THE DATA LAB: USING ANALYTICS TO IMPROVE PRODUCTION
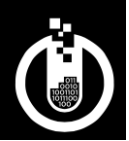
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Agenda

- SFC's Innovation Center program
- The Data Lab
- Landscape
- Core objectives
- Big data?
- Challenges for the O&G industry
- Some thoughts on Data Projects
- Summary

SFC's Innovation Centre Program

The Data Lab

- The Data Lab is a world class Data Science Innovation Centre focusing on generating significant economic, social and scientific value.

- The Data Lab is working to help businesses capitalise on a growing market opportunity in big data or more accurately, data science, developing capability on a local, national and global scale.

- The Data Lab is enabling industry, public sector and world-class university researchers to innovate and develop new data science capabilities in a collaborative environment.

The Data Lab

⊙ The Data Lab is industry-led, headed by the Scottish Technology Advisory Group's Big Data Lead, ScotlandIS, Lockheed Martin, DC Thomson-owned brightsolid and SAS, one of the world's largest software companies.

⊙ Based in Edinburgh (UoE), Aberdeen (RGU) & Glasgow (GU).

⊙ Financial Services, Government, Health, Oil & Gas, Online & Digital

⊙ Will work with Industry, Public Sector and SICSA universities

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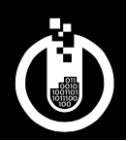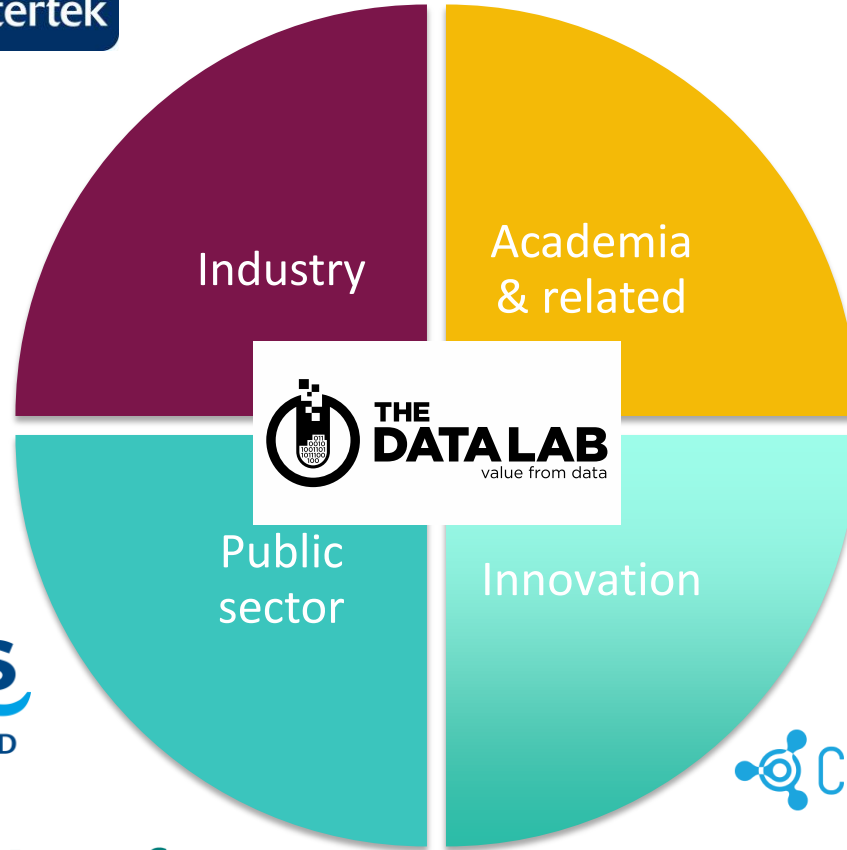
Landscape

Core objectives

Collaborative innovation
- Demand driven & open calls
- Industry & public sector challenges
- Strategic bids & IC collaboration

Skills and training
- Data Science MSc
- PhD funding, partnering with industry
- Online learning

Community building
- Workshops & conferences
- Technical talks
- Community sponsorship

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Challenges facing the O&G industry

- Significant drop in oil price – maximise uptime (production), minimise downtime (deferred production)

- Complex operations – remote, mature assets require very efficient operations (production and maintenance)

- Zero tolerance for health, safety and environmental incidents
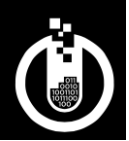
- Skills and experience age gap

How can Data Analytics help

- Good data analytics could help oil and gas companies improve production by 6% to 8% (http://www.bain.com/Images/BAIN_BRIEF_Big_Data_analytics_in_oil_and_gas.pdf)

- The oil and gas industry already has large amounts of data

- Can help drive evidenced based decision making, whether that be in exploration, drilling, operations or decommissioning

- Can be used to monitor systems, processes or equipment to identify changes in the operating conditions ensuring they are operating and optimum capacity (the power of 1%)

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The Data Lab: How can we help?

- We welcome "problem" or "challenges" from the private and public sectors
- We will fund projects and facilitate match funding (industry, SE, Innovate UK, EU, etc) to support academic engagement
- Quick-start research/ exploratory projects
- Medium-scale projects
- Large collaborative projects and strategic engagements
- Ultimately, we want to see economic and social impact

What makes a good big data project?

- Question (scoping to clearly define)

- Data Capture (quantity, quality, real time v batch, security / anonymity)

- Data Model (the how, e.g. Hadoop)

- Analyse (the process)

- Inform (the output)

What makes a 'bad' big data project?

- Asking the wrong questions
- Selecting the wrong uses
- Lacking the rights skills
- Accessing the correct data
- Disagreement on enterprise strategy
- Data silos
- Management resistance
- Problem avoidance

Summary

- The Data Lab is industry driven solving industry problems
- The Data Lab connects industry with cutting edge academic solutions
- The Data Lab can provide match funding for projects
- Data Science and analytics can have a significant effect on production efficiency – The power of 1%

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