Open Source Technology Proves the Way

The seismic interpretation solutions company dGB Earth Sciences has experienced exponential growth since 2009, and the company puts its success down to a single decision – moving to an open source technology platform..

"Having spent nearly ten years developing our niche interpretation product, d-Tect, we were finding it difficult to commercialise it to the market," explains Paul de Groot, co-founder and President of the Netherlands-based company. "The software, which uses attributes and modern visualization techniques to aid interpretation of multi-volume seismic data, was proving very popular, but customers wanted more freedom to generate cubes and interpret the data their own way, to fit in with their systems and methodologies."

"In 2003 we re-engineered the package to make the basic module open source, so users could develop their own plug-ins to work with it, but this still did not give our customers the flexibility they wanted. So in 2009 we made the major decision to go completely open-source."

The company adopted a completely public 'copy left' licence – the model used so successfully by Linux, among others. This means that anyone using the software has access to all the underlying code, and can freely do what they like with it, adding bits on or making plug-ins, but anything they produce must also be open source. The software, renamed OpendTect, is freely available and downloadable from the dGB website.

"Since 2009 over 61,000 copies have been downloaded," says Paul. "Our clients vary from individual consultants needing help with a single project, to major oil and gas companies running multiple projects. Many students also download it to help with projects, and once they have been exposed to the software, for free, at that stage in their careers, they often come back to it in their professional lives."

"There is also some idealism behind this idea," he adds. "Students need software and data, so we have developed the 'Open Seismic Repository' which has datasets from the public domain, plus some government and research agencies, ready loaded into OpendTect. The user can download this data, plus the interpretations, which can be used as an education tool."

Since the software is free, the profit to the company lies in the many supplementary products and services which can be offered. OpendTect is a complete, standalone interpretation package that supports a wide range of functionalities for analysing, visualising and interpreting G&G data. The open-source software is complemented by a line of revenue generating 'plug-ins' to undertake additional tasks such as sequence stratigraphy, fluid migration, rock property predictions and velocity modelling. The company also offers consultancy and training services.

"We are the first to do this in our industry. By going open source our whole business picked up dramatically," Paul explains. "To develop good software you need a wide user base for feedback, to ensure that your product is fulfilling the needs of your clients. This feedback and funds from the industry drive our product development. Being open source creates an environment of collaboration and transparency, sharing ideas for the benefit of the whole community."

JANE WHALEY

Paul de Groot is President and co-founder of dGB, and Kristofer Tingdahl, CEO, is a software specialist. They attribute the company's recent growth to moving the core software to an open source platform.

ABBREVIATIONS

Numbers
(U.S. and scientific community)

M: thousand = 1×10^3
MM: million = 1×10^6
B: billion = 1×10^9
T: trillion = 1×10^{12}

Liquids
barrel = bbl = 159 litre
boe: barrels of oil equivalent
bopd: barrels (bbls) of oil per day
bcpd: bbls of condensate per day
bwpd: bbls of water per day

Gas
MMscfg: million ft^3 gas
MMscmg: million m^3 gas
Tcfg: trillion cubic feet of gas

Ma: Million years ago

LNG
Liquified Natural Gas (LNG) is natural gas (primarily methane) cooled to a temperature of approximately -260 °C.

NGL
Natural gas liquids (NGL) include propane, butane, pentane, hexane and heptane, but not methane and ethane.

Reserves and resources
P1 reserves:
Quantity of hydrocarbons believed recoverable with a 90% probability

P2 reserves:
Quantity of hydrocarbons believed recoverable with a 50% probability

P3 reserves:
Quantity of hydrocarbons believed recoverable with a 10% probability

Oilfield glossary:
www.glossary.oilfield.slb.com