

DIGITAL DELIVERY: Queensland President Rachel Kieft with Brian Boulmay, Global Integration Director of BP, after his presentation to PESA Members in Brisbane.



PESA delegates get insights into BP's Digital Data transition

ATTENDEES of the PESA QLD Branch Technical luncheon were treated to an informative and entertaining talk in November from Mr Brian Boulmay, Global integration Director of BP.

Brian's presentation, entitled 'BP's Geospatial Transformation', details the

development of BP's transition towards a digital data repository – a platform for hosting geospatial, exploration and operational data.

Fresh from stepping off a plane from Houston, Brian stopped into Brisbane whilst on a tour of Australia acting as Keynote speaker for the Ozri 2019 Conference. Ozri is the annual Australian users conference for

Esri; one of the leaders in geospatial technologies.

Esri worked with Brian and his team at BP to develop an in-house unified data visualisation platform called OneMap.

A crowd of nearly 40 attendees gathered at the Hilton Hotel to hear Brian deliver his speech. Starting

with a short introductory video, the OneMap platform was showcased to the crowd.

The OneMap platform is the culmination of vast amounts of diverse datasets hosted by BP's Upstream Digital Organisation 'DataWorx'. OneMap seamlessly plugs in to data from DataWorx for creating visualisations, and reporting outputs, and lets users customise applications to fit business needs.

Brian's vision for Geospatial Transformation was born out of a desire to "be the leading digital E&P and deliver \$10B value in five years." This was no mean feat, and requires a transformation across operational and cultural domains.

"...changing the ways we used to work from paper and spreadsheets into more automated data-driven workflows."

Brian stressed how "location" is at the heart of almost all of BP's business processes. From gathering sensor data collected at a single field site, right up to 3D digital immersion models of offshore production platforms. This message clearly resonated with attendees in the audience, and they were able to draw parallels with their own work and processes. The volumes of data going in and out of BP's servers are truly mind-boggling.

Through the OneMap platform, Brian discussed how users can create visualisations to meet their business needs, affectionately referring to these users as 'Citizen Developers.'

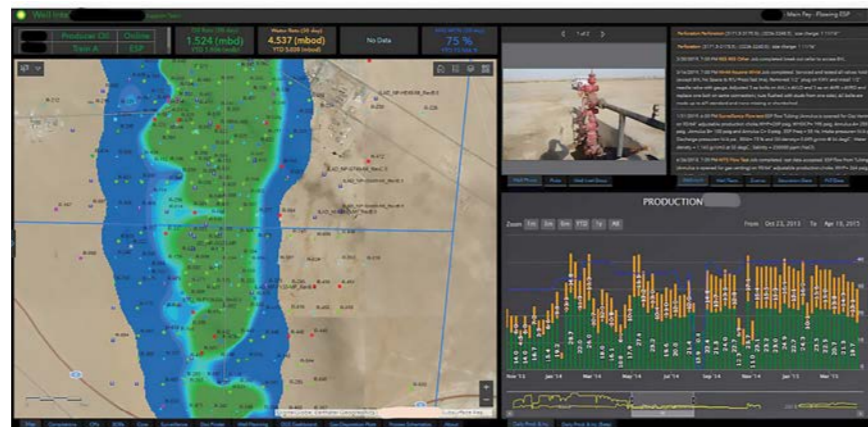
The visualisations that Citizen Developers can create can take many forms. They can be as simple as a dashboard displaying single well production performance over time. Similarly, visualisations can be scaled up to incorporate dozens or hundreds of data sources, and provide complex and intricate insights using sophisticated data analysis techniques.

Brian took the audience through a dashboard visualisation for a production field asset. On the left is a map view of the asset, and adjacent panes displayed production profiles, and well specific information.

By selecting a well from the map, a user was able to view individual production

Connecting up BP globally

1 billion twice as many data records enter the BP data lake than tweets on Twitter	14.2+ billion Records in the Geo-IoT system helping to drive new insights via 400+ million calculations a day
40 million a day Number of calculations Plant Operation Advisor performs on 400 pieces of equipment on our Atlantis facility. More calculations than unique visitors to YouTube	11 petaflops BP's Center for High Performance Computing is equipped with 9 petaflops compute power – the world's biggest supercomputer dedicated to commercial research



profiles, well engineering data, formation tests, petrophysical logging, laboratory data, and core photos plus any number of other datasets linked to that well.

Most surprising was that the Citizen Developer created Version 1 of this visualisation in two days.

The platform utilises drag-and-drop functionality to build and position components onto the canvass. User interface doesn't rely on the user to implement tons of complex code.

As a demonstration for the Australian audience as to how quickly they could create and share valuable information,

Brian used the example of the NSW and Queensland bushfires which were raging across the states at the time.

Brian had his team quickly compile a map showing publicly available data feeds obtained from state authorities which detailed the extent of fire fronts. Additional internal BP datasets were overlaid, such as BP retail sites, location of known suppliers and industrial operational facilities, amongst others.

Upon zooming in and panning around in the interactive map, Brian was able to overlay satellite imagery acquired only days earlier, showing the boundaries of

fire scarred territory with amazing detail and clarity.

Brian showed the audience a few other visualisations including one for subsea pipelines, and real-time operations tracking. Brian went on to comment about digital trends, in particular the progression for hosting large datasets from on-premises repositories, and shifting them into the cloud. Cloud solutions are becoming more of a reality for large datasets, and allows cutting edge data analysis techniques such as Machine Learning and Artificial Intelligence to be deployed in innovative ways.

Brian was quick to point out that this platform wasn't built overnight. The seeds were sown some time ago. The first roll out was in 2015 and involved uptake by over 4,000 users across the whole organisation. Revisions over time added various functionality to the platform, which resulted in steady increases to the user base over time. In 2020, BP are predicting uptake from over 17,500 users onto the latest OneMap v6.0. Most recent enhancements offers support on mobile devices, allowing flexibility of work as well as instantaneous feedback to the data stores.

This type of visualisation and flexibility is the result of organising data



warehouses into a centralised and immediately available data lake environment. In this use case, the true hero is the Digital Organization DataWorx. High-impact OneMap visualisations are supported by the hard work of data technicians, who govern, collate, connect, publish and maintain the data lake environments and work to add new sources of high-value data.

Each of the attendees would have taken away with them a piece of Brian's vision, and a new perspective on E&P workflows. Many of us have surely heard of terms like 'Big Data', 'Cloud Storage', and 'Data Lake' but some of us are struggling to answer the question "what does this mean

for me?" After Brian's insightful and thought-provoking presentation, we can start to gain a clearer picture of the direction that some of our industry leaders are moving.

Many thanks to Brian and Esri Australia for supporting a fantastic and insightful technical luncheon for PESA members.

To find out more about BP's digital transformation, follow the link below to find videos, articles and also a recording of Brian's Ozri 2019 keynote presentation, and downloadable slideshow:

<https://info.esriaustralia.com.au/acton/media/19230/spatial-source-brian-boulmay-ozri-video>

