



FEATURE STORY

Is 80 the New 50?

By Dan Piette, OpenSpirit President & CEO



We are living in dynamic times in the energy industry. I have been skeptical over the past year that oil prices would stay up. There is plenty of oil

around. There is more oil to be found. And yet prices seem to be defying gravity and on their way to \$100/bbl. As we scale these new heights, it is probably time to think about how this will affect all of us who are working in the patch in these heady times.

I started working in the extractive industries back in 1980. During that time there were protests in front of the building that housed the Iranian Consulate in Houston. I happened to work in that building (the old Dresser, and now KBR Tower). Occasionally there were bomb threats, and we had to evacuate the building.

Oil was trading around \$34/bbl, inflation adjusted at about \$95/bbl (yesterday oil closed at about \$92/bbl). I was 23 years old and Houston was the center of the oil industry, and a real, true boom town. There were more building cranes in Houston than in any other US city. Nobody was just doing a job; everyone was doing a deal. There were no petroleum engineers; there were only wildcatters. There were no accountants; there were only real estate developers. If you could buy a house you could sell it in a year with a 20% profit. It was a fun place to be.

This boom is a little more subdued. Or maybe I am just a little older. We don't see the huge jump in small oil companies because finding oil has become much

harder. And much more expensive. Back in the 1980s I knew a small operator who ran about 10 stripper wells (wells that produce under 10 bbl/day) and made a good living at it. He would ride his wells with his pumper every day, and make sure that everything was working. He would work over the wells and generally had 100% of the working interest of his production.

Today it is much harder to imagine someone like that making a living. The easy oil is gone, and the work it takes, both statutory and scientific, to find and produce oil is tremendous. While small operators still make an important contribution to US oil produc-

tion, an increasing number of wells are now managed by larger oil companies.

In 1980 not one person I talked to thought that the boom would be over by 1986. The best minds in the world were predicting that

oil would be over \$100/bbl in 1986. Instead, they were at about \$14.50/bbl, or \$27.50 in today's dollars. From \$95 to \$28 in six years!

And not one person I have talked to this year thinks that oil will drop below \$50/bbl in the foreseeable future. The best minds in the world are predicting that oil will be over \$100, probably before the end of the year. What was it that Santayana said?

Even if the easy oil is gone, it is still easier and cheaper to use the technology that is out there to try and find the oil. Take a look at a map of the Gulf of Mexico – there is not one block (in the western Gulf, anyway) that has not been covered with 3D seismic many times. Seismic vessels are getting bigger; you are seeing higher resolution data with more options available to the interpreter.

All this infrastructure and technology is what is being driven by the higher energy prices.

*"Those who cannot learn from history are doomed to repeat it."
– George Santayana*

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Did You Know?

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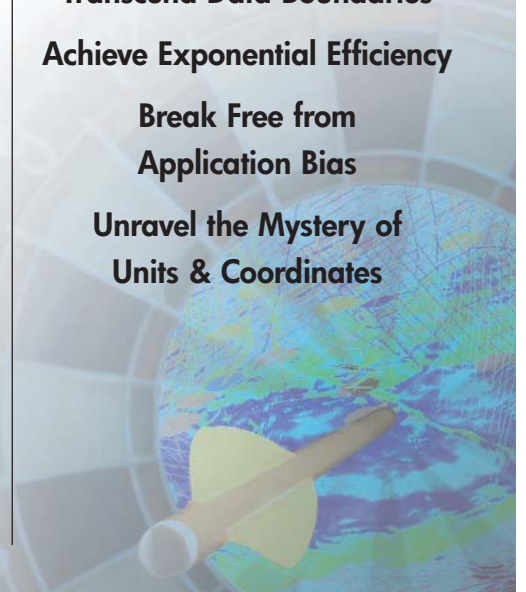
Infinite Integration

Transcend Data Boundaries

Achieve Exponential Efficiency

Break Free from Application Bias

Unravel the Mystery of Units & Coordinates



Did you know...?

That in OpenSpirit v3.0 and beyond you can:

- Right click to populate your GeoFrame project passwords with the project name – a convenient time saver!
- Use the drag & drop feature to bulk load data into your Petrel input window for instantaneous data transfer.
- Access interpretation from multiple authors in KINGDOM projects.
- Save your selection criteria in the DataSelector and email the file to a colleague so they can use the same working set.
- Send GIS polygons from ArcMap to the DataSelector to select wells within desired polygonal areas.

Recent third-party versions now supported with v3.0.2 include:

- ArcSDE and ArcMap v9.2
- KINGDOM v8.1
- GOCAD v2.5
- Recall v 5.1 (Linux)

For a complete connectivity matrix for Applications and Data Stores, please see http://www.openspirit.com/app_adaptors.shtml

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Some changes are incremental (a 5% gain in drilling penetration rates will give you a doubling of productivity in about 15 years. Every time you buy a new computer it is always at least a little bit faster) and some are whole new technologies (EM data becoming widely available, digital geophones) that need a new support structure of their own.

And we will see the industry change as we must find our energy in more and more harsh environments. They may be harsh politically, environmentally, or technologically. Or maybe all three. The ability to extract oil from tar sands or oil shale in an environmentally safe manner will depend on the oil price being high enough, not just the laws regulating the same.

Decisions are being made now that will influence the energy business for years to come. They are being made in board rooms as well as in government conference committees around the world. The only parts that we in the business can really hope to control are the science and the deal. If we can collect better data, integrate the data more thoroughly with existing interpretations, and then choose the best way to exploit a reservoir, then we will be successful at finding and extracting the most oil for the least investment.

As we head to more expensive oil (and one can be sure that 50 years from now oil will be even more expensive) viable energy alternatives will present themselves. Nuclear, wind, solar, even tidal and wave energy will have a part in meeting the demand for energy today.

But one thing is certain: the world still runs on liquid hydrocarbons. There is no better source of energy for transportation. And there are few sources of energy for electricity that are less polluting (and available) than natural gas. So we will be looking for these resources for a generation or two.

In my first column for 2007 (has it really been a year?), I talked about the importance of embracing openness and integration. As this year speeds to a close, I circle back again. Just as 80 is the new 50, we can see that integration is the new specialization. We at OpenSpirit have been beating this drum for so long that we find it hard to believe that companies still operate without a formal integration platform. Getting all the data you possibly can in front of the eyes that can see what it means results in the best interpretation possible. We will end this year with the release of v3.1 – new integration possibilities, more flexibility and better options for the future. 2008 promises more dynamic times, and we are ready to help you tackle them.

In computer programming there is a law (Linus's Law named after Linus Torvalds) that states, "Given enough eyeballs, all bugs are shallow". We can make an analogy, "Given enough integration, the hard oil is easy to find".

Goodness knows we will need all that hard oil. ♦

Students Ramp Up Learning Curve at OpenSpirit Training

Whether an end-user or third-party developer, the OpenSpirit training team can help you take your OpenSpirit integration investment to the next level by providing end users and IT teams with the knowledge they need to exploit all of the application and data management possibilities.

Courses are developed and delivered by OpenSpirit experts with extensive knowledge of the integration framework, associated tools, and third-party applications and data stores that interact with it, as well as deep knowledge of E&P technical workflows.

- Accelerate end-user learning curve for rapid implementation and uptake of the latest OpenSpirit technology in just two days
 - **OpenSpirit Basics:** Learn the fundamentals of the OpenSpirit Integration framework and associated set of utilities. Primary focus is on the use of the framework in E&P workflow scenarios using a variety of third-party applications and data stores.
 - **OpenSpirit for Administrators:** Get in-depth details on installation and troubleshooting for the OpenSpirit integration framework and utilities.



Students mug for the camera during a recent training class in the new OpenSpirit training facility.

An interview with Clayton Phair



Clayton Phair is a consultant based in Calgary, Canada who provides services such as data management and geomodeling to the oil patch. Clayton makes extensive use of OpenSpirit to bridge gaps between applications for many of his Canadian clients. Clayton is the president of Mneem Corp.

You've recently been involved in a corporate data store project at a client site. How does OpenSpirit fit in?

The company is creating a "gold standard" corporate data store of high-quality data, as well as a data store of user edits and interpretation. One of places where these data stores are implemented is in OpenWorks. I was involved in the process of using OpenSpirit to access the OpenWorks data store and move the headers, surveys, picks and curves to Petrel.

How did this work out for your client?

Most often, when you load data into an application, it is the end of the road for that data. The edited inputs and the interpretation are there, but there's no way to use them anywhere else. I call it an "application dead end". My client is most pleased with the fact that you can sync up data from applications and push it back to the corporate data store. That's the critical piece. The fact that you can be in Petrel and edit a pick and send it back, or check back against the corporate data store and see if something about your data has changed and put it into Petrel again, is very powerful. It is the direction the company wants to go.

What does this mean in terms of the long-term integrity of the new corporate data store?

Public data stores in Canada contain errors – and lots of them. When errors in input data are detected and fixed inside applications during the interpretation process, these edits can be retrieved and made part of the corporate data store. The ability to identify, retrieve and store the staff edits increase the value of public data sources. New projects being loaded with public data will have edits from the corporate data store automatically override errors previously identified in public data. Existing projects being updated from public sources will avoid having user edits over written by public sources, because the corporate data store information takes precedence over the public sources. With time, the staff-edited data transferred from application data stores into the corporate data store becomes the gold standard. When these nuggets of corrected data are gathered and reused within an oil company, you have a leg up on the competition.

Does PPDM factor into this project?

Yes, the client's corporate data stores implement PPDM, which are synchronized to public data stores. Data is then pushed from the corporate PPDM data stores (via OpenSpirit) into a few different application data stores, including OpenWorks.

As a consultant with a commitment to keep, what have you experienced using OpenSpirit as part of your consulting solution?

It is very true that OpenSpirit is quite fast, but speed really isn't what's important to me. The biggest benefit to me, and the hardest to quantify, is taking the human error out of the import/export process. Data loading occurs at the beginning of any interpretation process. If you have an error that you make in that data loading process, you may or may not detect it at that time. The longer the problem goes undetected in your interpretation process, the more you may have to "back up the bus" to fix the data loading issue should it be discovered. Therein lies the OpenSpirit advantage. Data transfer is fully digital in a one-step direct transfer – no need to export and then re-import sets of ASCII files. The idea that you can remove the human error out of the ASCII file transfer is worth a lot.

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OpenSpirit Earns Third FastTech 50 Nod

OpenSpirit has been recognized as one of the top 50 technology companies in the Houston area based on outstanding annual percentage revenue growth. Ranked number 40, OpenSpirit increased 2006 revenue by more than 43 percent over 2005, when it earned the number 20 spot on the FastTech 50 list. OpenSpirit was also recognized with the number 10 spot in 2004.

"Our third appearance on the FastTech 50 list affirms our commitment and sole dedication to integration," says Dan Piette, President and CEO. "OpenSpirit has achieved organic growth and consistent profitability for four consecutive years, and reminds us that the market is embracing our vision to make E&P data available to all geoscientists that need it, no matter where they are or what applications they rely on to access it."

Geoinfo Named as International Reseller and Support Team for Latin America

In October, OpenSpirit announced that Geoinfo SRL has been selected as the regional OpenSpirit representative serving Argentina, Uruguay, Chile, Peru, Ecuador and Bolivia. Geoinfo joins a growing list of agents and resellers focused on supporting OpenSpirit clients across Latin America.

"The Latin America region is very important to the worldwide E&P industry," says Dan Piette. "Like their counterparts around the globe, multidisciplinary teams of geoscientists and technicians deal with a broad range of information from diverse projects in an effort to make the best possible decisions. Geoinfo has earned a reputation as a trusted advisor and provider of high-quality project evaluation services, and we are pleased to have this team representing OpenSpirit."

"OpenSpirit offers a solution that will help our clients more efficiently manage enormous and often chaotic information across disparate technologies," says Sigfrido Nielsen, Geoinfo President and Senior Geologist & Geophysicist. "OpenSpirit provides a level of seamless and transparent integration that will help us better support the Latin American E&P community as it tackles some very complex business challenges."

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END USER CORNER

Another challenge is that application data stores such as OpenWorks are usually not up to date, unlike public data stores, which are normally updated daily from government sources. In Canada, almost 27,000 wells were drilled in 2005, so any application data store can quickly become incomplete if you don't keep it updated.

"I really like OpenSpirit because it does what it says it will do and does it well. It does a tremendously difficult job." – Clayton Phair

Right now, using public data stores usually requires manual ASCII file transfers because no source can deliver data directly to all the possible third-party application data stores. You can pull wells, well headers, directional surveys, tops, etc., using various mechanisms – if you know them – but if you have everything in a corporate data store and use OpenSpirit, it is a simple process and a real time saver. That will be one of the levers my client pulls in order to encourage staff to take advantage of the corporate data stores. ◆

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- Discover how to minimize installation issues and speed up implementation
- Hands-on exercises and personalized attention ensure that students leave the class with ideas and workflows that they can implement tomorrow
- Expand your OpenSpirit network and gain valuable insights about new workflows and processes from other E&P professionals
- The end of class doesn't mean the end of support – the OpenSpirit Training & Support teams are available for all of your OpenSpirit-related questions

Third-party developers benefit, too

- Ensure your customers are taking full advantage of the benefits offered by your OpenSpirit-enabled applications by encouraging them to attend training – join them onsite to show our mutual commitment to their success
- As a developer, please take advantage of the OpenSpirit Guest Developer Program and accelerate the process of enabling your applications during initial development
 - Learn about OpenSpirit subsystems that apply to your applications
 - Work with OpenSpirit consultants to develop the best integration strategy for your product
 - Test your development onsite

We can help you take your OpenSpirit integration investment to the next level by providing end users and IT teams with the knowledge they need to exploit all of the application and data management possibilities. ◆

2008 OpenSpirit Training Dates

Courses are held at our offices in Stafford, Texas, on **Tuesdays and Wednesdays** unless otherwise **noted**.

- OpenSpirit Basics
- February 25 (**Monday**)
 - May 27
 - August 26
 - November 25

- OpenSpirit for Administrators
- February 26 (**Tuesday**)
 - May 28
 - August 27
 - November 26

Information and registration instructions/form are available at:
www.openspirit.com/training.html.

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SHORT SHOTS

OpenSpirit v3.0.2 Released

Key enhancements include:

- Support for GeoFrame custom datums and the GeoFrame Transverse Mercator – Schneider projection method
- Support to access all authors' interpretation in a KINGDOM project
- Resolved issue regarding starting data connectors for Oracle-based KINGDOM projects
- Support for Petra projects created with the advanced (Blue Marble) cartographic system
- Other miscellaneous issues

OpenSpirit v3.0.2 is a Master and Satellite update release for v3.0.0 or v3.0.1 or can be installed as a new v3.0.2 installation.

See a full description at: <http://www.openspirit.com/documentation.html>

Download the v3.0.2 update kits at: <http://www.openspirit.com/downloads.html>

Events and Technical Symposia

- SMI E&P Information and Data Management Conference, Feb. 5-6, London
- ESRI PUG, Feb 25-27, Houston
- EAGE, April 8-10, St. Petersburg, Russia
- EAGE, June 9-12, Rome
- **OpenSpirit Technical Symposium, June 13, Rome**
- **OpenSpirit Technical Symposium, September (TBD), Calgary**
- **OpenSpirit Technical Symposium, Oct. (TBD), Houston**
- SEG, Nov. 9-12, Las Vegas



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