WILL ACCESS TO BIG DATA CHANGE THE WAY WE DELIVER MAJOR PROJECTS?

Highlights from the Major Projects Association event held on 13th February 2019

'Digital abundance inevitably leads to a digital revolution.'
Mark Enzer, Chief Technical Officer, Mott MacDonald

Major projects are awash with data, providing us with opportunities and challenges in equal measure: the opportunity to increase value at every stage in a major project's life cycle and the challenge of understanding volumes of data, which may be inconsistent or siloed within just one part of the organisation.

Whilst the technology and tools, e.g. internet of things, blockchain, digital twins and big data, are changing at a bewildering rate, what will not change is the 'information value chain' (information → insight → decision → outcomes) which, if properly managed, is the source of great value, potentially enabling projects to reduce costs.

This seminar sought to describe the strategy for information design and governance; and to explore how clients and contractors can re-engineer their approach in order to exploit the new data tools and the benefits they offer.

COLLECTING DATA IS NOT NEW

In order to realise the benefit of the access to greater information and better data management software, organisations need to recognise the different sources of advantage these can bring, for example through digital delivery as well as the creation of smart infrastructure. They also need to connect their different sources of data together, which requires:

- Data standards, consistency and fitness for purpose
- An understanding of complex data systems
- A strategy to drive the direction of data
- New ways of working to enable data sharing along the supply chain

GIVING DATA PURPOSE

'The right commercial frameworks and data frameworks enable us to change the way we deliver major capital projects, based on outcomes.'
Patrick Bossert, Associate Partner, EY

Without a 'purposeful data strategy' corporate data is a mess of unconnected tools and data.

Each year, UK plc spends £90bn creating new infra-structure and £120bn maintaining and operating it.

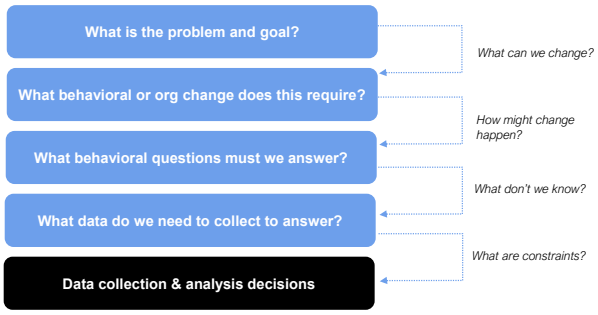
With the right commercial and data strategy, this investment can represent a £600bn contribution towards GDP. This involves matching input data to service data and identifying the correlation between the two: what is the demand for the asset? How is it used? How is the asset performing? How can we improve future designs to increase the demand, usage and performance of the next infrastructure asset?

Capturing and exploiting that data requires a common data environment for the different types of data drawn from all sources. In simple terms that means measuring and reporting the same things, in the same way.

SELECTING, COLLECTING AND ANALYSING

How you select, collect and analyse your data starts with the objectives behind your data strategy.

'Big data layered with analytics, with qualitative research, with strategy, with trials can help you get closer to the solution that you want.'
Zung Nguyen-Vu, Strategy Lead, Arup Digital Studio, Arup



(Zung Nguyen-Vu, Strategy Lead, Arup Digital Studio, Arup)

By using a mix of quantitative data and qualitative data, Arup were able to create a rich picture about bus usage. They used big data – such as mobile data, sensor data, CCTV, tracking data, ticketing data – as well as thick data – ethnographic observation, interviews, surveys, polls, focus groups and trials – to answer the following:

- Who is travelling and when?
- What modes of transport do they normally use?
- Where are they travelling to and from?
- Why are they travelling?
- Why are they using the bus?

Simply using *available* data to plan is a dangerous practice because you are unlikely to capture the wider context or the motivation for a behaviour.

RISK AND SECURITY

The concept of purposeful data also lies at the heart of effective compliance and litigation risk management.

Given the pace of technological change, transparency, trust and social responsibility are all a potential source of resilience for your organisation. This holds as true for the general public as it is does for regulators. Being clear on both your commercial and your data strategy has several benefits:

- A responsible compliance culture where everyone understands the fundamental requirements, so they are much less likely to expose you to conduct risk.
- You can design the processes you need in order to agree the commercial relationship and governance for sharing data and equitably allocating risk.

A purposeful data strategy also avoids an overly burdensome or inequitable approach to data sharing, which is likely to constrain collaboration and opportunities for innovation. This is particularly true of working with start-ups – potentially the source of great innovation – but without the formal governance bureaucracy that is often expected by large clients.

WORKING SUCCESSFULLY WITH OTHERS

- Be open.
- Recognise the value of data and treat it as an asset.
- Formalise a structure for collaboration.
- Alert suppliers to risks, e.g. data sharing that might be deemed anti-competitive.
- Do not assume your supply chain will share data and do not pressure them; negotiate responsibly.
- Establish protocols and no-go areas.
- Make sure the employees involved are trained.
- Use process and information design, appropriate controls and incentivise desired behaviours as your main risk mitigation tools.

*'The three 'Cs' are the legal and commercial aspects of an effective data strategy: **C**ompliance, **C**ontracts and **C**ollaboration.'*
Anne-Marie Friel, Partner, Pinsent Masons LLP

BIG DATA IS PART OF SOMETHING BIGGER

'As data generates the behaviour of infrastructure, it can be said that data is in a sense also a hard infrastructure and that it needs to be maintained and managed through a formal approach, analogous to the way that physical infrastructure is managed.' National Infrastructure Commission report 2017: *Data for the Public Good*

Big data in the context of infrastructure can be expressed in many ways: as part of a system of systems; as smart infrastructure; as a means of transforming the value of the assets through a whole-life perspective; as a way of modelling the assets, processes and systems in the natural and built environment.

It needs to be seen in relation to the way we make decisions about infrastructure; the way we work together and how we contract and organise that work. As such, it requires far more than design or technology. It requires a new set of behaviours, intellectual and social capabilities and some fundamental changes to the culture of projects.

POINTS FOR FURTHER DISCUSSION

- Do we need a new type of professional expert to make the information value chain work?
- What is our plan for developing the requisite capability?

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With grateful thanks to Mott MacDonald for their help in shaping this event

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