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National recovery, digitally driven

**Headline findings of the
Infrastructure Client Group
Digital Benchmarking
Report 2020**

Powered by the Smart
Infrastructure Index

With COVID-19 subjecting society and the economy to unprecedented stress, improving the performance of social and economic infrastructure, and the value it delivers, has never been so important.

The latest Digital Benchmarking Report shows that infrastructure clients are accelerating their digital transformation – improving their ability to see challenges and opportunities, act effectively and achieve positive outcomes. The report provides hope that their role in recovery will be digitally driven.

The Infrastructure Client Group (ICG) Digital Benchmarking Report 2020 provides a snapshot of digital maturity from members of the ICG's Digital Transformation Task Group (DTTG). The report is informed by data from the Smart Infrastructure Index.

DTTG consists of 19 leading UK asset owners and operators from the transport, energy, defence and water sectors. They collectively invest over £20bn per year and are responsible for more than 40% of the UK government's National Infrastructure and Construction Pipeline.

Three times more responses
In 2020 there were more than **450 responses** (three times as many as 2019) **representing 14 DTTG member organisations** (up from 11).

Respondents ranged from board members to graduates and apprentices, representing diverse functions across the industry.

The increased number and diversity of responses enabled us to rigorously cross-check perceptions of digital maturity within each organisation. As a result, we have been able to dive even deeper into the digital maturity of the UK infrastructure industry as it adapted to new ways of working in an unprecedented year.

Growing maturity
Overall, digital maturity increased by **20%** for the 11 organisations that also completed the survey in 2019, with particular improvements in digital transformation, asset management, customer insight, and the standardisation and automation of asset delivery.

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20%

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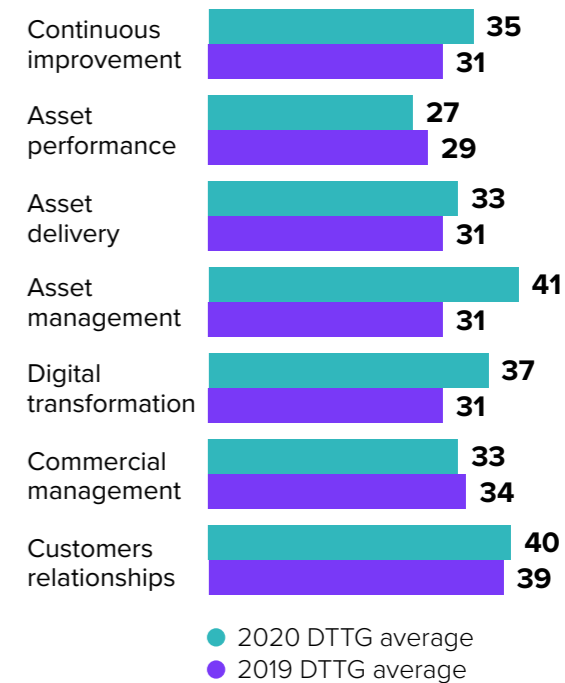
Since the first digital benchmarking report in 2018 asset performance has been the lowest-scoring category, held back by inconsistent data, which prevents higher value sense-making and undermines confidence in decisions. In 2020 the score for asset performance fell. Using digital to improve asset performance is therefore a high priority, as it is estimated that construction adds only 0.5% to the national infrastructure inventory each year – 99.5% of social and economic infrastructure already exists.

However, higher scores for information management and the value of information suggest that DTTG members recognise the value of their information assets and are taking concerted action to manage them better.

Priority challenges and opportunities
The report highlighted six issues requiring urgent attention, outlined further on the next page:

• Organisational alignment
• Effective operating models
• Unlocking investment
• The human challenge – digital capability
• Digital twins
• COVID-19's impact on digital transformation

Category	2020 DTTG average	2019 DTTG average
Continuous improvement	35	31
Asset performance	27	29
Asset delivery	33	31
Asset management	41	31
Digital transformation	37	31
Commercial management	33	34
Customers relationships	40	39

● 2020 DTTG average
● 2019 DTTG average

Six key themes

Analysis of responses to the 2020 maturity assessment highlights challenges and opportunities in these areas:

Organisational alignment
Digital transformation is being held back by misaligned perceptions of and support for digital. Effort is needed to make key stakeholders aware of and engaged with digital initiatives within organisations and across the industry.

Effective operating models
Change is too often perceived as a threat. Organisations need to recognise that digital transformation requires tolerance of change – even celebration of change – calling for adjustments to their operating models.

Unlocking investment
Organisations struggle to make strong business cases for investment in digital transformation. They can address this by quantifying the benefits of previous initiatives and defining value in social and environmental as well as commercial terms.

The human challenge
The majority of staff are not developing digital skills and work practices as fast as technology is evolving. This is creating capability gaps that are becoming difficult and expensive to close. Organisational culture and strategy need to address the challenge, which is inhibiting digital transformation and the benefits it offers.

Digital twins
Organisations have not yet realised significant value from digital twins. Focus is required on making twins purposeful, trustworthy and functional. Organisations should tap industry resources and support, collaborate to tackle shared challenges, and realise synergies from data shared between digital twins.

COVID-19's impact on digital transformation
The pandemic has catalysed change for many organisations. It should be used as a lesson to embrace proactive, rather than reactive, change.

Only
36%
of respondents were confident that most decisions are informed by evidence and not instinct

Scores out of 100

How the respondents judged their organisations

The average digital maturity score for 2020 was slightly better than in 2019: 35 compared to 32.

Customer relationships: 40/100
Improvements in customer insight are encouraging, with half of respondents saying their understanding of customers' priorities is data-driven. 2019 score: 39/100.

Commercial management: 33/100
Only a quarter of respondents said their organisation tried to identify new sources of revenue from digital assets and services, down from a third in 2019. This may reflect organisations tightening their focus to core operations during the COVID-19 crisis. 2019 score: 34/100.

Digital transformation: 37/100
Three quarters of respondents said their organisation relies on legacy IT systems barely adequate to meet evolving business needs. This realisation may have been prompted by the challenges of remote working during the pandemic. 2019 score: 31/100.

Asset management: 41/100
The past year has seen significant progress – four fifths of respondents said their organisations have well-defined responsibilities for asset management with clear skill and competency descriptions for asset management roles. 2019 score: 31/100.

Asset delivery: 33/100
45% of respondents said their organisation has an extensive catalogue of standard products that their suppliers can use, reflecting a move by clients to embrace modern methods of construction. 2019 score: 31/100.

Asset performance: 27/100
Data availability, sense-making and decision-making were all judged to have become worse in 2020. Information management was judged to be less bad – although far from good. 77% of respondents said their organisation manages information badly and fails to realise value from it, compared to 95% of respondents in 2019. Improving the quality and management of asset data will take several years; the shift in perception may signal the start of that journey. 2019 score: 29/100.

Continuous improvement: 35/100
There are signs that innovation is 'going digital'. 83% of respondents said their organisation monitors emerging digital technologies; 65% said they are developing partnerships with specialist digital/tech organisations. 2019 score: 31/100.

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of respondents said that poorly organised information prevents their organisation from realising its full value
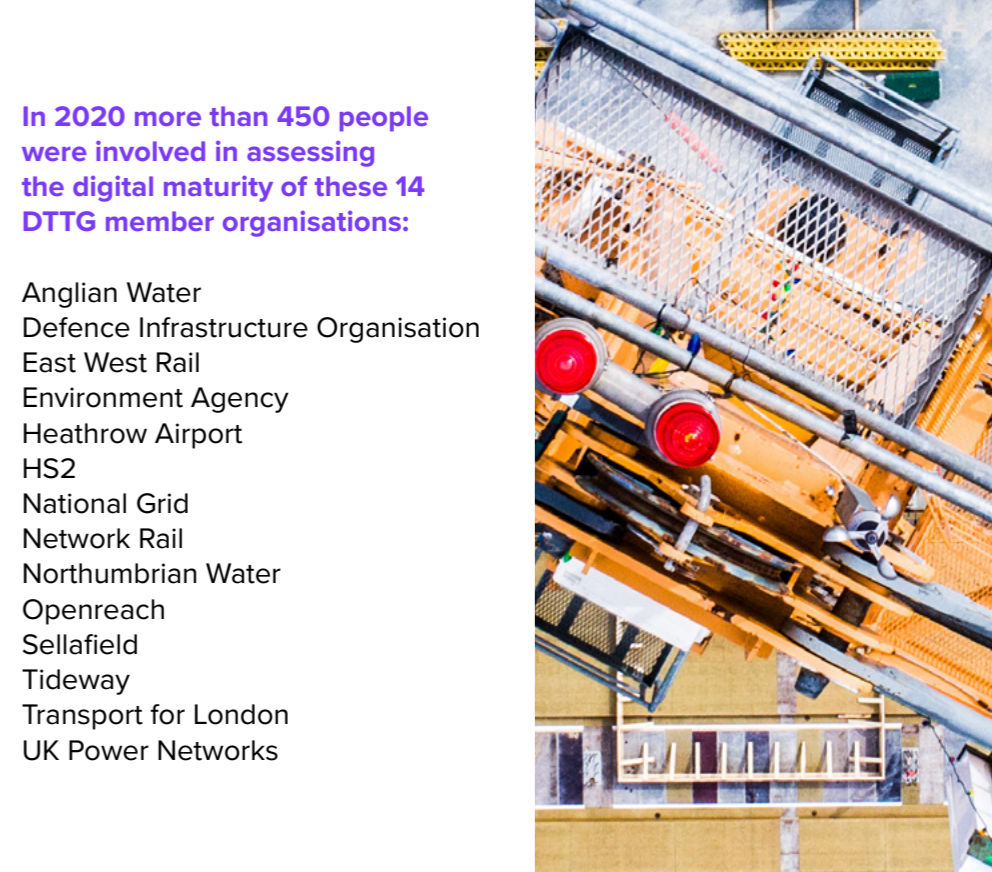
Smart Infrastructure Index

The Smart Infrastructure Index is an online self-assessment tool that measures the digital maturity of asset owners and their wider supply chains. It was developed by Mott MacDonald in partnership with the Infrastructure Client Group, specifically for infrastructure owners, operators and supply chain organisations.

The index provides a holistic view of how well organisations are using data and digital solutions across seven key areas: customer relationships, commercial management, digital transformation, asset management, asset delivery, asset performance and continuous improvement.


Radar chart axes:
Customer relationships · Commercial management · Digital transformation · Asset management · Asset delivery · Asset performance · Continuous improvement

Legend:
- Best practice score
- 2019 DTTG average
- 2020 DTTG average
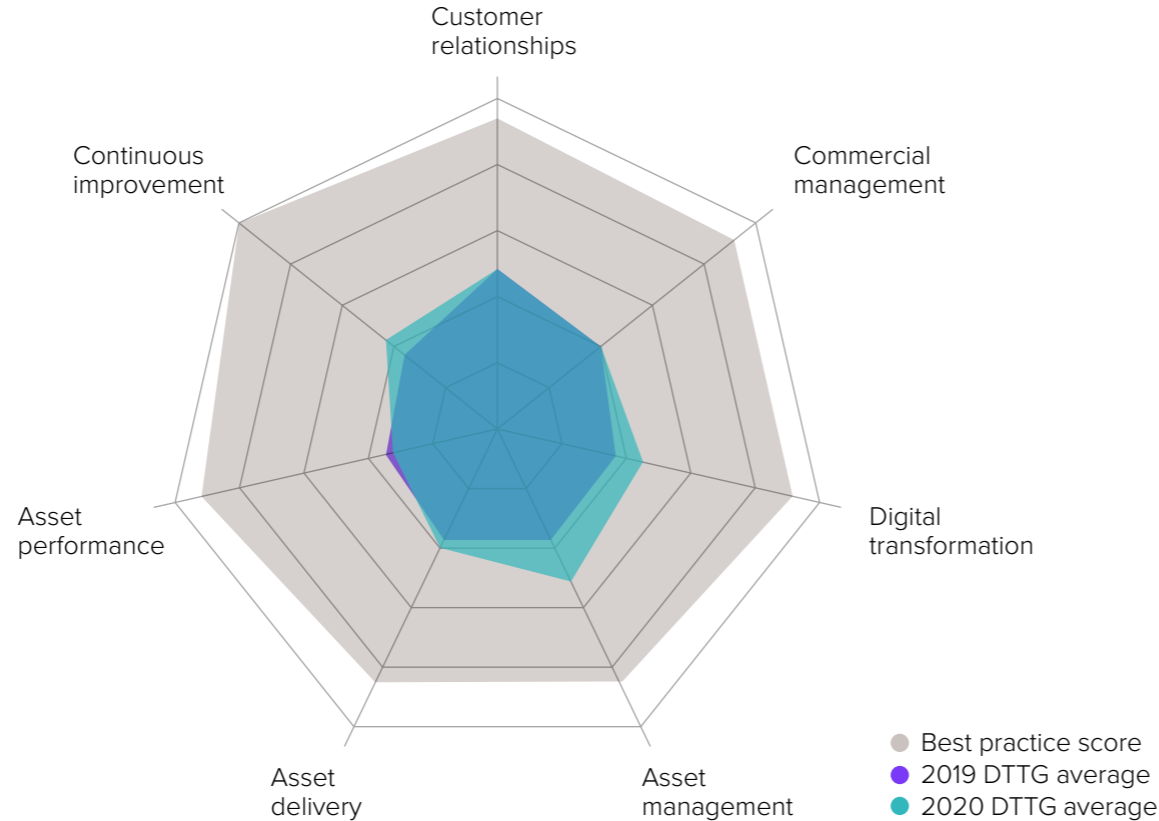
In 2020 more than 450 people were involved in assessing the digital maturity of these 14 DTTG member organisations:

Anglian Water
Defence Infrastructure Organisation
East West Rail
Environment Agency
Heathrow Airport
HS2
National Grid
Network Rail
Northumbrian Water
Openreach
Sellafield
Tideway
Transport for London
UK Power Networks

Who were the respondents?

Everyone completing the Smart Infrastructure Index is assigned one of four archetypes, based on their responses. These reflect cultures and preferred approaches to digital transformation. The archetypes are themselves influenced by analysis of the respondents' data, providing useful insight into the 'personalities' working across the infrastructure industry.

The Explorer
35%

The Optimist
26%

The Challenger
24%

The Traditionalist
15%
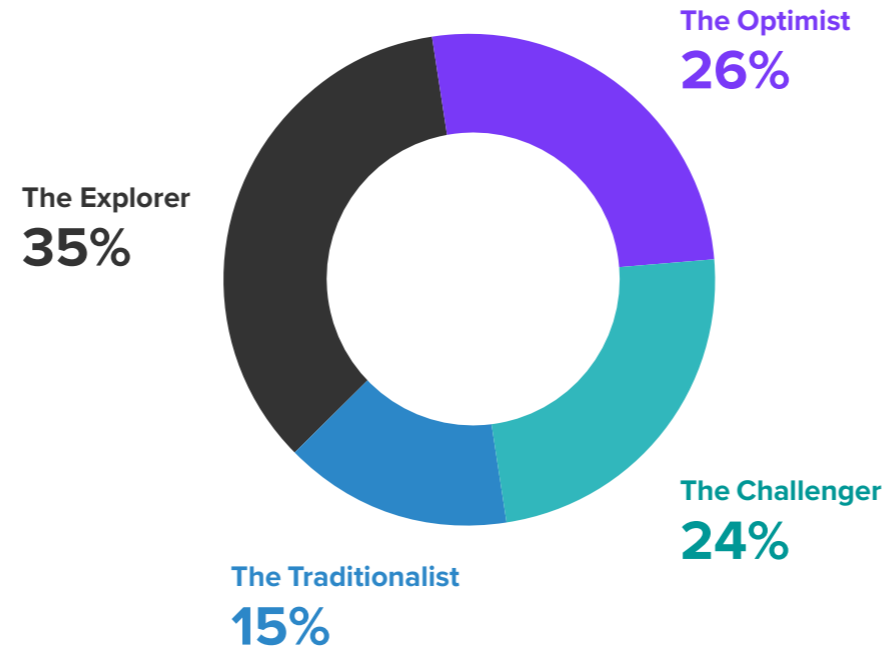
The Explorer – 35%
Explorers favour a bottom-up approach, encouraging pilots and 'learning by doing' – four out of five felt it is acceptable to invest in an innovation project that fails.

The Optimist – 26%
Optimists favour strong leadership and clear strategy. Among DTTG member organisations they are making good progress in laying the foundations for digital transformation in difficult areas like developing capability and improving information management.

The Challenger – 24%
Challengers target step-change improvements through flagship projects or programmes, focusing on digitally augmented delivery as the foundation for data-driven strategies for operation and asset management.

The Traditionalist – 15%
Traditionalists are starting their digital journey, typically with an overarching strategy to achieve transformation. Their challenge is to convince senior leaders that transformation is fundamental to business success; only a third said their strategy is sponsored by an executive board member.

Insight in 15 minutes

The Smart Infrastructure Index takes just 15 minutes to complete. It provides respondents with a report that benchmarks the digital maturity of their organisation – as they have reported it – and provides recommendations for improvement. It is designed to help organisations:

Get a clear picture of current performance
The index shines a light on your organisation's current level of digital maturity. It reveals blind spots requiring attention in order to progress towards digital transformation. And it shows variations in perception, culture and readiness across your organisation.

Identify what to prioritise
The index's analytics and recommendations can be used to focus effort for the greatest benefit and added value, based on your organisation's current level of digital maturity.

Measure against the best
The index is used by organisations internationally that jointly own and operate more than £385bn worth of infrastructure assets, across all sectors of the built environment. You can see how your organisation scores against your sector average, and against the best in the industry.

Priority areas

DTTG members are using the data and insights from the Smart Infrastructure Index to focus effort and investment in 2021. Individually and collectively, they are committed to making progress in five areas:

Digital twins: helping the infrastructure industry realise value from individual digital twins, federated twins, and ultimately a national digital twin.

Digital operating models: upgrading organisations' operating models to assist the changes required to achieve digital transformation.

Resilience: improving organisations' ability to mitigate risks associated with digital transformation.

Common data environments: promoting collaborative working and data sharing.

Communication: enhancing organisations' ability to communicate their activities and achievements to stakeholders.

Test your digital maturity using the **Smart Infrastructure Index** →

See.
Act.
Impact.

Where can smart
infrastructure take you?

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