Crossrail
Capital project risk management on Europe’s largest construction program with Active Risk Manager (ARM)

The Challenge
Crossrail is Europe’s largest infrastructure program with a budget of £14.5 billion (approx. $23b). When it opens in 2018-9, Crossrail will carry 200 million passengers each year, increasing London’s transport capacity by 10%. It has multiple, complex construction projects running concurrently across the whole route. At the same time as constructing eight new underground stations, which have to be connected to the existing London Underground and rail networks, and four overground spurs, Crossrail must minimize disruption to the existing transport system and the millions of commuters which use it each day.

The 42km of tunnels will weave their way between existing underground lines, sewers, utility tunnels and foundations, at depths of up to 40m below some of the world’s most iconic buildings, one of the globe’s most important financial centers and under the busy streets of London.

Unlike some other major infrastructure initiatives, the Crossrail program involves many delivery partners including London Underground, Network Rail, Docklands Light Railway, Canary Wharf Group and Berkeley Homes. Each of the individual projects has its own mix of contractors and suppliers which must work seamlessly together to deliver each project element on-time, on-budget with minimal disruption.

The nature of Crossrail means that the program has potential reputational impacts for both London and the UK.

Crossrail needed a proven and integrated risk management solution to deliver both visibility across the organization for strategic decision making and in-depth capabilities to meet the day-to-day needs of each of the individual major projects in the program.

Challenge:
42km of tunnels under historic London landmarks.

Solution:
Implement ERM software in-house and across supply chain.

Results:
Consistent risk analysis, proactive risk mitigation.

"Managing risk and uncertainty is critical to the successful delivery of Crossrail."

Andrew Wolstenholme, CEO of Crossrail
The Solution

The complex nature of the program led Crossrail to select Active Risk Manager to provide the common system to manage risks across all its projects. ARM now delivers a consistent and coherent view of risk right across the business.

These are the Crossrail risk management milestones to date:

- 2010 – Implement ARM; design and deliver risk reporting
- 2011 – Introduce Quantitative Risk Assessments at project level; provide access to ARM to supply chain partners
- 2012 – Link risk management to corporate KPIs

Crossrail has mandated that contractors adopt the same risk management process and use ARM to manage and mitigate their risks. This provides Crossrail with the visibility and assurance that suppliers understand their risks are and are working hard to reduce them. The ability to demonstrate effective risk management capabilities is one of the criteria used in selecting contractors for each project. ARM is viewed as one of Crossrail’s business critical systems.

The Results

ARM has been used to create a common risk process across all areas of the complex Crossrail program. ARM integrates risk data from delivery partners, contractors and suppliers into a common repository for reporting and analysis and ensures that information is up to date and relevant for strategic decision making.

The single view provided by ARM ensures that best practices can be shared across the organization and between contractors doing similar work who may encounter similar risks. This brings efficiency and effectiveness to risk mitigation, keeping down costs and improving the likelihood of delivery to budget and to project milestones.

ARM provides the ‘shop window’ for risk and opportunity discussions when working with the project teams. ARM has enabled Crossrail to identify a set of a hundred key risks for the program. This has proved a powerful way to give people visibility of risks across the organization and to communicate with senior management.

ARM has ensured risk management is embedded at the heart of the Crossrail program and its many projects.

The information ARM provides has enabled Crossrail to take a proactive approach to risk mitigation:

- Technology decisions have been made with an emphasis on using tried and tested designs in order to avoid development risk
- Contracts have been packaged in order to mitigate interface risk between different contractors
- Tender documents have been drafted to take account of the risks associated with the works to ensure that risks are allocated to the party best placed to mitigate them.

We have now implemented ARM within our own organization and we are also implementing it across our supply chain to our major tier one contracting organizations.

Rob Halstead, Head of Risk Management, Crossrail