those (like the oil majors) who have already indicated they want an enhanced service or to integrate Digital Earth's functionality within their in-house GIS.

Many oil service firms are also supportive. Along these lines, Digital Earth has made agreements with a number of firms, such as Fugro, to use the metadata layer from their various datasets to create an index of key reference data that will be used to identify, tag and geo-reference all the other data of relevance.

By sharing its field and basin header data, Fugro, for example, will have the advantage of being able to promote and sell further information such as field studies. "We are just helping

them make their data more visible and easier to market," said Mr Redfern. "In the process we are also creating the index against which to sort and classify all the other relevant data as most oil and gas data will hang off a field, a basin, a license area or a well bore."

The company has already earned fees from the buyer side – doing 'scouting projects' (searching through available data for possible opportunities). "The great thing about these projects is it provides real value to the customer but at the same time provides funds for doing the research we'd need to do anyway to build the product" said Mr Winsloe.

The company has also got involved in larger scale information brokering: it recently brokered the sale of a Trondheim (Norway) geochemistry company called Geolabnor to Fugro. And Digital Earth has a number of other companies in the pipeline.

On the financing side, the company conducted a seed round last year, which along with some early revenue has provided the funds required to this point. This is to be followed by a Series A round, but given the financial market conditions, the company has decided to push this into next year.

Government systems

The company has already been approaching operators of national data repositories around the world, to build partnerships with them, and to help them make their data more accessible.

Many people have used tools like Google Maps to find geographically indexed information, they know how easy it is to use, and they wonder why governments don't provide something equally easy for oil and gas data, said Hitesh Sachan.

The answer is that it all takes money to do and many governments have trouble getting the budgets to do it internally; but maybe Digital Earth can do it for lower cost. More importantly, governments can only effectively justify investing in national data catalogues, whereas this cries out for a global solution.

John Redfern has extensive experience with government oil and gas data, including as founder and initial Chairman of Common Data Access Ltd, which manages public data on the UK Continental Shelf, and is perhaps one of the world's best known and longest established national data repositories.

"We had the idea that governments weren't doing as much to distribute their data as they could," Mr Redfern said. "People are doing a good job of setting up national data repositories but much of the data often just sits there. Meanwhile oil companies are using expensive intermediary companies to try to find out what is available."

In terms of indexing national data repositories, Digital Earth's initial focus is on countries

like Peru and Colombia where there has been significant interest in scouting projects from customers. As a result, Digital Earth already has an agreement with the Colombian government. The goal is to index the large amount of public data that is currently residing in these archives and make more easily accessible and searchable.

For information which is not public, Mr Redfern believes Digital Earth will still be able to create indexes of all the documents which exist, even if it can't provide direct access to them without the user going through the data owner's sale channel. "The fact that you have well logs shouldn't be as secret as the well logs themselves," he said.

Is all this possible? Digital Earth has even had preliminary discussions with OPEC, according to Mr. Winsloe. "Contrary to what you might expect, we explained exactly what we're going to do, and they were really very supportive."

Technology

The company has built up a team with a lot of technical competence on web projects.

The company's CTO, Dr. Robert Podolski, has worked with John Redfern in five different companies, including helping organise data management at Hess Corporation and putting together Common Data Access, the data system for the UK government, and also working on IHS Energy's software portfolio.

Digital Earth's VP of engineering and product development is Hitesh Sachan, who spent 8 years at Amazon.com as a solution architect and project manager, opening software development centres around the world. Mr Sachan previously worked for the world's first comparison shopping company, Junglee, which was bought by Amazon.

Mr Sachan joined Digital Earth because he began to hunger for a project in the 'real world,' not the consumer world, he said. Meanwhile the Digital Earth team were looking for someone who had extensive experience with these kinds of web data projects, so it was a good match.

The company has a development centre in Shenzhen, China, where it has six staff. It opened the development centre in 2007 and plans to double its size shortly.

Mr Redfern has been living in Shenzhen for the past five years. "It's a pretty good place in terms of infrastructure, access (next to Hong Kong airport), and lack of bureaucracy," he said. "We know how to operate in this environment and that has helped us keep costs low."

"The only downside is that we've taken a little while finding the right people in China. But that's because we want everybody to be superstars. Once we find them, they all seem to stay."

The company focuses on using open source software as much as possible so it can stretch its budget as far as possible, and maintain flexibility. "Everything here is open source, whether it's a

mapping application, a database, or fast caches," said Mr Sachan.

It is also easier to find people with the appropriate skill sets with open source, and bugs get fixed more quickly. If the company encounters a problem, there are probably plenty of other people who had the same problem too.

"But regardless of the tools used, what always frustrated me when I looked at oil and gas applications is that they looked like oil and gas applications," Mr Redfern said. "We wanted something with oil and gas functionality, but with the speed and ease of use of a consumer application."

A culture of secrecy?

The oil and gas industry is famously concerned about secrecy – and by trying to make information more available, Digital Earth could be seen as swimming against that tendency.

But Digital Earth believes that much of this concern stems back from the industry's history, when competitive advantage genuinely came from having secrets. If there was only one seismic survey and three wells in a basin and you controlled them, you were in a very powerful position that you'd want to protect.

On the other hand, if you're in a mature data-rich basin, the ability to generate competitive advantage through unique proprietary data is much more circumscribed. "Look at a place like Alberta for example. The amount of public data is massive," said Mr Redfern. "If you're looking for small pockets of bypassed pay, the value comes not from having any proprietary data but from having public data and looking at it in new ways."

Some resource companies outside the oil sector have actually gotten benefits from making their data completely public, as Goldcorp did when it put all its data on the web, and retired geologists, students and independent consultants from around the world searched through it to look for gold — with considerable success for the company.

As oil and gas basins around the world mature, value will come not so much from new proprietary data as from having tools that let you connect the dots using existing information. Digital Earth hopes to play a central role in this task.



"I thought, there's an unmet demand between what Google offers and what IHS offers with a subscription database"- John Redfern, founder, Digital Earth