

Major Projects Metamorphosis Highlights

Highlights from the Major
Projects Association event
held on 20th October 2021

Introduction

Advances in Project Data Analytics (PDA) and digital innovation have been transformative in sectors such as manufacturing and retail but have not yet had a similar impact on major projects. This seminar tried to cut through the noise around digital transformation and identify what can be done right now to unlock this enormous opportunity.

'Better use of data in infrastructure project delivery could save £23bn a year. At root that's about tackling poor decision-making. We now have more data than ever on our projects to help us make better decisions – but Project Data Analytics isn't widely understood or adopted. We need to understand why and what can be done about it.'

Prof Naomi Brookes, Professor of Complex Project Management, WMG: University of Warwick

Implementing PDA at the project and organisation level

Trying to make progress on data analytics at a business or major project level is itself a significant transformation programme, which event Chair Martin Pocock observed can too easily sink into inertia.

Drawing on his experience on one of the HS2 main civil engineering contracts, Luis Tatis of Mott MacDonald stressed the importance of a staged delivery solution. Leadership buy-in and regular improvements communicated effectively are key. At HS2 the first stage was to improve governance and trust in the data. Ownership of data quality was established, and the project moved from having multiple silos of unlinked data to a single hub housing all the project reports.

Once better governance was in place, the team moved on to improving the quality of data, introducing quality assurance processes and standard naming conventions across the project. With those two steps in place, Luis and his colleagues could start to do more with the data and provide more value to the project. He echoed the importance of focusing this effort on improving the experience of front-line users. A lot of attention had been paid to gamifying delivery of information via easy-to-use dashboards focusing on the key metrics of cost, schedule, risk and commercial data.

Trust in the data and the simplicity of the user interface were also priorities for Milla Mazilu of Network Rail. The organisation knew it had vast quantities of potentially useful data but had to

deal with the complexity created by multiple systems and reports, numerous stakeholders and human error in data collation. Milla and her team's objective was to create a single set of centralised reports accessible by all stakeholders, be they sponsors, clients, delivery teams or auditors. This was then complemented by curated data sets that allowed users to generate reports for their own purposes. This approach reflected an ongoing effort to strike a pragmatic balance between control and freedom.

The team started with an incremental approach, weaning people away from Excel spreadsheets and towards Power BI dashboards to which more analysis and visualisation was added over time. However a 'big bang' approach was then adopted, moving from this small platform to rolling out a centralised reporting system to the whole of the Wales and West region of Network Rail. In the first three months this meant putting a lot of time into a sustained training and support programme.

A key learning is to ensure that reporting outputs are firmly linked to decision-making processes. That demands continuous dialogue with users and a continuous development mindset from the data analytics team. The clearest sign of the success of this approach is that meetings are now focused on discussing issues highlighted by data and not arguments about its reliability.

'This approach has enabled us to get more value out of the data we are already collating and capturing.'

Milla Mazilu, Principal Programme Controls Manager, Wales & Western Region, Network Rail

Transforming government services

The Infrastructure and Projects Authority (IPA) is the UK Government's centre of excellence for infrastructure and major projects. Its reach is very broad, so it has been important to focus digital transformation efforts on those services where a change project can make a real difference.

Daniel Byrne of IPA explained that this begins with a tight definition of transformation as: 'Fundamentally changing how people interact and the technology they use to deliver significant improvements in efficiency and effectiveness.' Two examples meeting this criterion have been a project to streamline the conveyancing process for property sales by providing instant access to documentation; and a programme to roll out real-time GIS information to UK military across the globe.

The complexity of these types of change means that they cannot be delivered only from the top down, so IPA use a co-creation process. Solutions are designed in partnership with the users, whose buy-in will be essential to realising the benefits of investment. This needs rigour in three areas:

- Defining stakeholders
- Making the project vision relevant to each stakeholder group
- Extensive piloting

Daniel also stressed the importance of thinking about the totality of data available. Much of the discussion on transformation is around quantitative data and the practical challenges around quality, governance and security. The IPA also has very large volumes of qualitative data, for example business cases and lessons learned exercises. If managed properly and combined with quantitative information this can generate powerful insights into the environmental, cultural or behavioural factors driving delivery outcomes.

'You do have to get into the detail. It is imperative to understand the question you want to ask of the data, what outcome you want for different users, what processes the data is driving. You also need permission and time to explore, test and iterate. That's how you get confidence.'

Daniel Byrne, Head of Transformation, Programme Delivery Team, Infrastructure and Projects Authority

Unlocking the power of collaboration

Focusing on the issue of the quality and accessibility of data, Grant Findlay of Sir Robert McAlpine introduced the work of the **Construction Data Trust** (CDT). A data trust is a legal structure that provides independent stewardship of data for an agreed purpose. In the case of the CDT the goal is to enable morwe collaboration around past project data, with a view to identifying insights that would not otherwise have been possible and which can transform project outcomes.

CDT also hopes to overcome a key barrier to better use of data by helping to create common metrics at the sector level. Early work in this area is focusing on productivity, pre-manufactured value, waste, 'right-first-time' and time spent on productive work. Wider work on productivity is driving out insight from pilot sites and generating guidance on collaborative contracting.

Like the IPA, CDT is taking a user-centric approach, starting from use-cases such as 'Understand how Covid-19 is affecting productivity' and aligning that to a user story, for example a project manager's need to understand why their schedule is inaccurate. This provides a basis for collecting and working with data to create insight for operational decision makers. The quality of much of this data is a big issue but should not be an excuse to do nothing. Even with 'bad' data it is possible to get insights – and begin working to improve it.

'We won't make fast enough progress with big sector-wide issues like productivity and Net Zero unless we collaborate around our data. It's when, not if.'

Grant Findlay, Director of Strategy and Innovation, Sir Robert McAlpine

Classifying the barriers and enablers

Professor Naomi Brookes and Luis Lattuf Flores of Warwick University rounded off the session by reflecting that all the preceding presentations reflected the findings of their recently completed research on barriers and enablers to project data analysis. Based on in-depth interviews and analysis with over 20 major project organisations, the study grouped barriers and enablers into the following top five areas.

- Benign data environment – **Data Quality**
- Motivations to adopt the PDA unknown – **Exemplar Cases**
- Unprecedented change management – **Scale of the PDA Task**
- PDA friendly culture – **Fear vs Confidence**
- Universal data literacy – **Awareness Not Analysts**

The analysis crystallised the most important barriers and enablers. Interestingly this did not include any of the issues grouped under PDA systems and structures, suggesting they were difficult but well understood.

The two main priorities were awareness not analysts, and data quality. The former reflects a need for a universal basic understanding of what is data is and what it is capable of doing. The latter demands a pragmatic approach. We are not going to reach 100% perfection but what do we need to do to reach 80% and what could we do with that data?

Points for further discussion

- What comes first, the chicken or the egg? Should we focus on using project data analytics to solve pre-identified problems or use the data to identify what the real issues are for projects and programmes?
- If PDA is about improving decision-making and outcomes, how do we measure if we have succeeded?

With grateful thanks to **The Oakland Group** for their help with this event.

Chair

Dr Martin Pocock, Development Lead, The Oakland Group

Contributors

Professor Naomi Brookes, Professor of Complex Project Management, WMC: University of Warwick
Daniel Byrne, Head of Transformation, Programme Delivery Team, Infrastructure and Projects Authority
Grant Findlay, Director of Strategy and Innovation, Sir Robert McAlpine
Milla Mazilu, Principal Programme Controls Manager, Wales & Western Region, Network Rail Ltd
Alan Mosca, Co-Founder & CTO, nPlan
Andy Murray, Executive Director, Major Projects Association
Steve Naybour, Head of Programme Controls & Programme Management, Network Rail Ltd
Luis Tatis, Digital Consultant, Mott MacDonald

Participating Organisations

Alliance Manchester Business School
Arcadis LLP
BAE Systems
Costain Ltd
Department for Environment, Food and Rural Affairs
Infrastructure and Projects Authority
Jacobs
KBR
Mail Metro Media
Major Projects Association
Mott MacDonald
Network Rail Ltd
nPlan
Nuclear Decommissioning Authority
Projecting Success
Sellafield Ltd
Sir Robert McAlpine
Tetra Tech
The Oakland Group
WMC: University of Warwick

more > **Major Projects Association resources**

more > **Major Projects Association events**

For further information contact the Major Projects Association at:

mpa@majorprojects.org

01865 818030

www.majorprojects.org