UKCS
Data & Digital Maturity Survey

2020 REPORT SUMMARY – A CYBER PERSPECTIVE

SPE Aberdeen & InstMC Online Conference – Digitalisation of Process Control – November 2020

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Full report available from:
https://oilandgasuk.co.uk/product/ukcs-data-digital-maturity-survey-report-2020/

SCAN ME

SURVEY ORGANISATIONS

- **The survey was developed in collaboration between five organisations operating in the Digital Transformation space for the UK's oil & gas industry.**

OGUK — OGUK's aim is to strengthen the long-term health of the offshore oil and gas industry in the United Kingdom by working closely with companies across the sector.

technology leadership board — The Technology Leadership Board (TLB) works with the industry, government and other stakeholders to define priorities to adopt and develop oil and gas technologies, securing investments, and strengthen UK oil and gas industry competitiveness.

ONE — OPPORTUNITY NORTH EAST — Opportunity North East (ONE) is a catalyst driving transformational change in north east Scotland's economy. They develop and deliver projects to accelerate regional economic growth and diversification.

The Oil & Gas Technology Centre — The Oil & Gas Technology Centre's goal is to unlock the full potential of the UK North Sea, anchor the supply chain in North East Scotland and inspire a culture of innovation and transformation.

Deloitte. — Deloitte's UK Digital Capital Projects team supports oil and gas organisations in driving digital transformation through delivery of data/digital strategies, innovation processes, technology implementations and business change programmes.

SURVEY INTRODUCTION

- **The cross-industry survey was designed with the aim of understanding organisations' attitudes, strategies and progress in digital, encompassing data, innovation, technology, capability & culture.**
- **It is anticipated that the survey results and analysis will support the creation of a number of collaborative initiatives to drive improvement in digital transformation.**

THE SURVEY FOCUSSED ON FOUR AREAS OF DIGITAL

Data is the foundation of digital. Governed, accessible and connected datasets provide the basis for digital to add value.

Without digital capability and culture through the organisation, the impact that digital can make is limited.

An innovation process ensures that a pipeline of "ideas" is driving transformation, with the support mechanism to invest, pilot and scale.
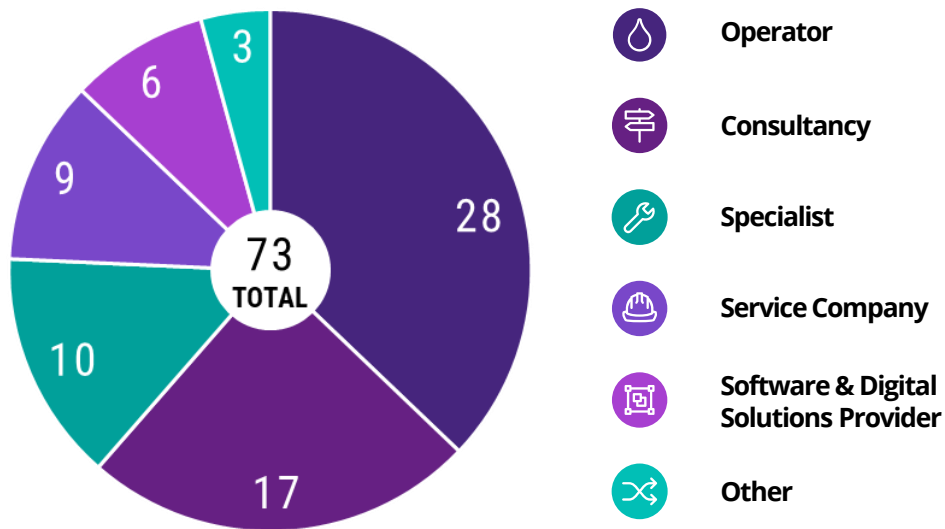
Technology transforms data into tangible value, but must be focussed on solving the right problems, and properly deployed.
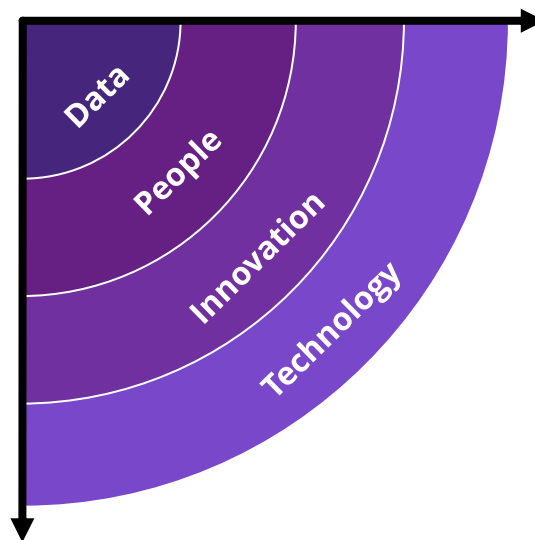
SURVEY APPROACH & RESPONDENTS

- **The survey approach was to target a single nominated response from each organisation. In all cases, this nominee either had significant digital responsibilities and/or an understanding of the organisation's digital initiatives**
- **73 organisations responded to the survey, encompassing the vast majority of the industry's major organisations.**
- **Following the survey completion, interviews took place with ~15 organisations to provide further commentary.**

ORGANISATIONAL RESPONSES ARE SPLIT INTO SIX GROUPS

- Operator
- Consultancy
- Specialist
- Service Company
- Software & Digital Solutions Provider
- Other

- Responses from operators spanned vertically integrated supermajors and E&P companies, including those who are private equity backed.

- Consultancies and specialists covered a wide range of capabilities, including logistics, subsea, asset management, instrumentation & controls, data & information management, decommissioning, and other bespoke equipment providers.

- Following survey completion, interviews were held with around 15 organisations to provide additional commentary and further insight on individual organisations' approaches.

CHANGE IS BEING DRIVEN FROM THE TOP

- **Organisations are a third more likely to be influenced by their customers than by their supply chain. The extent of competitor influence is in between.**
- **Operators have a responsibility to step-up transformation efforts and listen to the supply chain, as their influence is significant.**

ORGANISATIONS ARE INFLUENCED FROM ABOVE AND AROUND

% of responses that answered 'agree' or 'strongly agree' with regards to whether competitors, clients/customers or the supply chain have an influence on their digital ambition.

	Clients / Customers	Peers / Competitors	Supply Chain
Operators	29%	64%	43%
Service Companies	100%	78%	33%
Specialists	100%	70%	70%
Consultancies	100%	59%	35%
Software & Digital Solutions Providers	100%	33%	50%
Average	70%	67%	45%

- Those at the top of the supply chain have a significant influence on digital, and therefore a responsibility to drive digital in the right way.

- Competition between organisations is also a significant driver - even among operators.

- What are the drivers of change in OT / cyber risk management?
  - Contractual?
  - Regulatory?
 - Audit?

- Are there opportunities here?

DATA IS THE FOUNDATION

- **Value drivers relating to data appeared consistent in the top three ranked by organisations, highlighting that it is a priority for most.**
- **Attitudes towards data are reasonably consistent, however, senior leadership are more likely to have a positive experiences of the state of data within their organisation.**

TOP DIGITAL VALUE DRIVERS RELATE TO DATA

Respondents were asked to rank eight digital value drivers in order of importance. Score out of 100 was assigned based on average rank.
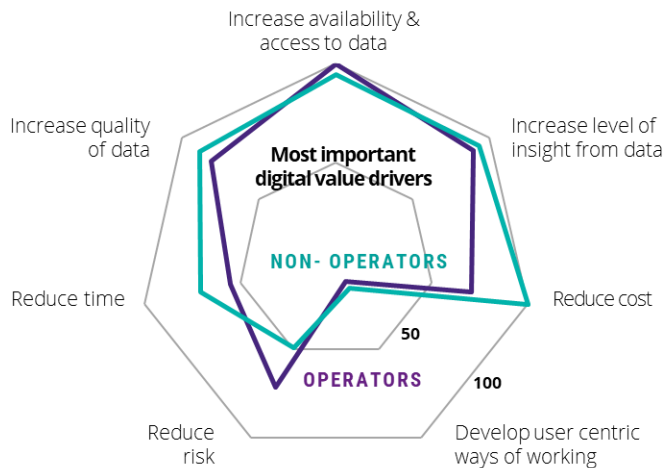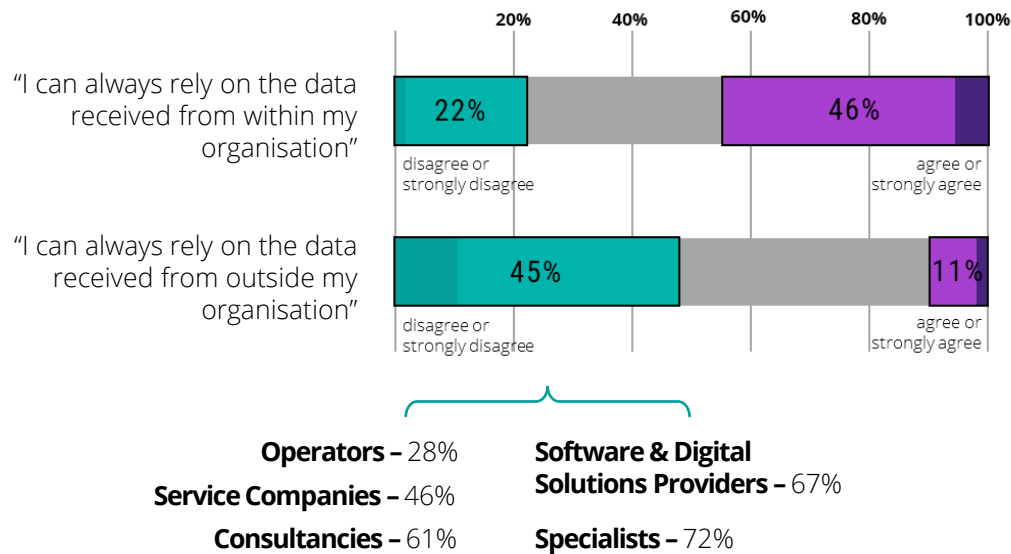

- For operators, the top three value drivers all relate to data, whereas for non-operators, data is displaced at the top only by cost reduction.

- The results above correlate strongly with the technologies which are being widely used – these are focused on providing the foundations (e.g. through visualisation and connectivity).

- How do you increase data availability, access, and insight from an organisation's data assets, while maintaining confidentiality and integrity as well?

TRUST IN EXTERNAL DATA IS LOW

- **Confidence in data exchanged between organisations is low compared to data received from within. Organisations are four times more likely to trust data received from within.**
- **Operators are less affected by data exchange issues, as they are able to influence formats and methods through which data is provided to them.**

CONFIDENCE IN DATA FROM OTHER ORGANISATIONS IS LOW

	20%	40%	60%	80%	100%

"I can always rely on the data received from within my organisation"

22%   46%

disagree or strongly disagree | agree or strongly agree

"I can always rely on the data received from outside my organisation"

45%   11%

disagree or strongly disagree | agree or strongly agree

Operators – 28%
Service Companies – 46%
Consultancies – 61%

Software & Digital Solutions Providers – 67%
Specialists – 72%

- Almost half of organisations are unable to rely on data received from outside

- Challenges with data exchange included:

  1. Having to manipulate data in order to upload it to a certain system or tool.

  2. Conversion of data between different formats to suit system requirements.

- Study focus on engineering / subsurface / financial information

- Role of trust in automation?

MOST TECHNOLOGY INVESTMENT IS OPERATIONS

- **Operational processes have been prioritised for investment., however, low oil prices now make non-operational ('back office') process improvement financially important.**
- **Information management and Applications & systems are receiving high levels of investment, with data expected to deliver more value over applications & systems.**

OPERATIONAL PROCESSES HAVE HAD MOST INVESTMENT

Operational ●

Process areas ranked on digital investment received

Non- Operational ●

Top 10

1. Production Monitoring & Optimisation ●
2. Maintenance and Ops Readiness ●
3. Asset Information Management ●
4. Site and Asset Monitoring ●
5. Engineering Design ●
6. Processing and Imaging ●
7. Applications & Systems Management ●
8. Financial Accounting ●
9. Reporting & KPIs ●
10. 3D Modelling ●

Bottom 10

1. Schedule Management ●
2. Quality Control ●
3. Legal ●
4. Product Quality Control ●
5. Risk Management ●
6. Benefits Management & Value Tracking ●
7. Product Servicing and Repair ●
8. Recruitment and Resourcing Strategy ●
9. Budgeting & Cost Management ●
10. Construction and Installation ●

- The vast majority of the top 10 processes relate to operations. This was supported by our follow up interviews, with few organisations talking about digital initiatives related to non-operational processes.

- All digital investments require solid data and security foundations

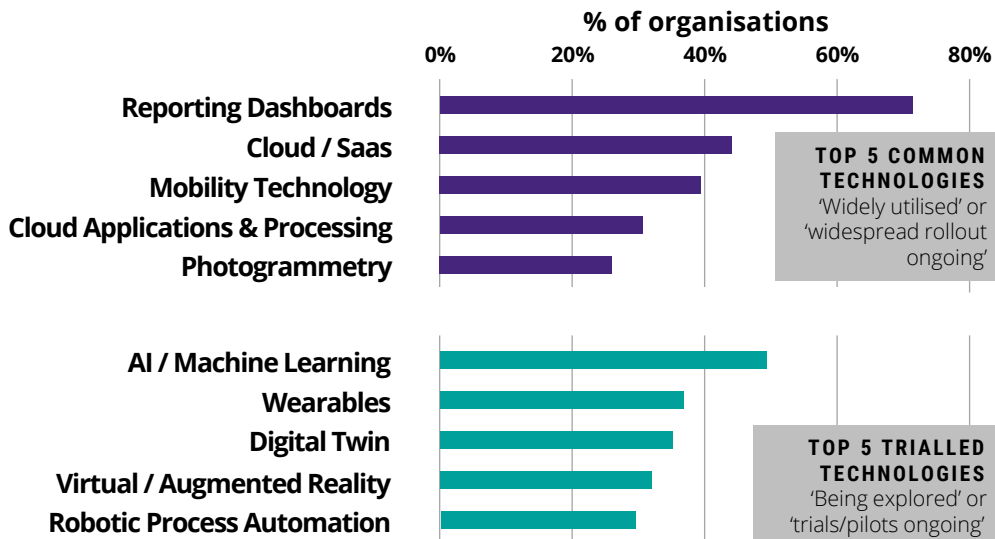- System & Information Security in the middle of the pack

VISUALISATION DOMINATES TECHNOLOGY

- **Technology implementations have mostly focussed on the foundations of visualisation and connectivity. All technologies other than visualisation have under 50% adoption**
- **Organisations towards the top-end of the spectrum are running five or more pilots, with a similar number undergoing wider rollout or being widely used.**

THE MOST POPULAR TECHNOLOGIES HAVE UNDER 50% ADOPTION

% of organisations

TOP 5 COMMON TECHNOLOGIES
'Widely utilised' or 'widespread rollout ongoing'

TOP 5 TRIALLED TECHNOLOGIES
'Being explored' or 'trials/pilots ongoing'

- Reporting dashboards are the most widely adopted technology, with 'widely utilised' or 'undergoing widespread rollout' reported across 71% of responses.

- However, for the remaining top four technologies, wide adoption was still under 50%.

- Technologies were grouped into 6 types (e.g. connectivity, productivity, data processing).

- Data processing was the least invested in. Organisations currently investing in data foundations may struggle with the next step.

CAPABILITY IS BEING LEFT BEHIND

- **Capability development has focussed on understanding specific tools and systems, rather than building a digital culture and increasing digital fluency.**
- **Only one-third of organisations have a digital capability or skills programme in place, and even fewer have one-third of people attending digital training in the last year.**

ORGANISATIONS ARE 'DOING DIGITAL' NOT 'DEVELOPING DIGITAL'

% of organisations that:

Currently have a priority Digital Transformation programme in place	62%
Have digital roles in place across the organisation, not just in I.T	62%
Have leadership who visibly drive and prioritise delivery of digital	60%
Have a digital strategy in place within their business	59%
Give their people the training/skills they need to use digital tools effectively	49%
Provide support and direction on what digital training people should do	41%
Currently have a capability specific Digital programme in place	33%
Have had over 1/3 of people attend digital training in the last year	21%

'Doing Digital'

'Developing Digital'

- Developing digital capability has not been a focus for most organisation.

- Most capability initiatives have been focussed on understanding specific tools and systems, not building digital culture.

- Organisations pursuing many strategies to develop / obtain the skills they need, including significant changes to staffing models / approaches

- This 'digital crew change' emphasises the need for personal ownership of training and development

MOST SIGNIFICANT BARRIERS ARE ORGANISATIONAL

- **For all organisations, the top four barriers are organisational not technical – related to processes, structures, investment, strategy and capability.**
- **Non operators are much more significantly impacted by a lack of investment and lack of leadership buy in than operators.**

CAPABILITY AND ORGANISATION ARE SIGNIFICANT BARRIERS

% of organisations who ranked each digital barrier within their top 3 'most significant'
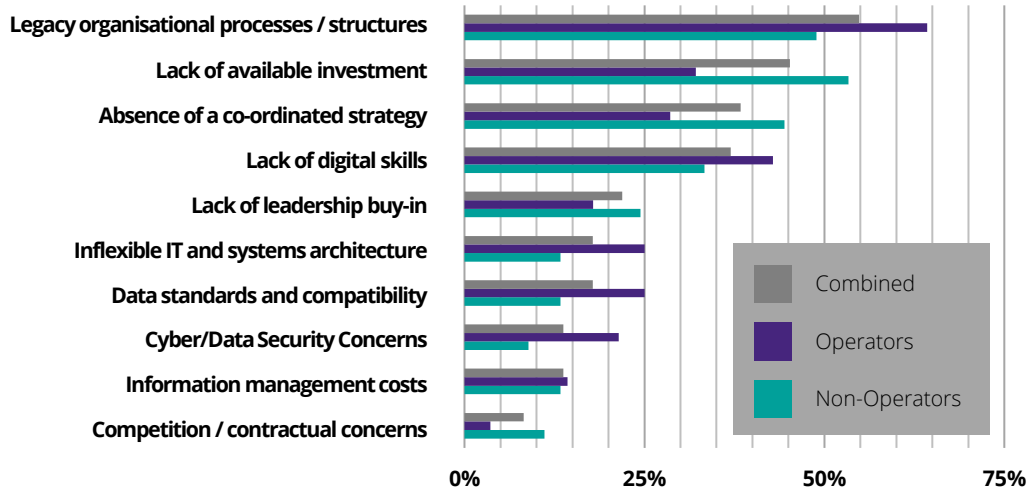
- Lack of available investment, absence of a co-ordinated strategy and lack of leadership buy-in go hand in hand. This reinforces the importance of leadership and strategy defining organisational culture, which are needed to create the conditions for digitalisation and to empower bottom up innovation.

- Lack of investment is much bigger barrier for non-operators, who are likely to be even more challenged by margin and a need to be competitive.

- Cyber / data security / IT barriers less of a challenge

CONCLUSIONS

- **Although the value of digital is widely recognised, and the digital journey is well underway for most, 73% of practitioners are yet to see a positive impact.**
- **To make progress with a largely sceptical workforce, organisations must ensure they focus on the organisational (innovation & culture) aspects of digital, as well as technical aspects (data & technology).**

IMPACT OF DIGITAL IS YET TO BE FELT BY MANY

98% of respondents believe "digital has the ability to make a positive impact"
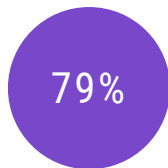
79% of organisations place a "significant emphasis on digital ways of working"

"Digital initiatives have often resulted in increased work, and delivered little benefit"

Responses that answered 'Strongly Agree', 'Agree' or 'Neither Agree nor Disagree'

Leadership	Manager	Practitioner
41%	31%	73%
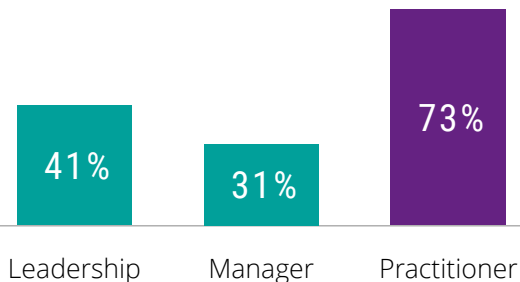
- 60% of organisations indicated they had "implemented many digital initiatives" or were "a truly digital organisation".

- However, 'implementing many digital initiatives' does not necessarily equate to maturity in digital transformation – without the accompanying culture transformation, these organisations will become 'digitised' rather than 'digitalised'.

- When contrasting the figures to the left (particularly at practitioner level) with the 98% of organisations that believe digital has the ability to make a positive impact, it's clear that there is still a gulf between the perception and reality of digital.