

FUTURE-PROOFING MAJOR PROJECTS - NAVIGATING AN UNCERTAIN MAJOR PROJECT WORLD



Highlights from the Major Projects Association 2017
Annual Conference held on 20th – 21st September 2017

Navigating an uncertain world has become one of the great challenges of our time, particularly for major projects and the organisations that support them. Organisations involved in the initiation and delivery of major projects must have the flexibility (and the bravery) to operate within the context of change and uncertainty; whether we consider geopolitics, technology, labour markets or customer expectations, they are all shifting. The challenges and opportunities for these organisations operating with the context of this uncertainty were addressed at the 2017 Major Projects Association Annual Conference.

Four key issues emerged:

1. Invest time and resources in future-proofing our organisations and projects.
2. Recognise that properly understanding risk can create opportunity.
3. Use new tools that move beyond linear thinking to approach change with an open mind.
4. Identify and remove common barriers to prepare for future challenges.

'It is very rare that you get complete stability, but in the UK over the last few decades it is difficult to think of a time when this has been more uncertain; where there have been more shifting sands on both the political agenda and the business agenda – and that of course affects everything that we do.'

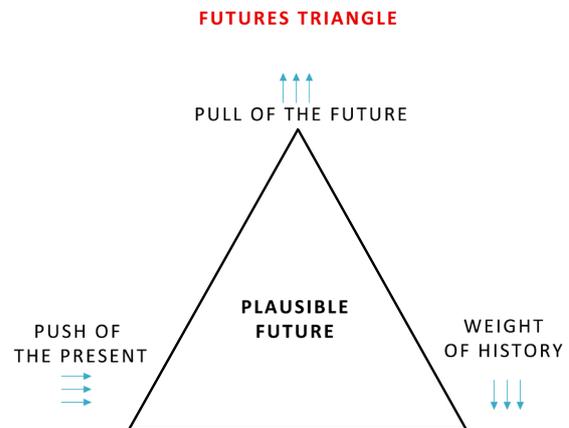
Sir Tim Laurence, Chairman, Major Projects Association

There was consensus that predicting the future is impossible, but there are a wide variety of resources that can be drawn upon that enable preparation for a range of potential futures.

While predicting future market trends is difficult, Airbus has backed investment in technology, digital design and data to ensure it is in shape and ready for future scenarios. That means capital projects such as the £38m wing design and testing centre in Bristol, alongside new partnerships to advance data analytical tools and create digital twinning models to boost design, construction and operation efficiency.

'We have embraced a fail fast approach. That has meant changing the way we work to embrace innovation.'

Katherine Bennett OBE, Senior Vice President, Airbus



(Catarina Tully, Director, School of International Futures)

THE NEED TO INVEST TIME AND RESOURCES

Change has been a constant factor, which the Earth has survived throughout its 45 million century history and the human race for the last few thousand centuries. Yet, change is accelerating and this century is the first time that one species – humans – has the planet's future in its hands.

Whether by irreversibly degrading the biosphere or through misdirected use of technology, it is truly possible for humans to cause a catastrophic setback to civilization. We need to invest to manage this risk.

'We fret unduly about small risks – air crashes, carcinogens in food, low radiation doses, etc. But we're in denial about some newly emergent threats, which may seem improbable but whose consequences could be globally devastating.'

The Lord Rees of Ludlow OM Kt Hon FREng FRS, Astronomer Royal

Human nature typically tends to focus on frequently occurring, low consequence threats to life rather than spending time and energy on the more extreme, low probability, high consequence threats that might confront us. Yet from a global perspective, the latter deserves expert analysis.

The problem is that for most politicians the immediate trumps the long term and the local trumps the global. Issues such as climate change inevitably slip down the agenda. This must change if, when designing and planning our built environment, we are to truly understand and future-proof our world.

That means investing in research and development but also shifting our culture and our planning horizon towards tackling the bigger, longer-term risks. The unfamiliar is not the same as the improbable – ignorance of consequences will not lessen their impact.

'If you care about those who'll live into the 22nd century and beyond, then you deem it worth paying an insurance premium now, to protect those generations against the worst-case scenarios. It's a dangerous delusion to think that space offers an escape from Earth's problems. There's no "Planet B".'

The Lord Rees of Ludlow OM Kt Hon FRS, Astronomer Royal

UNDERSTANDING RISK CAN CREATE OPPORTUNITY

Historically, disruptive technologies, such as the steam engine or the motor car, created as many jobs as they destroyed. As we enter this 'second machine age' of digital technology, artificial intelligence and machine learning, it remains unclear whether this will continue to be the case. Are the new disruptions different?

MAJOR PROJECT RISKS

Examples of major project risks – and why many are so hard to manage – include the following:

- Political risk – decisions are often driven by short-term cycles rather than informed opinion.
- Economic risk – difficult to predict and difficult to mitigate, particularly when linked to global events.
- Demand risk – typically, the only certain thing about demand forecasting is that it will be wrong. The question is by how much and when.
- Financing risk – due diligence does not always mitigate uncertainty.
- Planning uncertainty – technology and social media is redefining this risk.
- Legal risk – a source of delay and impediment to progress.
- Delivery uncertainty – capability and capacity is hard to address short term.
- Ethical risk – is what we are creating truly sustainable?
- Obsolescence – will what we design today be needed in the future?

When understood and managed properly these risks can also create opportunities.

Keith Howells, Group Chairman, Mott MacDonald

It is not possible to predict the future, and information alone will not always provide a clear route to mitigation. Being aware of this, being prepared and ready is the key to creating and benefiting from the opportunities that follow.

'Always expect to expect the unexpected. We don't pay enough attention to this corporately and to understand how we might plan to deal with this uncertainty.'

Keith Howells, Group Chairman, Mott MacDonald

DISCOURAGE LINEAR THINKING

History is littered with examples of predictions, often made by experts in their field, that have been proved wrong as the status quo is left behind.

For example, Steve Ballmer, former Microsoft CEO said in 2007: 'There's no chance that the iPhone is going to get any significant market share'; Thomas Watson, IBM Chairman, predicting in 1943: 'I think there's a world market for maybe five computers.' Certainly many of their other predictions came true; the key is to be aware that even experts get it wrong.

Strategic foresight is the organised and systematic process that can be used to improve our engagement with uncertainty by forming the right strategies and being prepared for change.

'There's a lot of baked-in thinking when it comes to predicting the future. At first sight, the future must always appear ridiculous – we must challenge our personal prejudices.'

Catarina Tully, Director, School of International Futures

Strategic foresight starts by exploring alternative futures and scanning the horizon to identify drivers, trends, emerging issues, disruptions and shocks. It is about being able to anticipate, not predict, the future; to identify the potential risks and opportunities; and requires a systematic process to help get beyond biases and group think.

Strategic foresight process:

1. Scoping – understand what you want to do; understand who it is for.
2. Ordering uncertainty – forces and factors influencing the future; structure different possible futures.
3. Implication – work through the consequences of the futures.
4. Integrating futures – embed the insights of your work into decisions today.

A number of tools are available to help order thinking throughout this process:

- Futures triangle – helps to think about the past, present and future impacts. (see page 1)
- Systems mapping – helps to assess how drivers come together in a system.
- Pen pictures – create alternative futures of a driver.
- Scenarios – combine drivers to create complex alternative futures.
- Vision – which is my desired future?
- Wind tunnel – stress-testing options in your scenario.
- Backcasting – how did we get here?

CASE STUDY: IATA – STRATEGIC FORECASTING

To help adopt a proactive stance in discussions on the future policy of aviation with airlines, government and stakeholders, IATA used strategic forecasting tools to identify future scenarios for the aviation industry.

The process identified three critical issues:

1. Sustainability – what will an industry-wide strategy look like?
2. Infrastructure – how will increasingly large airports impact development?
3. Data – will airlines have more data scientists than baggage handlers?

Critically, the process also enabled IATA to form a strategy to move from insights to action, and then identify the challenges and opportunities of embracing this change at national and regional level.

‘We realised that as an industry we needed to do a better job of anticipating the future. Most important was the implications and identifying what actions we had to take.’

Chaitan Jain, Assistant Director, External Affairs, IATA

CASE STUDY: MOD – SHAPING FUTURE CAPABILITY

The MOD’s Development, Concepts and Doctrine Centre was challenged with identifying the shape and capability of the UK’s future fighting force across air, land, sea and cyberspace. The challenge was to break away from thinking about kit and resources, to focus on the actual capability that would be required.

The Future Force Concept was achieved by looking forward to identify the global strategic trends and future scenarios in which the military would potentially be asked to serve. The work was then able to understand better what actions had to be taken today to form future policy that would ensure the necessary capability was put in place.

Finding and getting behind a concept for the future – often considered as unbelievable at first – was vital. Drive had to come from the top and required joint action from all stakeholders across air sea, land and cyber forces. Doctrine rather than dogma was set out to underline the fundamental principles – ‘a handrail on how to think, not a handbook on what to think’ – to be read, used and taught.

Critically, the outcome had to align with the vision – strategically aligned, concept-led, evidence-based and resource-aware – to create the required joint force advantage.

‘The danger is that when the future becomes complex we revert to what we know. Every organisation needs someone standing in the future looking back.’

Major General ‘Mitch’ Mitchell MBE, QCVS, Director, Development Concepts and Doctrine Centre, Ministry of Defence

IDENTIFYING AND REMOVING COMMON BARRIERS

Delegates were challenged to consider the major projects arena and to identify common barriers to action; challenges that would likely be met when trying to put in place business strategies for the future; and to highlight what had to be done differently to promote collective action.

The conclusions of this discussion were:

- There is a need for a common language across teams and disciplines to aid discussion and action over future priorities.
- The sector continues to under-involve the young generation in major discussions about future strategic decisions. This contributes to behavioural inertia.
- Greater diversity of gender, culture and ideas needs to be encouraged to break out of business as usual and identify new trends for the future. We remain burdened by fixed mindsets.
- Too little time is spent at board level on blue-sky thinking. Be sensitive to ‘weak signals’ from afar.
- Lowest cost procurement continues to stifle innovation and the adoption of emerging technology. How can we challenge traditional procurement and embrace new models?
- Decision-makers remain reluctant to make decisions. Need to remember to ask ‘why?’ and ‘for what?’
- Major projects are not allowed to fail – we rely on the known solution to manage risk rather than having the freedom to challenge convention – and possibly to fail in the process.
- Improvement in stakeholder engagement and public relations is needed to boost perceptions of projects and gain political will.
- The lack of alignment between policy and delivery must be tackled with improved relationships between project stakeholders.
- There is a need to break down disciplinary silos to help create better future forecasting and actions to mitigate the impact of change.
- The skills shortage – in particular, the likely Brexit impact – requires an industry-wide approach to tackle shortages in talent and promote future-focused ideas such as the revival of apprenticeships.

‘The key question is what should we do now to future-proof the major projects sector and ensure that we don’t just let the future happen to us.’

Mark Enzer, Chief Technical Officer, Mott MacDonald

CASE STUDY: BP – MAPPING POLITICAL RISK

Business leaders must break out of the linear thinking required for traditional business planning to embrace a more flexible approach, capable of adapting to change and a future of inevitable technological and political disruption.

While businesses like BP have robust and ‘anti-fragile’ diversified portfolios, there is still a huge risk that rigid business strategies based on future forecasting about political policies can be overrun by non-linear events.

Key tips for managing political risk emerged:

- Do not assume that you understand what the political landscape will look like in the future – it will change.
- Do not predicate your project based on government action.
- Align with government imperatives over the short term but do not bank on being looked after in the longer term.
- The elements of your business that you know best are likely to be at most risk technologically and politically.
- Better information does not destroy uncertainty – you might still misinterpret perfect information.

‘Future forecasting is rather like weather forecasting – more information and computer processing power doesn’t solve the problem.’

Dr Tom Wales, Group Political Adviser, BP

POINTS FOR FURTHER DISCUSSION

- Can more time and resource be focused on preventing rather than fighting fires in the major projects world?
- What else can be done to boost the diversity of gender, culture and ideas engaged in the challenge to future-proof major projects?
- What future capability and investment in talent is needed to safeguard the future of the major projects sector?

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Sir Tim Laurence, Chairman, Major Projects Association

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