



## The growing IT influence on major projects

Seminar 138 held at Savoy Place, London  
5th December 2007

### Summary

#### Key conclusions

- Often IT projects are managed as if they were about changing IT processes, when in reality they are about changing business processes.
- Typical problems and challenges faced in IT projects are about relationships within the project team and with suppliers and with advisers, rather than technical problems with software or hardware.
- Key success principles include having senior level engagement; understanding what it means to be an 'intelligent client' and behaving as such; actively managing the expected benefits of the IT; and spending the time and money getting the specification right at the beginning of the project.
- Technology is irrelevant: the key to success is people, and for those people to develop clear communication, honesty and trust.
- Do not underestimate the level of uncertainty in the project – specifically the technical competence (or lack of it) of users; this will impact hugely upon future training and support requirements. It is important to properly understand the requirements of your end users.
- One important challenge in successfully managing an IT project is the management of uncertainty and risk.
- The development of a new IT system or process is rarely an end-goal in itself. The IT project must be incorporated into the whole and not treated as a separate subproject independent from the big picture.
- Awarding an IT contract with a supplier should not be seen as 'passing the baton'.
- Invest time and money in finding the right supplier.
- In the early stages, uncertainty is high. Avoid the rush to invest in IT: first simulate (the process) and stimulate (the team).
- Manage expectations and communicate the uncertainties. Avoid creep in the requirements.
- Rushing through acceptance testing too soon or too quickly is a mistake – it leads to errors, which lead to a lack of confidence in the project.
- IT projects change frequently – it is important to manage changes closely, otherwise neither you nor your supplier will know what they have been contracted to deliver.

## Introduction

All major projects now have an IT component, which includes control and monitoring systems for all functions of both the facility itself and the people who operate it. Since IT is usually the most innovative feature, it tends to be the most difficult to manage through to effective and reliable operation. Its installation has also become essential to operating the finished project, yet is the one which is finished last.

Most project management processes, such as financial modelling, communications, design, scheduling, cost control and document management, use IT, but they tend to have developed in isolation and not be well integrated.

Chaired by Sir Michael Latham, this seminar had two objectives: to investigate how best to integrate the design and commissioning of those systems which include IT in the totality of the project work, and to establish how best to utilise IT in the management of projects.

The seminar also looked at why IT project work has a poor reputation for successful outcomes, and what can be done to de-risk the management of the IT component. Speakers presented specific examples across a variety of sectors, talked about the reasons for poor success rates and suggested ways to improve the management of major IT projects.

## Successful use of IT in projects

The first presentation considered the use of IT from the perspective of the National Audit Office (NAO) and the Public Accounts Committee (PAC). It looked at the increasing need for IT in facilitating more efficient and effective delivery of public services, and the measures being taken by the Government to manage IT projects and the associated business change more successfully than has been the case over the last decade.

The NAO and PAC have examined examples of successful projects in the public and private sectors, with the aim of identifying the key factors that contributed to success and to see how they might be replicated by the public sector to reduce the risk of failure in the future.

Results can be seen in the the NAO report published in November 2006: [‘Delivering successful IT-enabled business change’](#).

The report highlighted three key lessons to be learned:

1. Senior level engagement should consist of a top management team including the engagement of ministers.
2. The Government needs to act as an ‘intelligent client’, understanding what this entails and adopting the role.
3. The Government must actively manage the expected benefits from the outset.

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Government must take a number of factors into account if it is to achieve its transformational vision.

For instance it must:

- understand what the IT needs to do, and get the specification right – in the past the Government has often been unclear about what it is trying to achieve, and has been prone to adopt leading edge or bespoke systems rather than proven or less risky systems
- manage the business change involved, including risks, relationships and new ways of working, to realise the benefits – the Government must recognise that IT projects involve more than a change of technology

## VOSA case study

The second presentation looked in detail at the computerisation of the Ministry of Transport (MOT) vehicle certification, a joint management project between the Vehicle and Operator Services Agency (VOSA) and Siemens IT Solutions and Services. The project affected the working practices of thousands of garages and end-users and is an example of the challenges of governing and managing a highly complex IT implementation programme.

Computerising the administration of the MOT testing scheme involved roll-out to 18,500 testing stations linked to a central database, and the training of 70,000 users, including 55,000 testers. It also required new certificates, a call centre, a website and a fee collection service.

The programme faced numerous challenges, but through the joint management approach a successful outcome was achieved. The lessons learned highlight the importance of methodology alignment, stakeholder management and the tight control of the handover between the project and service operations.

The presentation concluded with a number of points:

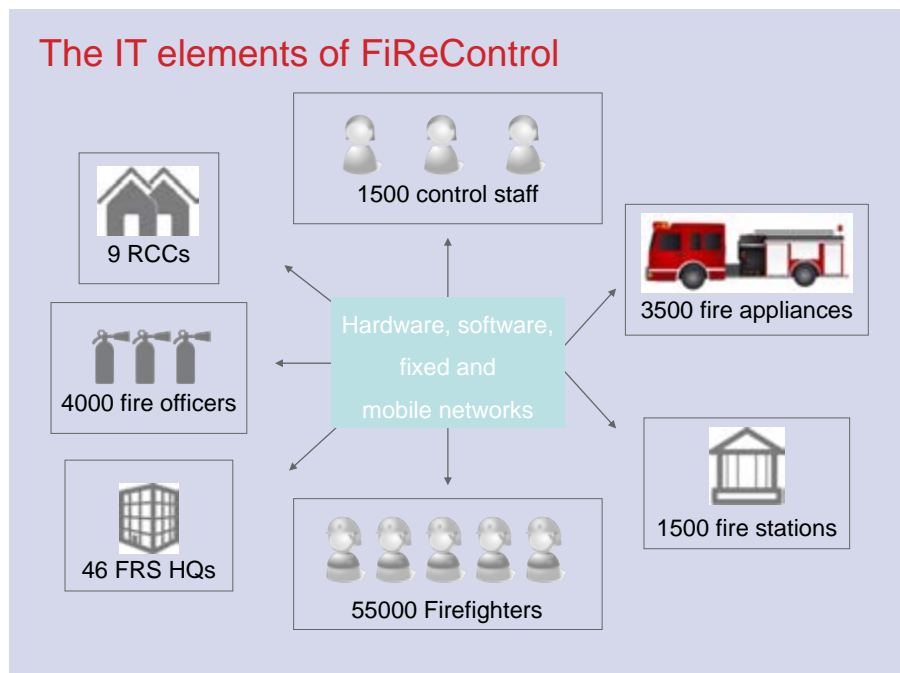
- The computerisation behind the production of a 'simple' paper certificate can be complicated – there are about two million lines of COBOL code on the mainframes and half a million lines of Java on each of the individual PCs.
- It is difficult to size a computer system based on manual records – there were more cars in the UK and more MOTs undertaken each year in the UK than was realised.
- Large scale training of novice computer users can take longer than expected.
- It was difficult to profile the service desk – the volume and length of local calls was much greater than expected.
- The large-scale national roll-out of the system was a logistical nightmare.
- People were the key – successful implementation of the technology was due to the way the people worked and drove the project to completion.

## FiReControl: improving the response to 999 fire calls – case study

This presentation looked at the role of IT in improving the Fire and Rescue Services' response to 999 calls.

The overall aim of the project – which is about half way through with four years to go – is to create a resilient network of nine regional control centres to replace the existing 46 stand-alone control rooms in England, one for each of the 46 fire services. As part of this, a system is required to provide the new control centres with service improvements and efficiencies, together with greater resilience and the possibility of wider change. For instance, if a control room receives more calls than it can handle, excess calls can still be answered and prioritised, and resources mobilised.

IT fits into the FiReControl system in various ways, as illustrated below:



RCC: Regional Control Centre  
FRS: Fire and Rescue Service

There was a detailed look at how to avoid and manage some of the pitfalls inherent in the IT element of projects in general, and some useful points to bear in mind were summarised as follows:

- Make sure the business-led requirements are traceable to agreed ways of working.
- Define the boundaries for IT elements in the context of the whole project.
- Make sure the right people are in the right roles to manage the IT elements as part of the whole project.
- Make sure uncertainties are understood and are being managed and communicated.
- Involve test teams early, and use this to build confidence.
- Invest in making the right decision – you will end up with the supplier that you deserve.
- Enable the supplier to be successful – without taking back risk.

## The East London Line project

The East London Line is a £363 million joint venture project between Balfour Beatty and Carillon (BB-CJV), and one of the cornerstones of Transport for London's (TfL's) £10 billion investment programme to improve London's rail infrastructure, transport and rolling stock. The project will deliver a new railway between West Croydon, Crystal Palace and Dalston Junction, incorporating the existing East London Line, and when completed will become part of TfL's new London Overground network.

This presentation outlined the nature of the project and the challenges faced by the team in establishing a wide reaching assurance capability throughout a complex supply chain – there are currently over 56 subcontracts, a number that is increasing by the week, with design work being carried out in over 25 design offices. This involves the implementation of IT systems and processes designed to unite all the key stakeholders, communicate and manage complex change and ultimately demonstrate and deliver a progressive assurance capability.

Details of how IT can help in achieving goals were considered, for instance validating that contract requirements are complete, correct and consistent, ensuring that technical cases meet requirements, or tracing requirements into design. Various compliance challenges are fundamental to delivering the project, such as managing change in technical requirements, and options for suitable compliance software were discussed. The presentation concluded by looking at what the IT has achieved.

## Minimising legal and commercial risks

A leading specialist in technology law discussed some of the major issues that can arise in IT projects, and provided some guidance towards minimising them. There is a poor track record in the UK for delivering successful IT projects on time and to budget, and some of the reasons for this were outlined. It was noted however that although there is a high failure rate, most disputes are resolved without resorting to litigation.

Many IT projects are fatally flawed even before the conclusion of the contract. The procurement phase of a contract is therefore crucial: problems occurring at this stage can impact on the project further down the line. Emphasis was placed on the importance of formalising an agreement and making sure that documentation is carefully worded; failure to do so increases the legal and commercial risks both for the client and the supplier.

The contract should not be forgotten once it is signed: it needs to be monitored/enforced regularly through effective project management procedures, so that any problems can be resolved swiftly and without adversely affecting the parties' relationship. To this end it is advisable to make the contract as user-friendly as possible.

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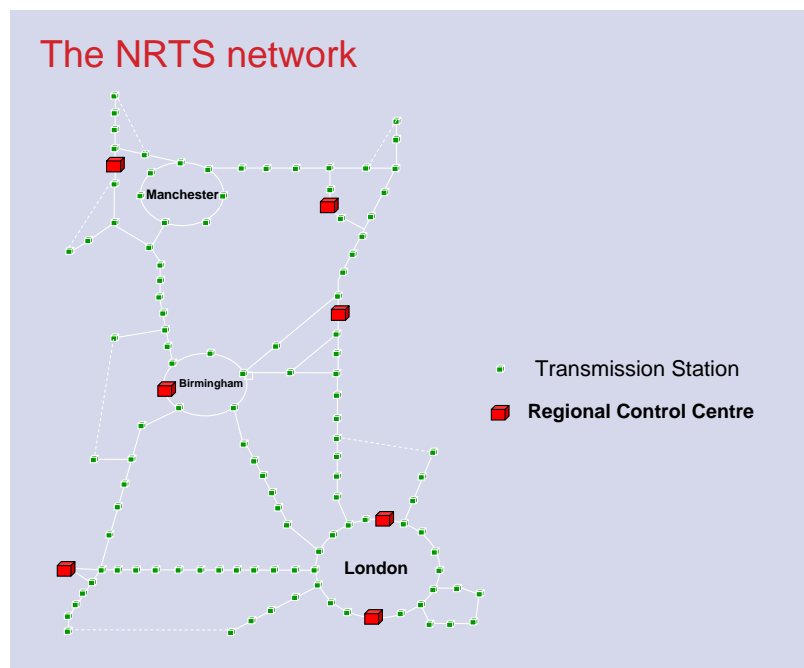
The presentation concluded with a look at why IT projects fail:

- poor requirement analysis
- no project 'champion'
- no effective accountability
- management by committee
- ineffective project management
- over-ambition
- over-selling by supplier
- adversarial relationships
- over-dependence on key technology/partners
- poor contracts

## Wiring up the roads

The final presentation described how the Highways Agency's role has changed from road builder to network operator, and explored the policy and issues surrounding some of the choices for the strategic road network now and in the future.

To facilitate its network operator role, the Agency decided to replace the outdated motorway communications network, which had evolved piecemeal over a 40 year period, with a new fibre optic network capable of accommodating new roadside devices and utilising internet protocols for communication. Known as the national roads telecommunications service (NRTS) project, details of the PPP contract and the benefits of the new system were outlined.



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In parallel with this development the Agency has worked on options to make better use of the existing road network to ease congestion. A successful pilot scheme was implemented on the M42 south-east of Birmingham, involving variable speed limits and use of the hard shoulder at peak times.

This Active Traffic Management (ATM) scheme is heavily dependent on supporting technology, and the additional capacity provided by NRTS will be vital if the scheme is to be rolled out across the network.

Results of the scheme have been positive and include:

- reduction in average journey times by up to 26% in worst afternoon peak times
- peak throughput volume increased by up to 13%
- above 95% compliance with speed limits
- personal injuries down from 5.2 per month to 1.5
- vehicle emissions down 10%
- 84% of users confident about using the hard shoulder; 93% say instructions are clear
- system is significantly cheaper than widening the motorway

## Conclusion

In his closing comments, Sir Michael Latham reminded everyone that IT is simply a tool of management and should be seen and used as such. The management of IT should be an essential part of efficient organisations, and if they do not have the capability in-house, the necessary expertise should be brought in.

He stressed how important it is to ensure that the technology will do the job it is intended to do, and noted that there have been cases where ministers and local authorities have been determined to go down a specific route without being sure that the technology will deliver what they want to achieve. They should be properly advised by consultants who are willing to say not only whether the technology will achieve the project's objective, but how long it will take.

## Participating organisations

Amey  
Atkins plc  
BAE SYSTEMS, Air  
Balfour Beatty plc  
Bovis Lend Lease  
British Energy  
British Telecommunications plc  
Centre for Research in the  
Management of Projects (UCL/UoM)  
Comply Serve Ltd  
Construction Skills  
Cross London Rail Links Ltd  
Denton Wilde Sapte  
EDF Energy  
Ernst & Young LLP  
Highways Agency  
KBR  
London 2012 Programme  
Major Projects Association  
Metronet Rail  
Murray & Roberts Holdings  
National Air Traffic Services Ltd  
National Audit Office  
Nuclear Decommissioning Authority  
Office of Government Commerce  
PA Consulting Group  
Rolls-Royce plc  
Scott Wilson Kirkpatrick & Co, Ltd  
Siemens IT Solutions and Services Ltd  
Shadbolt & Co LLP  
Sir Robert McAlpine  
Taylor Woodrow Construction  
Transport for London