LEADING EDGE

Big Oil Meets Big Data

Data management companies across Canada are increasingly looking to the oil sands as a source of new business

By Geoffrey Morgan

STANDING INSIDE A MOBILE DATA CENTER IS A BIT LIKE standing inside a walk-in fridge, except that stacks of computers sit where the food would otherwise be.

The interior of Bulldog Containers' big metal box stays refreshingly cool, even as the sun beats down on the data center in a sea-can at the Gas and Oil Expo in Calgary's Stampede Park. The skid-mounted container is filled with specialized air-conditioning units that vent frigid air to chill the electronics inside. Company owner Vern Kasdorf is marketing the mobile data centers to oil sands and mineral mining companies that currently house their data in computer rooms at remote worker camps. One small power outage, or heat wave, and all that improperly housed data could be corrupted, Kasdorf says.

He sees the energy industry as a major – and growing – market for data infrastructure and data management expertise. He should know. Kasdorf was the director of global IT infrastructure at Teck Resources Ltd. in Vancouver before starting his own company. He says the IT bill for an existing but unnamed oil sands project was equal to the entirety of Teck's IT budget across all other projects for one year. "The data that we're using and the methods of collecting the data are getting more and more sophisticated," Kasdorf says. That's especially true in the energy sector.

According to software developer and professional services firm SAP, one oil or natural gas well can produce one terabyte of data every week, and every productive well in the oil patch generates the equivalent of Wikipedia's text data every week. In fact, as the industry drills more horizontal wells, with more fracked stages, the data generated by those operations will grow even larger.

Neal Coleman is the president and CEO of Pulse Seismic Inc., a company that acquires geological seismic data on the Western Canadian Sedimentary Basin and licenses the information out to exploration and production companies through its proprietary libraries. He says that with increased multi-stage fracking activity, companies are demanding more 3-D seismic data to pinpoint prospective drilling areas. "The capital intensity of drilling wells is so large, they want to make sure they have every piece of data out there in order to mitigate their risk of drilling these horizontal wells," Coleman says. "We're seeing a resurgence of data sales in a bunch of these areas that kind of lay dormant, because they were hamstrung by economics." Last year, for instance, the company spent $52 million shooting and gathering 3-D seismic data on the Duvernay play.

With 11,475 wells expected to be drilled in Canada this year, data management companies are increasingly looking to Alberta's oil and gas industry as a desired customer base for their products and expertise. In January, for example, California-based iGate Corporation opened its first Calgary office with the intention of providing big data solutions to the city's energy producers. "There's a lot of opportunity in optimizing – a lot of money can be saved and a lot of outages can be avoided just by using big data," says Ali Khan, iGate's associate vice-president and head of communications, energy and utilities. "Even pipeline companies are using data to inform themselves of which pipelines are most susceptible to accidents, and how much volume is moving through. It's just like an electricity grid – it's so complex."

Managing director for SAP Canada Bob Elliott agrees. "The need for quality information in rapid time is greater in the oil and gas industry compared to many others," he says.

ILLUSTRATION KYLE METCALF

The proportion of energy companies that use real-time data analytics in their operations

The amount of data an oil well produces in one week

The cost of gathering seismic data in Alberta's Duvernay play

Still, SAP's 2012 Canadian Analytics Study shows that many of the province's intermediate and large oil and gas producers are not yet analyzing their data in real time.

The study showed that only 21 per cent of Canadian oil and gas companies with annual revenues over $100 million continuously monitor and analyze their data while operating. Almost three quarters of companies instead use offline tools like spreadsheets to analyze gathered data. It's not like real-time tools for data analysis don't exist. Calgary-based companies like Pason Systems Corp. have developed such systems for drilling companies and have been active in the market for years.

Now, new data management companies are moving into the sector and betting that energy producers will increasingly make use of real-time data analysis at their operations. "Companies that aren't adapting to this trend are likely to fall behind," Elliott says. "Real-time analytics can provide increased visibility of large volumes of data which lets businesses react more quickly to events and compete harder in the market." At this rate, it seems that only one in five production companies have taken that advice to heart, which could mean that big data presents a big opportunity for the energy industry – or a tough sell for companies like Bulldog Containers, iGate and SAP. AO