

*Navigating The Future of E&P
Data Management Beyond 2020*

Australia Data Management Workshop AGENDA

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KATALYST
DATA MANAGEMENT

Training Morning (Separate Event) Tuesday, August 25, 2020

Separate Registration Required - Discount Available for Workshop Registrants

Perth Time 8:55-9:00 am	Brisbane Time 10:55-11:00 am	Introduction & Welcome Remarks
9:00-10:00 am	11:00-12:00 pm	Introduction to Machine Learning Lewis Matthews (West Texas Data Science Institute, USA)
10:10-10:15 am	12:10-12:15 pm	Introduction
10:15-11:15 am	12:15-1:15 pm	An OSDU Overview Daniel Perna (EPAM Systems, USA)
11:25-11:30 am	1:15-1:30 pm	Introduction
11:30-12:30 pm	1:30-2:30 pm	Introduction to Data Governance Jess Kozman (Woodside Energy, Australia) ** Change of presenter

Australia Data Management Workshop

"Navigating The Future of E&P Data Management Beyond 2020"

Wednesday, August 26, 2020

8:30-9:00 am	10:30-11:00 am	Remo Platform Opens & Networking
9:00-9:15 am	11:00-11:15 am	Introductory Comments Australian PPDM Leadership Teams
9:15-9:50 am	11:15-11:50 am	Welcome Remarks & PPDM Update Trudy Curtis (PPDM Association, Canada)
9:50-10:20 am	11:50-12:20 pm	OSDU: A Business Transformation Movement Ron Clymer (EPAM Systems, USA)
10:20-10:35 am	12:20-12:35 pm	Interactive Discussions
10:35-11:05 am	12:35-1:05 pm	NETWORKING BREAK, SPONSORED BY KATALYST DATA MANAGEMENT
11:05-11:35 am	1:05-1:35 pm	Self-Career Development in Petroleum Data Management - Where Are We Heading? Zubaidah Abu Bakar (Repsol, Malaysia)
11:35-11:50 am	1:35-1:50 pm	Interactive Discussions
11:50-12:20 pm	1:50-2:20 pm	Data In The Cloud For a Remote Workforce. What Did We Learn? Jess Kozman (Woodside Energy, Australia), Charlie Butterworth (E&P IT Solutions), Steve Prager (BP), Tamryn Barker (Core Innovation Hub), Franz Deimbacher (Amazon Web Services), & Niall O'Doherty (Teradata)
12:20-12:50 pm	2:20-2:50 pm	Data Tagging Used in Digitalised Procedure Data Management to Push Operation Insights Jan Kaare Iglund (Exebenus, Norway)
12:50-1:00 pm	2:50-3:00 pm	Closing Remarks Leadership Teams & Trudy Curtis (PPDM Association)

Australia Data Management Workshop

"Navigating The Future of E&P Data Management Beyond 2020"

Thursday, August 27, 2020

Perth Time 8:30-9:00 am	Brisbane Time 10:30-11:00 am	Remo Platform Opens & Networking
9:00-9:15 am	11:00-11:15 am	Introductory Comments Trudy Curtis (PPDM Association, Canada)
9:15-9:35 am	11:15-11:35 am	The Simple Shift - How Useful Thinking Changes the Way You See Everything Chris Helder (Chris Helder Enterprises, Australia)
9:35-10:05 am	11:25-11:55 am	Data Quality In Oil and Gas: Now Is The Time To Take Action Paul Orfanos & BJ Cummings (Stonebridge Consulting, Australia/USA,)
10:05-10:50 am	12:05-12:50 pm	Professionalising Our Discipline in 2020 and Beyond Oliver Thistleton & Doris Ross (PPDM's Professional Development Committee, Australia)
10:50-11:20 am	12:50-1:20 pm	NETWORKING BREAK - SPONSORED BY SUMITOMO/EXEBENUS
11:20-11:50 am	1:20-1:50 pm	Optimisation of Gas Wells Using Machine Learning Leveraging Physics-Based and Industry Data Mahshid Firouzi (University of Queensland, Australia)
11:50-12:20 pm	1:50-2:20 pm	The Transformation of Oil & Gas Data Management Through Data Science and Analytics Chris Frost & Neil Constantine (Sword Venture, UK/Australia)
12:20-12:45 pm	2:20-2:45 pm	Closing Remarks Leadership Teams & Trudy Curtis (PPDM Association)
12:45-1:00 pm	2:45-3:00 pm	Networking

Thank You To Our Leadership Teams

The PPDM Association would like to thank the Australia West and Australia East Leadership Teams for all their invaluable efforts in making this combined 2020 Australia Virtual Petroleum Data Workshop a success. Throughout the year, these individuals help organize and enhance all our PPDM events in Perth, Brisbane and Adelaide and we are truly fortunate to work with them to build our Australian community.

- Alan Dunn
- Alex Ross
- Andrew Cairns
- Antonie Du Toit
- Chris Hudson (Co-Chair, West)
- Grace Yang (Co-Chair, West)
- Jess Kozman
- Ma Fui Chia
- Mahshid Firouzi
- Martin Henderson
- Martin Storey
- Melvin Keightley
- Morella Rey
- Paul Hodgson
- Peter Goyne (Secretary, West)
- Robert Murray
- Stephen Malajczuk
- Tony Knight (Chair, East)
- Tony Perry

Katalyst Data Management (Break Sponsor)

Subsurface Data Management for Your Cloud Environment

Katalyst Data Management provides complete subsurface consulting and digital transformation services, assisting oil and gas companies with the challenge of managing volumes of subsurface data cost effectively and securely. Katalyst's end-to-end services include every step in the subsurface data life cycle, from digital transformation and verification, to cloud strategy and organization, to marketing seismic data online.

iGlass - PPDM Gold Compliant for Over 80 Petabytes

Katalyst's hosted data management software iGlass provides a complete set of tools that encompass the full life cycle of our customers' subsurface assets. Certified as PPDM Gold Compliant, iGlass incorporates a web based map interface providing direct access to subsurface data in the cloud and/or private storage environments.

Subsurface Consulting Services

With 40 years in the industry and five global datacenters, Katalyst is capable of handling any scale project for the digital transformation of subsurface data. Our data consulting services include:

- Tape Transcription and Data Conversion
- Metadata Capture and Database Migrations
- Project Data Loading
- Analytical Reporting
- Geospatial Governance and Administration
- Data Governance – Best Practices and Process Improvement
- Professional Data Audits
- Cloud Strategy Design and Implementation

For more information, please visit katalystdm.com.



Exebenus/Sumitomo (Break Sponsor)

Exebenus focus on digitalization and automation of drilling & completions operations to maximize performance and reduce nonproductive time (NPT). By combining software and services, we digitalize the information exchange between office and rig. Our **Exebenus Pulse** solution creates digitalized, detailed operating instructions that can be merged with real-time data, allowing you to automatically validate and track procedure execution and notify when deviating from plan enhancing the quality and safety of your operations.

Exebenus Pulse digital operating procedures enhance quality and reduces NPT in execution through:

- Easy generation of operating procedures using templates, previously procedures, or automatically when making up toolstring/BHA
- Embedded approval process to manage procedures swiftly and easily from draft to approved procedure and preapprove contingency procedures
- Tagging of unstructured information and data such as lessons learned, best practices, checks, and risks for easy access at the right time in the right context of the procedure
- Using real-time data to validate, highlight and manage deviations from plan

Our **Exebenus Pulse ML** agents predicts well conditions and increase situation awareness and operation productivity. In real-time, our agents can successfully pre-empt and predicts high impact situations such as differential sticking, hole cleaning and wellbore geometry typically resulting in stuck pipe.

With the digital advantage from Exebenus, each well project advances the next. Exebenus Pulse provide real-time insight and full-time confidence in operations.

EXEBENUS

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2020 Australia Virtual Public Training

*Each of the following one hour courses will be available the morning of August 25, 2020.
This event is independent of the Workshop but a discount is available for Workshop registrants.*

Introduction to Machine Learning

Presented by: Lewis Matthews, West Texas Data Science Institute

Many teams struggle to understand where machine learning methods could be applied within their organization. This session will explain the basics of machine learning from an oil and gas perspective and demonstrate some basic code. Attendees can expect to leave the session with a reasonable mental model of the three main types of machine learning and examples of how they can be applied. Whether you're a team of engineers, geoscientists, executives, or accountants, there are machine learning applications that improve your world and in this session we will touch on them.

Short Biography: *Lewis Matthews was born and raised in the United Kingdom of Great Britain. At the age of 17 he emigrated to the USA and enlisted in the United States Navy where he served for 9 years as a Corpsman with Marines. Since then Lewis has received several degrees including economics, geology, and an MS in geophysics and seismology during which he independently discovered fractal clustering in petrophysical logs. He currently works for CrownQuest Operating as a data scientist where he evangelizes solutions to complex problems. To encourage understanding and broad collaboration across companies Lewis teaches machine learning applications for oil and gas problems. These workshops have proven to be incredibly popular and helpful to enhance the general understanding of the strengths and limits of these incredibly hyped technologies.*

An OSDU Overview

Presented by Daniel Perna, EPAM Systems

The Open Subsurface Data Universe (OSDU) is an open forum and data platform, and is arguably the biggest information technology initiative in the petroleum industry today, with over 150 active member companies including many large operators, service companies, data vendors, tech companies, cloud providers, consultancies – and standards organizations like PPDM. Since OSDU is relatively new, this presentation will give an overview of what OSDU is, including aspects of OSDU's history, roadmap, forum structure, expected business benefits, technical architecture, and schemas – and how that relates to the practice of petroleum data management.!

Short Biography: *Daniel Perna is a Business Consultant for Upstream Oil & Gas with EPAM Systems, specializing in data strategy. He has over 11 years experience in Upstream E&P with roles in business unit geoscience, enterprise subsurface and well data management, data governance, master data management, data quality, business analysis, data integrations, and training. Daniel is a PPDM Certified Petroleum Data Analyst, a member of multiple PPDM committees, and leads the Well Delivery Process project of OSDU.*

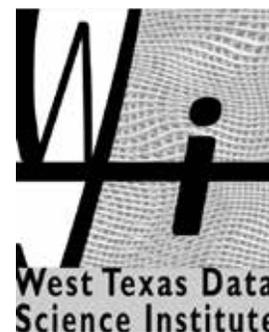
Introduction to Data Governance

Presented by: Jess Kozman, Woodside

Data Governance is a topic that is daunting for many professionals. The idea of governance elicits visions of massive bureaucracies and mountains of paperwork. Governance is integral to any organizational data management effort, and it doesn't need to take years before the value becomes evident. This session is intended to provide a practical overview of governance topics and is intended to impart practical knowledge as well as whet the appetite of the attendees for deeper dives into specific topics. The course will consist of modules covering Organizational Change and Planning as well as Master Data Management and Data Governance Architecture. Attendees should leave with some practical approaches to leverage within their organization, and an idea of where they may need to focus to ensure data management success.

Short Biography: Petrotechnical Solutions Manager in the Subsurface Data & Information Management group at Woodside Energy Ltd., Jess Kozman is currently involved with deploying cognitive cloud compute platforms for data management and storage. Previously involved with Woodside's move of geophysical tape inventory to cloud storage. Experience in the industry since 1980 as an exploration geophysicist, IT manager, consultant and course facilitator.

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Speaker Abstracts & Biographies

Welcome Remarks & PPDM Update

Trudy Curtis (PPDM Association)

Description of the Presentation: Learn about what's new in the PPDM Association including updates on recently released projects, professional development opportunities and upcoming events.

Short Biography: Trudy Curtis is the Chief Executive Officer of the Professional Petroleum Data Management (PPDM) Association, the global Not-For-Profit society focused on data management best practices and standards and data management as a professional discipline. Based in Calgary, Canada, Curtis has nearly four decades of years of experience in the industry and is known around the world for her outspoken advocacy of data as a strategic asset, and its management as a core business function. In 1996, she joined the PPDM Association as architect, CIO and ultimately CEO of PPDM Association. Curtis is leading the way to the emergence of data management as a global discipline, the creation and industry adoption of data management standards and best practices, the development of professional development and certification programs for data managers, and the professionalism of data management in the petroleum industry.

OSDU: A Business Transformation Movement

Ron Clymer (EPAM Systems)

Description of the Presentation: The OSDU forum has a unique opportunity to introduce not only a functional open API standard and a reference implementation, but it also has a unique opportunity to revolutionize the way our collective community comes together bring the subsurface domain to a revolution in a way we interoperate amongst not only teams, but teams of companies.

With such a goal in mind, there needs to be a shared vision of prosperity and opportunity for Application Developers, Data Vendors, Service Providers & Operators. As an ecosystem that benefits a select few, will only certainly fail in an economy that requires all of us.

Our vision is to empower Petro technical teams to expand and challenge their full potential. As a forum we work to challenge the boundaries of what is possible as we believe our vision of pushing the limits of innovation can best flourish when the industry comes together to create an open ecosystem of member companies that inherits its vision through lenses of shared economical prosperity from the mutual respect & comradery driven & nurtured by the spirit of the OSDU forum.

Ron Clymer, part of the OMC, OSDU Management Committee, shares a perspective on why OSDU is uniquely positioned to change an industry, and how it plans to accomplish that vision.

Short Biography: Ron Clymer has 9 years of upstream oil and gas domain experience, specializing in enterprise subsurface data management, business life cycle, solution development and enterprise capability enablement. He currently serves as a Senior Manager of Business Consulting for EPAM Systems as well as serves on the OSDU Leadership Committee representing service organizations, ISVs and Data Vendors. Ron has previously served as the Subsurface Data Management, Process and Governance Lead at Devon Energy Corporation, where he established the subsurface data management practice, developed a proprietary full life cycle enterprise subsurface master data system, and lead a culture of innovation, integration and collaboration between the engineering, geoscience and reservoir communities. As a member of PPDM and SPWLA, Ron has presented and authored multiple white papers on executing and evolving subsurface capabilities for the enterprise in global upstream forums such as PPDM, PNEC, SPWLA Data & Analytics, and the Landmark Innovation Forum (LIFE). Ron holds a Bachelors of Fine Arts from the University of Oklahoma.

Speaker Abstracts & Biographies

Data In The Cloud For a Remote Workforce. What Did We Learn?

Jess Kozman (Woodside Energy)

Description of the Presentation: A cross-industry effort to collect best practices and lessons learned from those practicing data management for large volume data sets in a new working environment. We hope to answer a few questions: 1) What existing technologies had a positive or negative impact on remote data access? 2) How prepared were we to support remote workers with access to large datasets? 3) What tools and techniques are likely to become standard operating practice? 4) What new ideas did we have an opportunity to try? In Australia the petroleum industry has previously shared discussions with other industry segments utilizing large volume data in the cloud, including minerals & resources, sport & gaming, space science & astronomy, health & medical, and transport & infrastructure. We intend to gather knowledgeable experts from these fields again to review our ideas as we emerge into a new working landscape. Please let me know if you or colleagues are interested in participating or you can direct me to others who may have valuable insight.

Short Biographies: Petrotechnical Solutions Manager in the Subsurface Data & Information Management group at Woodside Energy Ltd., Jess Kozman is currently involved with deploying cognitive cloud compute platforms for data management and storage. Previously involved with Woodside's move of geophysical tape inventory to cloud storage. Experience in the industry since 1980 as an exploration geophysicist, IT manager, consultant and course facilitator. Franz X. Deimbacher has over 25 years oil/gas industry experience and has been with Amazon Web Services since 2017 where he serves as the Head of Technology for Energy based in Houston, TX. Previously, Deimbacher was at IHSMARKIT, the world's leading provider of critical information, analytics and expertise for major industries and markets worldwide. As the VP Energy he was responsible for the technical and business transformation of IHSMARKIT as well as innovation. Before that, Deimbacher was with Schlumberger, the world's largest oilfield technology company, where he served in senior technical, operational, and management roles in Europe, Africa, Middle East, Russia, and the US. Deimbacher has also worked in several disruptive technology startup companies, and he is currently the VP of the Board of the Society of High-Performance Computing Professionals. Deimbacher has an MSc-degree in Petroleum Engineering and a PhD-degree in Reservoir Engineering, both from the Mining University Leoben, Austria. Deimbacher has over 40 professional publications and he holds several patents.

Charlie Butterworth: 1982 to 2000 data analysis, management of Geo-science IT (Schlumberger and Chevron) 2001 onward providing high performance storage and compute for oil exploration and recent year's supply of wholesale hosted storage to other service providers (E&P IT solutions). Member of AICD.

Steve Prager has worked in upstream oil and gas for over 30 years in a range of roles supporting subsurface data and information management. He currently holds the role of "Global Domain Lead, Subsurface" in BP's Digital team, and is responsible for delivering and implementing a corporate-wide strategic framework making BP one of the leading integrated digital energy companies. His team spans multiple time zones, continents and closed borders and he's now given up air travel in favor of MS Teams and Zoom.

Speaker Abstracts & Biographies

Data Tagging Used in Digitalized Procedure DM to Push Operation Insights

Jan Kaare Iglund (Exebenus)

Description of the Presentation: Tagging of information is heavily used in social media to make it possible for a user or a company to push information to other users or clients in context of their search or information gathering. The ability to collect and store information such as interest, gender, political direction and more gives a company a massive marketing benefit and market value. It is a key component of social media technologies. Casing points are Google and Facebook. In the presentation we will demonstrate how tagging is used to structure unstructured data by using a metadata hierarchy model for use in digital operating procedures for drilling and completions. By tagging relevant data such as best practices, lessons learned, checks and risks to rig, equipment, operation type, operation step, geological formation etc. the data model makes the information accessible to users in context of the situation and at relevant times in the procedure. We will show client examples where corporations use tagging to push corporate standards and advocate specific initiatives (e.g. HSE) to user communities, geographical areas or assets.

Short Biography: Jan Kaare started his career as an LWD operator, Baker Hughes. As SiteCom Discovery Product Director, Kongsberg Digital, he perfected and advanced real-time data management support for drilling operations. He joined Exebenus to manage the Exebenus Pulse solution with focus on the Run module and ML agents. Jan Kaare is a member of SPE, Norwegian Petroleum Association and IADC DWIS focusing on real-time data management. He has a MSc in Petroleum Technology from University of Stavanger, Norway.

The Simple Shift - How Useful Thinking Changes the Way You See Everything

Chris Helder (Chris Helder Enterprises)

Description of the Presentation: Life is complicated. Wherever we go, we are surrounded by noise, choice and adversity and it can be hard to see what's important, what to delegate and what to avoid. This leaves us feeling stuck and unable to keep up. The solution is at your fingertips. Useful thinking is a simple but incredibly powerful idea designed to shift your perspective and provide you with essential tools to navigate the challenges of the modern world. This presentation will:

- change how you approach life's challenges
- identify what really matters - and what doesn't
- seek out what brings you joy and fulfilment in your life
- avoid the things that sap your energy or blur your focus

Short Biography: Chris Helder is a world class keynote speaker and master storyteller. Chris' presentations give individuals and organisations the tools to make a simple shift in their thinking to gain greater clarity on achieving goals. Chris brings with him an abundance of energy, humour and the ability to quickly connect with the audience. He has been a professional speaker for 18 years and has done over 2,500 presentations around the world. He is the author of three best-selling books.

Speaker Abstracts & Biographies

Data Quality In Oil and Gas: Now Is The Time To Take Action

Paul Orfanos (Stonebridge Consulting)

Description of the Presentation: Data quality continues to be a significant issue for oil and gas organisations. Bad data leads to bad analytics, bad decisions, and bad business system fundamentals. Getting the data quality foundation right requires a rethink about:

- how data is captured
- where it is stored
- who owns the data
- who has visibility and access to the information
- how the data will remain good

Steve Jobs once said: "Simple can be harder than complex: You have to work hard to get your thinking clean to make it simple. But it's worth it in the end because once you get there, you can move mountains." The same is true for data quality. For any data set to qualify as good quality, it must possess essential characteristics like data accuracy, data completeness, data consistency, data relevance and timeliness.

Establishing an automated data quality regimen can generate tangible business impact by accelerating decision-making cycles and offloading data gathering/integration activities from information consumers on the business side. In this presentation we will explore strategies for achieving and sustaining high data quality. Attendees will learn about specific data management techniques, tools, and platforms that ensure data quality for greater productivity and reduced costs.

Short Biography: Paul Orfanos is Stonebridge's regional executive director for Australia and New Zealand. In this role, Paul oversees a team of ANZ consultants to deliver client project in collaboration with Stonebridge's US-based team. Paul has over 20 years of experience in delivering data and IT business solutions.

William "BJ" Cummings is a managing director at Stonebridge Consulting. In this role, BJ has overall responsibility for EnerHub, Stonebridge's enterprise data management platform. BJ has over 15 years of experience developing advanced business intelligence solutions for oil and gas companies.

Self-Career Development in Petroleum Data Management - Where Are We Heading To?

Zubaidah Abu Bakar (Repsol)

Description of the Presentation: Petroleum Data Management professional is not a popular field in the O&G industry. Always seen as something less important compared to other domain. However, for the past 15 years, (at least in Malaysia) the importance of the roles is started to being recognized by the industry. Though, the competency and the path of the career development are something that is missing. In North America and Europe, institutions started to step up to have Petroleum Data Management courses in the university. Associations started to work collaboratively with operators and national oil companies to work on the accreditations of this field.

Yet in this region, the path is still unclear. Collaborations from national oil companies, operators, services companies and institutions are crucially needed to further work on the career path as to align with the evolving O&G industry. Furthermore, this is the very fundamental element in any Digital Transformation initiative."

Short Biography: <https://www.linkedin.com/in/siti-zubaidah-abu-bakar-cpda-2b351710>

Speaker Abstracts & Biographies

Professionalizing Our Discipline in 2020 and Beyond

Oliver Thistleton (PPDM's Professional Development Committee)

Description of the Presentation: Fitting with this year's theme, "Navigating the Future of E&P Data Management Beyond 2020", this presentation will be a continuation from last year's workshop, verifying the relevance and content of PDC outputs.

Delegates will have an opportunity to review the Compensation Survey Dashboard and participate in discussions and Mentimeter poles related to work of the Professional Development Committee (PDC) Job Families group, through a review/discussion of a selection of roles from the six (6) Subsurface Job Descriptions (Data Analyst, Data Manager, Chief Data Manager, Petrotechnical Business Analyst, Data Steward and Petrotechnical Data Scientist). The workshop aspect of the session will delve into one (1) to two (2) Job Descriptions developed. Each job description includes:

1. Job Summary
2. Major Duties / Responsibilities

This presentation and workshop will provide an opportunity for regional delegates to review and to add to this body of work. Establishing these critical foundational benchmarks are the first step in solidifying our professional discipline. Although PPDM leads this critical initiative, it's important to remember, PPDM is made up of Members, Volunteers, and Professionals, who are passionate about their professional discipline and want to see themselves represented on a career map in the nation's Standard Classification of Occupations (SCO), or within a National Occupation Code (NOC). The workshop aspect will engage delegates in providing specific feedback to verify selected content of the job descriptions and identify any obvious gaps. We will engage the use of Mentimeter to capture some critical content feedback with ample time for questions and answers.

Short Biographies: Oliver Thistleton is the Consulting Lead for Sword Venture's Asia-Pacific Business Unit. Oliver began learning the discipline 20 years ago on service desk teams for Venture's various London-based clients. He progressed onto projects improving structured data and implementing document solutions. With the move 7 years ago to the Australia office, Oliver has worked on a broad range of projects and consultative engagements including maturity assessments, governance definition, data quality improvement and application/data lake solution implementations. Oliver enjoys giving back to the discipline through an active role on the PPDM Professional Development Committee and supporting CPDA certification. Oliver has also delivered public and private training courses teaching subsurface data management best practice.

Speaker Abstracts & Biographies

Optimisation of Gas Wells Using Machine Learning Leveraging Physics-Based and Industry Data

Mahshid Firouzi (University of Queensland)

Description of Presentation: Considering the level of digitisation of major industries such as oil and gas and the amount of data available, use of these data and analytics have been recognised as a key enabler for transforming engineering processes towards a more efficient and sustainable process over a wide range of industries. There is no doubt that successful application of artificial intelligence and machine learning modelling approaches in any industry, including the oil and gas industry, depends on data quality and management. However, to translate data into meaningful insights and unlock its full potential value, in-depth knowledge of the subject-matter is essential.

This presentation demonstrates a successful application of machine learning, leveraging surface and subsurface data in the gas industry, in conjunction with physics-based data, to optimise performance of unconventional gas wells. Flowing bottom-hole pressure (FBHP) is a key metric for optimising performance and enhancing production in gas wells. Down-hole pressure sensors are used to monitor the FBHP in wells; however, their reliable measurement depends on regular maintenance and calibration, which requires expensive and complex well interruption.

In collaboration with our industry partners we developed a smart data-driven model which enables a real-time, reliable and low cost prediction of the FBHP in the event a pressure sensor fails - without interrupting production from the well.

Short Biography: Mahshid Firouzi is a Research Fellow in the School of Chemical Engineering and Centre for Natural Gas at the University of Queensland. Mahshid received her PhD in Chemical Engineering from the University of Queensland in 2014. Mahshid's research interests are in modelling multiphase flow dynamics (wellbore flow and pipe flow), predictive analysis and process optimisation using big data and machine learning. She utilises mathematical modelling, laboratory simulation and advanced analytics of big data to address and solve issues facing the energy industry. She works closely with national and international companies in the oil and gas industry and leads multiple research projects focussed on reducing OPEX in gas wells. She has over 45 publications including one book chapter and one patent. Her work has been featured in the Queensland Government Mining Journal, the Australian Energy Review and the Mining Review.

Speaker Abstracts & Biographies

The Transformation of Oil & Gas Data Management Through Data Science and Analytics

Chris Frost & Neil Constantine (Sword Venture)

Description of the Presentation: The digital landscape of the Upstream Oil and Gas industry is changing rapidly. Companies have begun to realise the potential for applied Data Analytics, Machine Learning and Artificial Intelligence across many domains. In a continuing difficult operating environment, organisations seeking cost efficiency savings and a competitive edge are driving technology adoption, mindset shifts and faster returns on technology driven investment. Mature tech companies, that have applied these analytics and techniques for several years, employ almost 7% of their entire workforce in Data Analytics. Our Industry has made it clear that it expects the use of these technologies to match this.

The challenge for the oil and gas industry is how do we realise the potential value from our legacy, unstructured and often undiscovered data assets? How can we incorporate complex Data Analytics into our existing enterprise architectures? But more importantly, how can we prepare? Sword Venture is leading a new wave of E&P Data Science and Analytics expertise within the data management domain, focused on real world data and information challenges, working alongside forward-thinking customers and delivering pragmatic operational solutions.

Short Biographies: Chris Frost is the Data Analytics Manager for Sword DataCo; recognised for his ability to deliver complex, technology enabled, solutions across the Data Management and Information Management spectrum. He facilitates a broad technical approach through the definition, design and delivery phases of high profile programmes, has successfully transitioned new capabilities into live operations, and has a track record of improving the effectiveness of working practices within Sword DataCo and its clients.

His areas of expertise are full stack development around current Information Management and data Management systems, systems engineering and bespoke architecture; this experience has been gained by combining the SME knowledge within the Sword Group and a fresh approach to tried and tested processes.

Neil Constantine is the Business Unit Director for Sword Venture Asia-Pacific responsible for delivery, growth and financial performance in the region. He maintains hands-on involvement as a data management consultant and is a Chartered Data Management Professional. In the last year he has worked projects including analysis of cloud storage costs for an Australian IOC, delivery of a data management current state assessment and strategic roadmap for a Middle East operator, and the definition of data standards and processes for one of the largest operators in the UK's North Sea ahead of a major asset acquisition. He is motivated by the opportunity for data and technology to improve the efficient delivery of business objectives, whilst also bettering the daily reality of the individuals and teams working with these improvements.