

# Energistics – how data standards help cut costs

In a business environment where companies are looking deep and hard for ways to cut costs, executives are more open to hearing about how data standards might be able to help, says Energistics CEO Ross Philo.



Ross Philo, CEO, Energistics

There are a range of estimates for how much time is spent on data validation and correction – PETRONAS has said 52 per cent, another survey presented results of between 30 per cent to 90 per cent, said Ross Philo, CEO of oil and gas standards organisation Energistics, speaking at the October 2016 Digital Energy Journal conference in Kuala Lumpur.

This lost time can include looking for data, then preparing and aggregating data sets, before geoscientists can start doing the real value-added effort of interpretation.

For example, you have to match together data in different formats, different coordinate reference systems, sometimes depths are positive, sometimes negative.

“It’s crazy why are we taking all this time trying to adjust, validate and aggregate data,” Mr Philo said.

If oil and gas companies used more data standard formats, such as the ones developed by Energistics, they could dramatically reduce the time spent on data preparation, he said.

In the current business environment, companies are looking at “anything that increases efficiency and drives cost out. The driving force of bringing the cost of operations down is relentless,” he said.

So there should be a strong argument that it is a good time for companies to take another look at how adoption of industry-defined data standards could help them, he said.

Energistics was originally formed (under the name ‘POSC’) following the 1980 oil and gas downturn, when the industry was also looking for ways to lower costs and improve productivity, he said. And of course the industry is in the same situation now.

## The specific benefit

Companies naturally want to see that there is a direct and specific financial return to the effort involved of improving data, he said.

Data standards won’t eliminate all the data preparation time, but they can dramatically improve the efficiency of the process. Conservatively, if more data was available in standard formats, a geoscientist might spend 4 hours rather than 6 hours a day trying to put data together, he said.

If the ‘fully loaded cost’ of a geoscientist is \$100 per hour, that works out at a saving of \$50,000 per year per geoscientist, he said. If the company employs 50 geoscientists, then it could generate savings of \$2.5m dollars a year.

This is still only a ‘back of the envelope’ calculation, Mr Philo said. It would be very helpful if oil companies who use the standards could calculate in more depth what return on investment they think they are getting from using the standards, and be willing to share this analysis.

There are other non-quantifiable benefits, such as having freedom about who you buy software from, because your data is not stored in vendor specific formats. You have flexibility to find less expensive sup-

pliers. Standards also drive innovation by levelling the competitive landscape, creating opportunities for suppliers to develop new, innovative products.

“If you’ve got plug and play capability, it doesn’t matter who you’re buying software from,” he said.

This also makes it easier when you need to share data between different business partners, for example other operators within a joint venture project. Often operators find they can only share information on paper, because everybody is using different software, he says.

Without standards, the joint venture partners would need to ensure they are using the same software, at costs of hundreds of thousands of dollars, he says.

You are also freeing up your staff to spend more time on actually interpreting data, he said.

Data kept in standard formats is also “future-proofed”, he said. As an example, suppose you had go and analyse data from the 1990s. Even if you could access the data, you would need to recreate the original interpretation environment, which could include a 1995 computer to run it on, and 1995 versions of the operating system and software, and finally a valid license key for it.

By using a standard like RESQML [Energistics’ standard for earth model data] you can archive the data in a standard format, giving you the ability to re-analyse it in current or future interpretation environments with complete fidelity.

Energistics is developing a range of training sessions and webinars to help oil companies better understand the role that data standards can play in helping keep costs down.

## Avoid maintaining interfaces

A further benefit of using standards is reducing the number of proprietary software interfaces you need to maintain, if your company uses a lot of software which has been built in-house.

Every time there is any change to the software, there needs to be a change to the way other software tools interact with that software.

One oil company said they have to maintain 4000 proprietary software interfaces.

“I’m not going to claim Energistics can eliminate all 4000, but if we can eliminate 1000, we’d be doing a great service,” he said.

“When times were good people could afford the luxury of proprietary interfaces,” he said. “In today’s economy, the case is very clear, maintaining proprietary interfaces is just not good business sense for a company.”

“You can consider the energy industry to be rather like an orchestra, with a whole lot of different players, a lot of different instruments, all playing different parts. Data exchange standards ensure that everyone is interpreting the sheet music in the same way, playing together the way they need to,” he said.

“If everybody in an orchestra had their own standard of interpreting the sheet music it would sound awful – essentially it would be musical chaos. In a similar way, data standards eliminate data dissonance and allows companies to play together and collaborate more effectively and efficiently.”

Energistics has 110 members, including E&P companies, service companies, software companies, regulators, and a number of universities, he says.

The standards are defined by the members, through their subject-matter experts, and Energistics as an organisation facilitates the process, curating and publishing the standards and helping to drive adoption.

Mr Philo called on audience members to take a more active role in Energistics helping drive the standards forward. “Driving adoption of these industry-defined standards requires your participation,” he said.

## Three standards

Energistics’ main standards are WITSML, PRODML and RESQML.

WITSML is used for well-bore and drilling related data (such as logs, drilling reports, surveys, etc.). It is used in real time operating centres, and also used to move real time data between companies, and between applications.

The latest version of WITSML has a new ‘Energistics transfer protocol’, which can help transfer data much faster, effectively allowing data to be ‘streamed’ in real time. By some estimates, it can reduce the time for data to get from an offshore rig system to an onshore computer system from 60 seconds to 6 seconds.

This time difference could make a major impact if there was a safety incident happening on the rig.” When things go wrong you want to get information as quickly as possible,” he says.

The new version of WITSML also has a data assurance object.

The data supplier and data consumer can agree business rules about the quality of data they will exchange, and, if the rules are followed, it increases a user’s confidence in the data. That doesn’t necessarily mean that there won’t be data quality issues, but if the data is not good enough quality, it will show that it doesn’t pass the rules. “It does tell you if you can trust it or not,” he said.

PRODML is used for sharing production information, such as production volumes, pressure and temperature analyses, description of the downhole string and surface piping. It has been recently updated to include acoustic recordings from fibre optic, and digital temperature data from fibre optics.

RESQML is used to transfer earth model information and addresses the movement of data through the entire workflow from seismic interpretation to simulation, and for all types of grids. RESQML also provides traceability of the interpretation process by capturing parameters and interpretation decisions throughout the workflow.

## Common architecture

The three main Energistics standards have very different origins. WITSML, the well data standard, was originally developed by an independent organisation, which then gave it to POSC (as Energistics was previously known) to look after. PRODML, the production data standard was created by POSC. RESQML was created a few years later within Energistics.

Over the past two years, Energistics has created a common underlying technical architecture for all of the standards.

This means that a data consumer who wants to take elements from many standards at once can now do it – for example a well trajectory from WITSML and a production volume from PRODML, a formation horizon from RESQML.

“You could consume them as though it is one complete cross section of the reservoir,” he said.

“You have this spectrum of data objects rather than 3 standard sets. It’s going to make a big change.”

“You’re going to save time, how much I don’t know. Even if just two hours out of six per day it will have a big impact on the bottom line.”