

TRIED AND TESTED VS INNOVATION IN MAJOR PROJECTS

Highlights from the Major Projects Association event held on 26th April 2017

Understanding the context for innovation in the major projects sector is vital if industry and its clients want to accelerate the pace of introduction of new ways of thinking about, and delivering, projects. This Major Projects Association seminar aimed to understand the barriers, and what differentiates effective and ineffective innovation in projects.

'We have reached a critical moment for the infrastructure sector and have been presented with a great opportunity to get behind an innovation sector deal that promotes more digital design, manufacturing techniques and whole-life performance. The prize is huge productivity gains, a better skilled workforce and increased exports for the industry, and more houses, better journeys, cheaper energy and better public services for the UK.'

Andrew Wolstenholme OBE, Chief Executive Officer, Crossrail Limited

CREATING THE ENVIRONMENT AND CULTURE FOR INNOVATION

Innovation culture

Silver bullets to drive innovation do not exist: creating the context and circumstances in which innovation flourishes requires multiple conditions to be met. At the heart of innovation is the desire to take risks – to see what the status quo is, and to challenge it; to be willing to make mistake after mistake, in the hope that eventually a successful idea wins.

'Accept 80% is good enough; improve the solution once it is implemented.'

James Swanston, Chief Executive, Voyage Control

Getting money to innovators

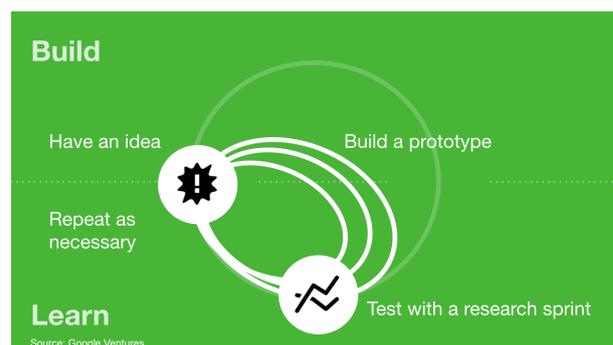
No innovation can get through to the market without early funding. This does not mean large sums of cash are required. Very small initial funding for promising ideas is needed to develop: £5K – £10K is typical to get to a funding proposal stage. If the idea still looks good, a second larger investment is made, in the region of £25K – £75K. After that, the idea sinks or swims on the business case it generates.

Linkage to fast adopters

Innovative solutions cannot triumph without fast adopters in industry picking up the ideas and providing critical early funding. The work of the industry is to seek the innovators, and – with forethought and care – invest at risk, in order to gain competitive advantage.

Fast life cycle of innovation

The underlying approach of fast cycling of innovative ideas, quickly and cheaply filtering the most likely candidates to develop, is somewhat alien to the long life cycle of major projects. Overcoming the risk-averse project mindset to innovate requires acceptance of multiple failures to find one successful solution.



(James Swanston, Chief Executive, Voyage Control)

Stimulation

The desire to be innovative needs to be embodied by leaders. Mechanisms must be put in place to encourage people to think about solving problems in novel ways, and to feel their voice will be heard, and their creativity embraced – conservative management behaviour that instils 'not invented here' syndrome crushes innovators' desire, and kills creativity.

'BETTER BY RIVER'

Thames Tideway innovated to take as much construction-related traffic off the roads of London as possible – and ended up changing the river traffic industry for the better. The outcome of the need to innovate ultimately led to the creation of a skills academy for River Thames professional Skippers and Mates, and the complete overhaul of the operating procedures in the sector. The outcome: 72% reduction in construction traffic on the road, and an improved, safer, more efficient Thames River shipping sector.

THE 'PROJECT TO PROJECT TO PROJECT' CHALLENGE

One of the factors that differentiates major projects from manufacturing and consulting is the project-to-project nature: it is the fundamental nature of the work. Hence, innovation tends to be focused within particular projects, and much less so at a company or industry level. Funding innovation 'off-line', i.e. outside companies' project portfolios, requires courage and commitment, but is nevertheless the most effective way to bring innovative solutions to an appropriate level of 'technology readiness'. Other sectors excel at creating and testing innovation in this way, before bringing to market within the project context. Equally important is a firm's ability to share innovations across its own projects – still far more difficult to achieve than is necessary.

'Is the client's role in innovation to mandate, constrain and manage it?'

Lorraine Butler, Interim Director SMP Operations, Highways England

It is increasingly accepted that clients have a critical role in driving innovation in the industry. Crossrail, Thames Tideway, and Highways England, amongst other large clients, recognise the impact they can have on innovation by establishing a climate in which innovation is not a by-product, but a *sine qua non* of the projects they need delivered.

They recognise that innovation covers a spectrum of activities, and is not only to be found in distinct 'innovation centres', but throughout the team; teams full of clever, insightful professionals, who often see the non-standard solution to novel problems. The oft quoted maxim is true: innovation is about people, not just technology.

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'It's about people, not just technology – it needs to be fun!'

David Yazdani, Senior Engineering and Programme Manager, Rolls-Royce plc

THE CHALLENGE FOR PROJECTS: AN OUTSIDE-IN PERSPECTIVE

Aerospace has innovated continuously since before the Wright Brothers first achieved powered flight in 1903. Reflecting on that industry, major projects will benefit from learning what drives innovation:

1. Where is innovation needed? For aerospace, it has been engines, wings, and flight controls – driving efficiency in materials, fuel, and human resources.
2. What are the tools that enable innovation? Computer-aided design/computer-aided manufacture (CAD/CAM) has underpinned extraordinary progress.
3. How to connect innovation to the customer? Customers drive innovation in aircraft: cheaper tickets from more fuel-efficient engines, ever safer flights, more direct route options – also from higher fuel efficiency.

POINTS FOR FURTHER DISCUSSION

- What can we learn from other sectors about creating a culture to enable the exploitation of innovations?
- What is the 'need' for innovation on major projects?
- What can increased computing power do for major projects, beyond BIM (Building Information Management)?
- How can major projects ensure customers/clients drive innovation?

Chair:

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Affinity Water
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