



FEATURE STORY

Ubiquity and the Virtuous Cycle

By Dan Piette, OpenSpirit President & CEO



When I am asked about my long-term vision for OpenSpirit, I inevitably answer "Ubiquity". This is the same vision that Gene Ennis had for Landmark 20 years ago, and with similar consequences.

When the early workstation vendors looked at the future, I don't think any of them envisioned a world where there are more computers in an E&P department than there are employees. But that is where we are. How many times have you gone into an oil company and seen two, or sometimes even three computers on a geophysicist's desk?

How did we come to this inefficient use of capital (not to mention desk space)? As always, I have a theory.

Back when interpretation workstations cost close to \$300,000 it only made sense to keep them as busy as possible. You would do this by locking them in a room and letting professionals schedule time on them in two-hour increments. The machines were worth more (*much* more!) than the people using them.

A funny thing happened with these machines

When coupled with 3D seismic data, a lot of oil was discovered. So much oil was discovered that the geophysicists and geologists became worth even less money, because fewer of them were needed to find the oil necessary to keep the companies in high cotton.

And another funny thing happened. Computers got cheaper, too! Thanks to Moore's Law, everything related to the computers used in finding oil and gas went down in price except for one thing – the software necessary to run them.

As with all products, the price of software responds to supply and demand. The demand for software stayed strong, and the prices stayed high. The consequences of NOT having the software were devastating, so the oil companies gladly paid for functionality that saved them time and money.

This functionality came at another price, though. This price is an IT infrastructure that had to be built up to support a large number of professionals, a large number of computers, and a HUGE amount of data. Whole companies were created, prospered, and were bought out by bigger companies whose sole function was to manage data, computers, or both.

And the earth scientists realized that the computers they were using for seismic interpretation was good for pretty much only one thing – seismic interpretation. They needed another computer for their email (which has also blossomed forth exponentially) for their access to SAP, for their petrophysical analysis, and maybe even for their mapping tools.

And by now, computers were cheap, and professionals were getting expensive. So to keep the professionals happy, they got another computer – maybe a laptop – on their desk. And they got another monitor. And they got a 3D Visualization Studio. You get the idea.

Computers proliferated where before there was only the genius of thought.

Communication pitfalls

With this proliferation of computers came the inevitable problem of communication. Not the simple connection of a 100 base-T line into the wall, but the bigger problem of *how do I get my seismic interpretation to talk to my e-mail to talk to my SAP to talk to my petrophysical analysis to talk to my mapping tools?*

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The first shot at addressing these problems resulted in some basic technologies (ASCII files, export import) that made the work a little less onerous, yet failed to deliver a transparent solution. Subsequent attempts were thwarted by technology that wasn't yet up to the rich demands of a data model (think POSC and Epicentre) or a technology that wasn't up to the altruistic demands of a business model (think Geoshare half links). As an exercise in computer archeology, I went to the *Oil IT Journal* Website and started reading the headlines from when they started in 1996. Neil could have written some of these articles yesterday:

"Data, data everywhere and not a number to crunch," (July 1996) which included this tidbit:

Incompatible

As anyone who has worked with E&P data will know, a major time-wasting problem is that of incompatible data formats. Data arrives in the E&P department on tapes from the logging or seismic contractor in a bewildering number of "standard" formats, on a variety of physical media and often in a form which even if it is a recognizable format, may need a considerable effort in editing and cleaning up of the data before the real work of interpretation. Once the raw data has been loaded into the workstation, things are by and large all right so long as the interpreter is working alone, with a single application. Now this is emphatically not the way to do things in the modern world of asset-based interpretation teams. This new way of working involves experts from different disciplines (and hence

using different applications) working together and sharing data. Since few applications use the same data formats this involves a new bout of data reforming gymnastics each time data is traded between specialists.

So, what is different now?

Well, since this is *OpenSpirit Connection*, you can imagine what the answer is. Us, of course! And the goal I talked about in the opening paragraph is a key part of the answer.

When we become ubiquitous, when the assumption is that every workstation has a copy of OpenSpirit installed, we will have finalized a virtuous cycle.

Software that has been written using our data access and interoperability technology will become more valuable than it ever was on its own, and as it becomes more valuable, it becomes more useful to that army of professionals who now need fewer chunks of iron on their desks to do their job. SO they do their jobs better which means they find more oil, and become even more valuable to their employers.

And the cycle starts again. ♦

OpenSpirit Again Named Fast Tech 50 Award Winner

For the second year in a row, OpenSpirit has been recognized by the *Houston Business Journal* as one of the top 50 technology companies in the Houston area based on outstanding annual percentage revenue growth. Ranked number 20, OpenSpirit increased 2004 revenue by 55 percent over 2003, when it earned the number 10 spot on the Fast Tech 50 list.

"The Fast Tech 50 award re-affirms our position as the only platform-independent, standards-based, and vendor-neutral integration solution for upstream data on the market today," says Dan Piette. "Our consistent sales growth can be attributed not only to our people and our technology, but to a client-centric approach to product development and support." ♦

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Larry White: Sales & Marketing VP



We are pleased to welcome Larry White as Vice President of Sales & Marketing.

"Larry brings 35 years of experience to our global sales and marketing organization," says Dan Piette. "As a recognized leader in the upstream E&P industry, Larry has the market know-how and global expertise to help us build upon our existing client relationships and foster new partnerships as we move OpenSpirit to the next level."

Larry most recently served as the Global Account Manager at Input/Output, Inc. with responsibility for a number of super major accounts, including ExxonMobil, BP, ConocoPhillips, Occidental,

Chevron and Apache, as well as many independent oil company accounts. Prior to this Larry served as President & CEO of Bell Geospace and Vice President of The Americas at Landmark Graphics. He started his E&P career at Schlumberger in 1971 as an offshore field engineer and spent the next 19 years in various functions, including the leading of two divisions, Marketing and Technical Manager for Wireline Atlantic and Region Sales Manager. Larry holds a B.S. degree in Mechanical Engineering from the University of Florida.

You can reach Larry at larry.white@openspirit.com. ♦

Unraveling the Mystery: Data Connectors vs. Application Adapters

A common source of confusion for new users of OpenSpirit is understanding the difference between an *application adapter* and *data store connector*. The source of this confusion lies with the normal view of an application where the user interface that displays and manipulates data is directly tied to its storage of data. This traditional view of an application is depicted in Figure 1.

An **application** that is OpenSpirit enabled has an OpenSpirit application adapter that allows it to:

- Create, read, update and delete data in any data store connected to OpenSpirit
- Interact with other OpenSpirit-enabled applications via the OpenSpirit event service (interaction events include sharing user events such as data selection, data change, cursor tracking, and GIS feature selection, as shown in Figure 2)

Normally, an OpenSpirit application adapter is developed by the vendor of that application because it requires changes to the application's source code to allow it to access data from either its own data store or – via the OpenSpirit development libraries – another application's data store. More than 30 vendors have licensed the OpenSpirit developer kit in order to make adapters for their applications. A current list of application adapters may be found on the OpenSpirit Website at http://www.openspirit.com/app_adaptors.shtml. The scope of OpenSpirit data types and interaction events that are used in a particular application adapter are determined by the vendor.

Traditional Application

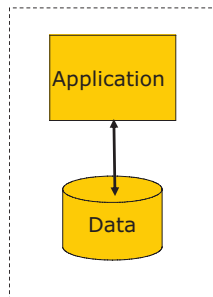


Figure 1



New functionality to arrive in early 2006 with OpenSpirit v2.9

Scheduled enhancements include:

- New commercial data connectors including:
 - PPDM
 - Petra
 - SDE culture
 - SMT KINGDOM (based on OpenKINGDOM 7.6)
- Beta version of the Recall data connector
- Support (read only) of IESX and Charisma non-seismic grids and 2D interpretation
- New Culture data types added (layers, point, polyline and polygon features)
- Added support for SSH type security
- Introduce the concept of a "Satellite" installation for Solaris and Linux to support the ability to run data servers on hosts that may not share a file system with the master installation host

For more information about these features and other aspects of the release, please contact sales@openspirit.com.

New applications added to OpenSpirit-enabled partner family

During the past few months, several application developers have joined the OpenSpirit family. We are proud to be part of their integration strategies!

- Intervera (HealthCheck™)
- Transform Software
- PointCross (IEPST™ Framework)
- Resolve GeoSciences (SeisShow)

OpenSpirit Expands Presence in Brazilian Market

To meet the growing needs of upstream E&P companies based and working in Brazil, Carlos Eiffel Arbex Belem, principle of IES Brazil Consultoria, has signed on as the local OpenSpirit representative.



"The recent expansion of the Brazilian oil and gas industry is bringing investment dollars and new opportunities to the region," says Dan Piette. "Carlos's 25-year geoscience career is built on his experiences in the Brazilian market. We are pleased to

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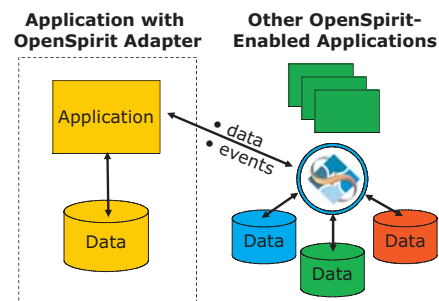


Figure 2

A **data store** that is OpenSpirit enabled has an OpenSpirit data store connector that allows other OpenSpirit-enabled applications to create, read, update and delete data in this data store (see Figure 3). Any OpenSpirit utility may also be used with this data store, including:

- OpenSpirit DataSelector
- OpenSpirit Data Viewers
- OpenSpirit Excel Adapter
- CopySync Utility – transfer data between OpenSpirit-enabled data stores in a single step
- GIS Scan Utility – build shape files or write to an SDE-enabled database to create GIS spatial information
- Plus any other vendors' OpenSpirit-enabled application

Generally, a data store connector is developed by OpenSpirit with the collaboration of the data store vendor (many data stores require proprietary libraries to read and write their data).

In summary, an **OpenSpirit-enabled application** (an application with an OpenSpirit application adapter) allows users to read/write to and from their selected data store, as well as share interaction events with

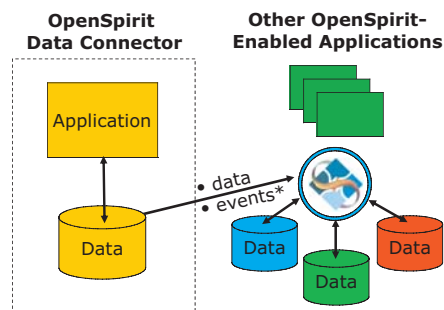


Figure 3

*GeoFrame & OpenWorks

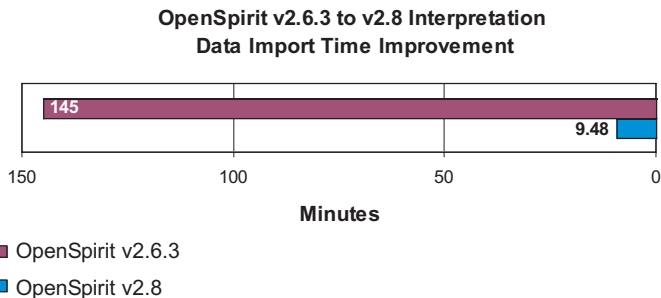
other OpenSpirit-enabled applications. An **OpenSpirit-enabled data store** (an application with an OpenSpirit data store connector) gives users the ability to access data in this data store from any OpenSpirit-enabled application. These two aspects of OpenSpirit integration offer users a wide range of workflow options and lead to many productivity gains.

Contact sales@openspirit.com for more information.

Acceleration, Productivity and Results

In the Summer issue of *OpenSpirit Connection*, you learned how OpenSpirit is helping an oil company improve workflow efficiencies between 50% and 99% when using OpenSpirit to import seismic, interpretation and well data into their reservoir modeling solution vs. traditional import/export procedures.

Updated data from November shows an **82.9 to 99.7% performance improvement** when comparing OpenSpirit v2.6.3 to OpenSpirit v2.8!




SMT client speeds up data transfer and improves productivity

Using the combination of OpenSpirit, the OpenKINGDOM interpretation solution and appropriate computing resources, **Seismic Micro-Technology (SMT)** has recorded productivity improvements as high as **656%** when compared to baseline results from 2003. These results, performed on real client data, include planning, hardware/software configuration, inventory, data transfer, software improvements, QC and project management.

Seismic: **54% improvement**
Interpretation: **522% improvement**
Wells: **656% improvement**

When focused on import time alone, SMT's client **accelerated data transfer rates by an average of 811%** leveraging the OpenKINGDOM/OpenSpirit integration solution and, of course, proper computing resources.


Seismic GB/hour: **500% faster**
Horizon/hour: **733% faster**
Wells/hour: **1200% faster**

Just a few more examples of clients seeing improved productivity, better decision making and lower costs by using OpenSpirit to integrate their applications and data stores. 

Intervera Adds OpenSpirit Integration

For the upstream oil industry, data accuracy and efficiency mean better decisions. Intervera Data Solutions (Calgary), is innovator of practical data quality solutions for the E&P sector. In November, they started using the OpenSpirit Developer's Kit to offer their Data HealthCheck™ users increased integration with third-party geoscience applications and data stores.

"Oil companies rely on a variety of business-critical – but often disparate – applications, and E&P technology managers see Data HealthCheck as a smart investment because it helps them reduce the overall business risk caused by poor data across their networks," said Paul Gregory, President of Intervera Data Solutions. "OpenSpirit is a perfect complement because it is recognized as the leader in vendor-neutral, standards-based integration workflows that enable applications to interoperate and access data from diverse projects, regardless of application or platform."

Intervera inspires end-user confidence through simple, smart solutions that make data quality assurance virtually effortless. Like OpenSpirit, Intervera uses a standards-based approach to ensure consistency, time savings and efficiency. We are pleased to be part of their solution! 

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have him as our agent as we continue to meet the market demands of our clients in Latin America."

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OpenSpirit Calendar of Events

We will be at the following events for 2006. Please come by and visit!

- GEO 2006, Booth 1146, March 27-29, Manama, Bahrain
- ESRI PUG, April 3-5, Houston
- CSEG, May 15-18, Calgary
- EAGE, Booth 820, June 12-15, Vienna, Austria
- OpenSpirit Technical Symposium (Europe), June 16, Vienna, Austria
- SEG, October 1-4, New Orleans, LA
- OpenSpirit Tech Symposium (North America), October 5, New Orleans, LA


OpenSpirit Training Dates

OpenSpirit Basics

- Tuesday, February 14

OpenSpirit for Administrators

- Wednesday, February 15

All courses will be held at our offices in Sugar Land Texas. Information and registration instructions/form are available at: www.openspirit.com/training.html 



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