

DECODING THE DATA

ClearPeaks' partner and general manager, Gianluca Nacci, spoke with Pipeline Magazine to discuss the importance of Business Intelligence solutions across the oil and gas sector.

With oil prices expected to remain around the \$40-\$60 mark for the foreseeable future, the global oil and gas sector is looking for ways to cut costs, boost uptime and above all maximise profits. The digitisation and automation of assets offers producers the opportunity to dramatically increase their efficiency and productivity levels by collecting performance data from their assets.

The amount of data being collected is staggering. Across the Middle East, tens of thousands of remote sensors are collecting millions of gigabytes of data from oil and gas operations. However, collecting the data is only the first part of the challenge. If operators are to make the most of this wealth of digital information, they must find ways to quickly and efficiently analyse it. If this is done properly, companies should be able to review their past performance, refine their current production processes in near real time and even predict trends as they emerge. All of this should allow them to stay ahead of the profitability curve.

ClearPeaks is a provider of Business Intelligence (BI) solutions for operators in the oil and gas sector. The company specialises in creating interactive dashboards that allow companies to critically analyse the big data generated at their facilities.

"If the data doesn't tell you a story, it's pretty much useless," said ClearPeaks' partner and general manager, Gianluca Nacci.

"Business Intelligence services used to be seen as a "nice to have" function. What we are starting to see now is that they are becoming a "must have." This gives us the opportunity to build and develop BI technology. It gives us an opportunity to make the most of all that big data using predictive analytics to tell us what is likely to happen in the future. It allows us to predict when a sensor is going to fail, which helps to prevent unplanned maintenance and costly shutdowns. With Business Intelligence solutions, we try to take the unpredictability out of doing business."

The company's suite of bespoke



dashboards act as a one stop shop for data analysis, making the data highly visible and accessible for all staff.

Working with Gasco

ClearPeaks has delivered a groundbreaking project with UAE gas processing giant, Abu Dhabi Gas Industries Ltd (Gasco).

ClearPeaks began working with Gasco in 2010, when the company decided that it wanted to streamline its operations through better use of analytical data.

"They had all this data but they did not have a single, consolidated view of that data, particularly for the management. There was a plethora of reports from many different systems. Some came from Excel sheets, which people have to spend all day trawling

through to extract the pertinent data, some came from other programmes.

"This was the situation here at Gasco in 2010 and to be honest that is quite a common situation at other companies even today. Lots of systems, with their little reporting systems on top, but no clear visibility of that data.

ClearPeaks designed a suite of dashboards that provided Gasco with easy access to its data, allowing it to analyse and optimise its operations in incredible detail. Achieving this was no mean feat. Gasco has producing assets at five separate locations: Habshan, Ruwais, Bab, Asab and Buhasa.

"The initial challenge was "how are we going to consolidate all of this data?" We had to take data from a total of six consolidated Enterprise Resource Planning (ERP) systems. We also had data coming from



some manual sources, such as Excel, which we needed to incorporate.

“It took a lot of effort and support to enable us to do this consolidation exercise. We created an Enterprise Data Warehouse, where all of the data was consolidated and aggregated, in order to be able to give the business what they wanted.”

Nacci believes that a big factor in the success of the project was the enthusiasm with which the Gasco senior management committed to it.

“The Gasco management were incredibly supportive during this project. They believed in the project and supported us throughout the whole process.”

There were numerous challenges to be overcome in implementing the project, as Nacci explained:

“The process itself can be quite cumbersome: you are talking about liaising between many, many different departments and divisions, each with their own processes and ways of doing things. You have to prioritise who will come first, but you also need to get buy in from every individual department. At the end of the day, if we create a system for a company, that company has to use it. As I said, the Gasco team were absolutely fantastic in supporting us throughout this process.”

ClearPeaks delivered a range of dashboards to Gasco, ranging from everything from HR and Finance operations to the company’s core business of gas processing and distribution. Regardless of which department the dashboard was to be used in, Nacci says that the key goal was simplicity and ease of use.

“We aim to provide the most easy to use dashboards. Everything needs to be usable and understandable for everyone. You should not need to have a degree in engineering or computer science to use these dashboards – they should be available for everyone to use. Simplicity and user-friendliness is key. We tried to reduce the number of clicks you need to make in order to access the information.”

When designing the dashboards for Gasco’s key business area of gas processing, ClearPeaks’ considered the entire product lifecycle, from feed stage right the way through to export.

“In a nutshell, you have the extraction

of gas from either associated or non-associated sources. This gets processed and turned into sales gas and NGL. NGL is then fractionated and gets turned into other products like butane and propane. There are also by-products like sulphur and condensate. Sulphur gets sent to Borouge and Condensate gets sent on to other ADNOC subsidiaries.



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“We can see the entire production flow of all of these products on the dashboard, from the feed stage right through to final processing. You can see how much product has been extracted from the ground, how much has been processed and how much has been shipped out already. Using the drill down functionality, we are able to look into any of those areas in incredible detail.

“You can explore the five different Gasco sites: Habshan, Ruwais, Bab, Asab, Buhasa. You can see the daily feed, the amount of NGLs, the amount of condensate and the amount of sales gas, for each of these facilities. You can drill

down in to any of the facilities and get a much more comprehensive view of the site,” he explained.

As well as production data, the dashboards also provide information about the utilisation of the plants. The data is calculated precisely and analyses the uptime of the various producing assets.

“It also shows you the product flow – how much ethane is going in, how much is being sent to Takreer, how much is being sent to Borouge, how much is being sent to the other Opcos for processing?”

“We also have a maintenance dashboard that covers all the different sites and all the assets within the sites. It focuses on the utilisation, the reliability and the uptime of the facilities as well as C3+ recovery. It gives you a crucial insight into how productive and how efficient a particular asset is.

“You can understand that this kind of information is absolutely crucial for the site managers. It is invaluable for accurate production planning.”

ClearPeaks also designed dashboards that analysed data from Gasco’s shipping and export activities. Nacci said that this had a profound effect on boosting profitability for the operator.

“As far as the shipping dashboard goes, we had one main objective: to make sure that our inventory was optimised. We needed to make sure that when the ships arrived, they were able to take the optimum amount of product. We needed to make sure that there was enough product for them to take but we also had to make sure that we didn’t overshoot the production, because storage space was limited, for each of the separate products,” he said.

This dashboard contains scheduling information on the ships, including when they will arrive, how much capacity they have and how much product they took last time they left port. Access to this information allowed Gasco to plan its production and distribution accordingly.

Business Intelligence solutions offer operators the opportunity to make cutting edge use of the big data that is generated by their assets. In doing so, they are able to boost performance, reduce unplanned maintenance and dramatically improve their bottom line. 📌