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Government IT projects

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Summary

Government departments have 100 major IT projects underway with a total value of £10 billion. However, over the past five years, IT difficulties have affected, among others, the Criminal Records Bureau, Inland Revenue, National Air Traffic Services and the Department for Work and Pensions. The government has a target for making all services available electronically by 2005, so pressure is increasing to improve IT delivery.

This report analyses why some government IT projects fail, the measures government has put in place to tackle these problems and their effectiveness. The main findings are:

- Difficulties with IT delivery occur in both the public and private sectors. However, the public sector has specific issues to address, including long procurement timescales, high publicity, the need for accountability and the political environment.
- There are some factors which can lead to particular problems with IT, such as rapidly changing technology, difficulties in defining requirements and high complexity.
- IT projects are meant to be linked to departments' overall objectives and deliver benefits for the department, such as service improvements or efficiency gains.
- Much government IT is now delivered by external suppliers, so government needs to be an intelligent client. Departments require a range of skills to scrutinise bids, keep up to date with technology, be realistic about what systems are likely to deliver, understand commercial drivers and actively manage suppliers.
- Breaking projects down into smaller parts increases the chances of success and makes contingency planning easier, but requires considerable time and effort.
- It is important to include the final users in project development and provide time and resources for training.
- The government has introduced a number of initiatives aimed at increasing the success rate of IT projects. However, it is too soon to say how effective these will be and it remains difficult to ensure guidance is followed by all departments and lessons learned from previous project failures.

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1 Introduction

Successive governments have recognised the problems of successfully developing IT systems. Over the past five years, high profile IT difficulties have affected the Child Support Agency, Passport Office, Criminal Records Bureau, Inland Revenue, National Air Traffic Services and the Department for Work and Pensions, among others. In January 2003, 'Libra', a new IT system for Magistrates Courts, was described by the chairman of the Public Accounts Committee as, "*One of the worst IT projects I have ever seen.*"[1]

With the government's target for making all services available electronically by 2005 approaching rapidly, pressure is increasing to address the causes of IT development failure. This report examines reasons for public sector IT problems under three headings - government, technology, and managing projects. It asks whether such problems happen more often in the public than private sectors, and which issues can be traced directly to difficulties with technology. It then considers a range of analyses on why government IT projects fail and the project management solutions which have been proposed. Finally, it describes the measures government has put in place to address these problems and discusses their effectiveness.

While some of the issues appraised here are specific to IT projects, in general reviews have concluded that the remedy lies with solutions which can be applied to all types of project, such as better leadership, good relations with suppliers, management of risk and user involvement.

1 *Courts Libra system 'is one of the worst IT projects ever seen*', Computer weekly, 30 January 2003

2 Analysis of the problem

In 2002, the Public Accounts Committee reported that the government had 100 major IT projects underway, with a total value of £10 billion.[2] The Spending Review of 2002 allocated ~£6bn over three years to government electronic service delivery.[3] However, *Computing* magazine has calculated that the cost of cancelled or over-budget government IT projects over the last six years is greater than £1.5bn.[4] This chapter will consider how IT projects compare in the public and private sectors; discuss how far problems are specifically related to IT; and examine a number of reports on government IT projects and the solutions proposed. The box below describes some of the main organisations involved in government IT policy.

Key organisations

Office of Government Commerce (OGC)
OGC was established in April 2000, following a review of government procurement by Peter Gershon, who then became its Chief Executive.[5] Its remit is to promote widespread improvements in the way central civil government procures goods and services, and it has a target to deliver £3 billion of value for money gains in central civil government procurement between 2003-04 and 2005-06.

OGC is an independent office of the Treasury, reporting to its Chief Secretary. He chairs its supervisory board, which includes Permanent Secretaries and the head of the NAO.

Public Accounts Committee (PAC)
A House of Commons committee, the PAC examines reports produced by the head of the National Audit Office. About 50 of these reports are adopted by the committee each year, either by taking oral evidence or, occasionally, by sending written questions to the government departments concerned. The committee's objective is to draw lessons from past successes and failures which can be applied to future activity by the department examined or more generally.

National Audit Office (NAO)
The National Audit Office scrutinises public spending on behalf of Parliament and is independent of government. It audits the accounts of all government departments and agencies as well as a wide range of other public bodies, and reports to Parliament on the economy, efficiency and effectiveness with which government bodies have used public money. The NAO is headed by the Comptroller and Auditor General, Sir John Bourn.

Office of Public Services Reform (OPSR)
The Office of Public Services Reform (OPSR) was founded in June 2001 and is based in the Cabinet Office. OPSR is part of the Delivery and Reform Team, and supports government departments in carrying forward reform of public services.

Office of the e-Envoy
The Office of the e-Envoy was set up in 1999 and is also part of the Delivery and Reform Team in the Cabinet Office. Headed by Andrew Pinder, it is responsible for ensuring that all government services are available electronically by 2005.

Intellect
Intellect is the trade body for the UK-based information technology, telecommunications and electronics industry. Created in May 2002 by the merger of the Federation of the Electronics Industry and the Computing Services and Software Association, it has 1,000 corporate members.

2 *Improving Public Services Through e-Government,* Public Accounts Committee, HC845, August 2002
3 *UK Online Annual report*, Office of the e-envoy, November 2002
4 *Government IT problems since 1997*, Computing, 13 March 2003
5 *Review of Civil Procurement in Central Government*, Peter Gershon, April 1999. Available on the OGC website (www.ogc.gov.uk)

Defining 'success' or 'failure' for IT projects can be difficult. For example, projects may run over the original budget and time, but this could reflect an increase in the scope and requirements. Alternatively, a project could be to time, cost and meet requirements, but fail to deliver benefits to users. Success and failure also varies over the life of a project. For example, in summer 1999 the introduction of a new computer system for the Passport Agency led to long delays in issuing passports. However, the system is now working well, with 99.5% of straightforward applications turned around within 10 days.[6]

2.1 Government issues

Is this just a public sector problem?

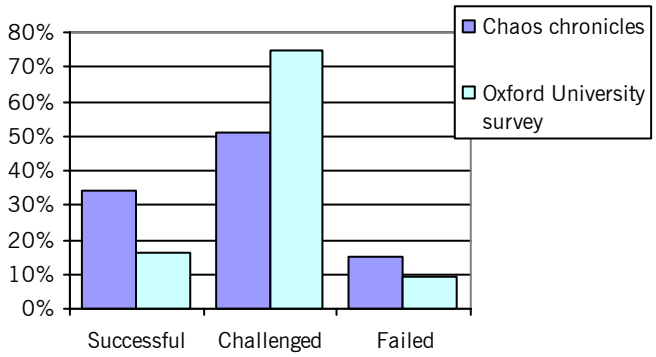
While public sector IT delivery undoubtedly has difficulties, the private sector's track record is not unblemished. The Standish Group in the USA has been publishing its 'Chaos chronicles' since 1994, classifying IT projects into three types:

- Successful – the project is completed on time and on budget, with all features and functions as originally specified
- Challenged – the project is completed and operational, but over-budget, over the time estimate and with fewer features and functions than initially specified
- Failed – the project is cancelled before completion.

The Group's latest report, published in 2003, considered 13,522 IT projects, with the results given in the graph below. Only a third of projects were successful; although there had been substantial improvements since the Group's first research in 1994, nearly 70% of projects were challenged or failed completely. On average, cost overruns were 43%, time overruns 82% and only half of the required features and functions made it to the final product. These figures led the Standish Group to suggest that, in 2002, the US wasted $55 billion in cancelled and over-run IT projects, compared with a total IT spend of $255 billion.[7]

The graph also shows the results of a survey by Oxford University and Computer Weekly, due to be published in the autumn. This found that about one in ten IT projects was abandoned, while three quarters were challenged and around 15% succeeded, with similar results for both private and public sectors.[8]

Figure 1: Success of IT projects, 2003



Sources: Chaos Chronicles 2003, Standish Group

Oxford University – Computer Weekly study of IT project management, 2003

6 UK Passport Service Annual Report and Accounts 2002-3, Passport Service, HC 969, July 2003

7 *Latest Standish Group CHAOS Report Shows Project Success Rates Have Improved by 50%*, Press release, Standish Group, March 2003, www.standishgroup.com

8 *Oxford University – Computer Weekly study of IT project management,* Chris Sauer and Christine Cuthbertson, Templeton College, University of Oxford, due to be published autumn 2003

Differences between the private and public sectors

Nevertheless, there are differences between IT projects in the public sector and the private sector. In its report *Getting IT Right for Government* [9], Intellect compared successful private sector IT projects with public sector projects. The table below summarises their conclusions, and some of the main differences are then considered. Although the figures for success and failure across the two sectors may be comparable, some argue that government is publicly funded, so it should aim for higher rates of success than the private sector.

Figure 2: Differences between private and public sector IT

Successful private sector projects	Public sector projects
Focussed on measurable financial and service outcomes	Have multiple aims, so hard to measure success
Business driven by competition	Generally not in competition with other projects
Often not visible to the public or shareholders	Highly visible to the public and the media
Less constrained by legislation and regulations	Constrained by UK and EU legislation
Open to risk taking	Managed in a risk averse culture
Designed to limit damage when they are in difficulty	Difficult to adapt to change because of scale and complexity
	Likely to interact with other departments

Source: Getting IT Right for Government, Intellect (formerly the Computing Services and Software Association), June 2000

Accountability

In the private sector, companies are accountable mainly to their shareholders, who may not even be aware of a project's existence. In contrast, the public sector has more open methods of accountability, such as reporting to the National Audit Office and the Public Accounts Committee. It has been suggested that this need for public accountability can lead to a risk averse culture in government, and *EURIM*, the Parliamentary IT lobby group, has recommended replacing, "*the culture of blame avoidance and cover-up followed by witch-hunt by one of risk management with recognition and reward for delivery of outcomes*." They suggested that this would require the Audit Commission, National Audit Office and Public Accounts Committee to report as much on success as on failure.[10] However, bodies such as the National Audit Office argue that they already support well managed risk taking intended to result in tangible benefits for taxpayers.[11]

Publicity

Government programmes may be announced 'early and often', leading to a build-up of expectations which may not be met. In particular, Ministers have been criticised for announcing initiatives before considering the full delivery implications. In the private sector, projects may remain unannounced until they are ready for delivery, with the result that failed or cancelled projects do not attract such media attention.

The political environment

In the public sector, policy can alter rapidly, often leading to IT changes. Therefore, the initial requirements for a project may be obsolete before the project has started. Also, relevant legislation may not pass through Parliament until just before implementation, so there is the potential for significant last-minute changes in requirements. Both these factors require contracts with suppliers that include flexible mechanisms for changing requirements, but the OECD points out that such changes are likely to, "*make systems more complicated, blur agreements with*

9 *Getting IT right for Government*, Intellect (formerly the Computing Services and Software Association), June 2000
10 *Making IT Work: The Pre-Conditions for Public Sector Systems Success*, EURIM Briefing No 37. September 2002
11 *Supporting innovation: Managing risk in government departments*, Report by the Comptroller and Auditor General, HC864, August 2000

providers and bloat budgets."[12]

Projects and programmes

The Office of Government Commerce differentiates between projects and programmes. They are defined as:

- A *project* is a particular way of managing activities to deliver specific outputs over a specific period and within cost, quality and resource constraints.
- A *programme* is a portfolio of projects and activities that are co-ordinated and managed as a unit such that they achieve outcomes and realise benefits.

Each programme consists of a number of a projects, which need to have an overarching architecture, and integrating these projects can be difficult, time-consuming and expensive. For brevity, this report generally refers to IT projects, rather than projects and programmes. Where an issue does not apply to both projects and programmes, this will be made clear.

Source: OGC

2.2 Technology issues

Many large projects and programmes (see box above for the distinction) have a high failure rate: for example, construction work can go over budget and run late. So, many of the issues discussed in this report - the need for a business case, project management skills, leadership etc. - apply to all types of project. Nevertheless, there are problems specific to IT, which may make IT projects prone to longer over-runs in time and cost and less likely to meet user requirements.

A 2001 survey across all sectors published by the British Computer Society (BCS) found that only around one in eight IT projects (13%) were successful (i.e. delivered on time, cost and to specification).[13] For development projects[14] the figure was even worse, with less than 1% succeeding. Some of the major issues are considered below. The Royal Academy of Engineering and the British Computer Society are currently conducting a study on the challenges of complex software projects, which aims to provide recommendations for increasing the likelihood of success.

Fast moving technology

IT differs from other projects in that the technology used is developing rapidly. This has a number of implications. Firstly, government departments are often not familiar with the latest IT developments, so may be unable to judge whether suppliers are overselling a particular technology and the ease with which it can be delivered. Secondly, technological advances can make projects obsolete before they have been completed. Thirdly, there is a tendency to desire cutting-edge solutions, which carry greater risk, rather than use tested commercial 'off-the-shelf' products as far as possible.

Defining requirements

The survey published by the British Computer Society found that poor management of the requirements and scope of a project were the most common causes of failure. [15] Clearly defined, fixed and understood requirements increase the chances of success, but in practice this is very difficult to achieve. A 'simple' change to requirements may require a fundamental redesign of the system, with large time and cost implications. For IT projects, user requirements are often not

12 *The hidden threat to e-government: avoiding large government IT failures*, OECD, PUMA policy brief no. 8, March 2001
13 *IT projects sink or swim*, Andrew Taylor, British Computer Society Review, 2001
14 Rather than maintenance or data conversion projects
15 *IT projects sink or swim*, Andrew Taylor, British Computer Society Review, 2001

clear at the start, for a number of reasons: users may be unsure of what they want; it may be difficult to identify their tacit knowledge about day-to-day processes; they may not have been consulted sufficiently; and they may be misunderstood. Departmental and strategic requirements may also be poorly defined. In addition, in both the public and private sector, external factors can cause requirements to change. According to the BCS study, three quarters of IT project managers reported that in their experience no project had ever been delivered to the initial specifications.

As an example, in the initial plans for the Criminal Records Bureau, only telephone and electronic applications for criminal records checks were to be taken. However, employers were unwilling to accept these routes so it was decided to introduce a paper application option. The independent review into the first six months' of operations found that this late change aggravated difficulties with the service's development. Following 'go live', systems and processes were inadequate to cope with demand and a backlog of applications built up.[16]

In many IT projects the bulk of requirements changes occur after the system has been implemented, as business processes change. So that the IT system can accommodate these changes, its architecture may need to mirror that of the business. In this way, areas that are easy to change in the business are also easy to change in IT (such as pay bands), while more fundamental business processes are also fundamental to the IT system.

The Treasury has recently concluded that Private Finance Initiative (PFI) procurement is often less effective for IT than for other sectors, partly because the requirements are difficult to define.[17] Contracts therefore need to be flexible to take account of changes, and projects broken down into much smaller modules which can be more easily defined (see section 2.8). One option is for 'hybrid' contracts, where part of the requirement is well known, clearly defined and rigidly controlled, with suppliers working to a fixed price. The rest of the contract can then be managed more flexibly, with scope for requirements changes and price alterations.

Complexity

IT projects can be very complex, with millions of lines of computer code. It is often not possible to calculate accurately the difficulty of such projects before they have started. Estimation tools give widely varying results and most suppliers rely on previous experience, which is necessarily very subjective - and can be misleading if lessons of previous projects have not been learned.

Oversight

It is difficult for management (especially non-technical management in government departments) to judge the quality or completeness of software as it is being developed. Providing oversight in the years between awarding a large contract and the delivery date can therefore be problematic.

Interoperability

IT projects generally have interfaces with other systems, which may also be changing. Ensuring these systems interact successfully is often a major challenge, and without an overall plan new systems can re-inforce differences between services rather than helping to join them together. EURIM suggests that interoperability should not be seen as an 'add-on' for services; widely available standards should be used where possible; and a over-arching management structure used to co-ordinate different elements.[18] For example, in the NHS National IT programme, strict

16 *Main findings from the Independent Review of the Criminal Records Bureau*, Home Office, December 2002
17 *PFI: meeting the investment challenge,* HM Treasury, July 2003
18 *Interoperability - Joined Up Government Needs Joined Up Systems*, EURIM briefing number 36, September 2002

interoperability criteria are being defined, so that data should be able to move seamlessly from one system to another.

Limited skills

Many software developers do not have formal qualifications in the subject, and the BCS has proposed that a better regulated profession is needed to ensure competency, quality and consistency. To assist with this, the BCS proposes that all bids for government IT contracts should be required to include the accreditation and qualifications of those who will be working on the project. However, there remains a significant IT skills shortage, so that major government suppliers may be overstretched and unable to deploy experienced developers on all projects.

2.3 Project issues

Although there are many publications examining public sector IT delivery, three key reports were produced in 1999/2000:

- In November 1999, the Public Accounts Committee published *Improving the Delivery of Government IT projects*.[19] This was based on the lessons of more than 25 cases from the 1990s where the Committee or the NAO had reported on government IT problems. It set out eight key conclusions and recommendations, all of which the government accepted.
- *Successful IT: Modernising Government in Action* was published by the Office of the e-Envoy in May 2000. It is known as the 'McCartney report' after its Ministerial sponsor, and made 30 recommendations to be addressed by the Office of Government Commerce, the Central IT Unit and government departments.
- Industry's input to the debate came in June 2000, with *Getting IT right for Government*, published by Intellect (formerly the Computing, Services and Software Association). Based on 40 submissions from IT suppliers, seminars and briefings, this gave eight key messages.

These three reports all made a range of recommendations that focussed on the difficulties of delivering complex projects. In addition, in 2002 the National Audit Office and the Office of Government Commerce identified eight common causes of project failure (see box on the next page). Drawing on these sources together with assessments of particular projects, the sections below will consider five overarching issues:

- The need for a business case, to ensure projects deliver benefits
- Leadership and senior management commitment
- Involving users at all stages of the project
- Relationships between government and suppliers
- The need for good project and risk management.

2.4 The need for a business case

It is generally agreed that IT projects too often have been seen as about technology, rather than about improving the way services are delivered – Intellect suggest that, "*There is no such thing as an IT project in isolation from its business change programme.*"[20] A business case aims to ensure that the project or programme contributes to the overall objectives of the department - it is meant to justify the investment in new technology and quantify the intended benefits. Benefits could include improving the quality of service, releasing resources for front-line service delivery and making support activities more efficient. The NAO recently reported that departments have difficulty in determining the level of savings and extent of service improvements that IT can be expected to achieve.[21] It has therefore set out requirements that the business case should cover,

19 Committee of Public Accounts, 24 November 1999, HC 65
20 *Getting IT right for Government*, Intellect (formerly the Computing Services and Software Association), June 2000
21 *Better public services through e-Government*, Report by the Comptroller and Auditor General, HC 704, April 2002

including critical success factors and how they will be measured, assessment of risk and the roles and responsibilities of key stakeholders.

National Audit Office/ Office of Government Commerce
List of common causes of project failure

1. Lack of clear link between the project and the organisation's key strategic priorities, including agreed measures of success.
2. Lack of clear senior management and Ministerial ownership and leadership.
3. Lack of effective engagement with stakeholders.
4. Lack of skills and proven approach to project management and risk management.
5. Lack of understanding of and contact with the supply industry at senior levels in the organisation.
6. Evaluation of proposals driven by initial price rather than long term value for money (especially securing delivery of business benefits).
7. Too little attention to breaking development and implementation into manageable steps.
8. Inadequate resources and skills to deliver the total delivery portfolio.

As the project evolves, it is likely that the department's requirements and the projected benefits will change, and this needs to be reflected by updating the business case. The McCartney report noted that there had been weaknesses in the systems used for ensuring the benefits are tracked and delivered, recommending that projects undertake periodic reviews of proposed benefits and post-implementation reviews of whether the benefits were delivered.

The NAO has suggested that departments should examine their ways of working in parallel to introducing new IT systems.[22] For example, implementing standardised IT services is more straightforward if working processes are standard across the organisation; such reconsideration can also help to ensure that departments improve efficiency and service delivery. However, many IT projects are simply seen as 'bolt-on' computerised front-ends to existing processes. When considering e-government projects, the Public Accounts Committee expressed concern that departments should not, "*simply convert existing ways of delivering services to electronic applications but consider how IT can be used to enhance and improve services.*" [23] The box on the next page about NHS Direct describes a project that was successfully introduced and has been used to provide a new service to an increasing number of users.

2.5 Leadership and senior management commitment

All the key reports into government IT have been clear about the need for leadership and commitment from senior management at Board level and from Ministers. The Public Accounts Committee reported that there was "*significant evidence*" that projects with Board level ownership were more likely to be successful. Similarly, a recent study by researchers at Oxford University found that project managers cited lack of top management commitment as the primary risk to IT projects.[24] In particular, it is generally seen as important that responsibility rests not with a committee, but with a single person who is accountable for ensuring that the project delivers its intended benefits to the department.

To address this, the McCartney report recommended that all projects should have a 'Senior Responsible Owner' – this is considered further in Chapter 3. Some commentators have also

22 *New IT systems for Magistrates' Courts: the Libra project*, Report by the Comptroller and Auditor General, HC 327 January 2003
23 *Improving Public Services Through e-Government*, Public Accounts Committee, HC845, August 2002
24 *Challenges and trends in IT project/ programme management*, Chris Sauer and Christine Cuthbertson, Templeton College, University of Oxford, 2003

argued that senior civil servants' pay should be tied more closely to project success; the research from Oxford also suggests that, in nearly half of projects across sectors, a senior manager would expect to be rewarded significantly on the outcome.[25]

The introduction of NHS Direct

NHS Direct provides healthcare information and advice to the public in England and Wales, through a telephone helpline and associated on-line service. It handles over half a million telephone calls and half a million internet sessions every month. It regularly attracts user satisfaction ratings of 95% or higher, and call volumes have grown by an average of 20% per year since introduction.

The creation of NHS Direct was announced in December 1997, with a target to put in place a telephone helpline covering England and Wales by the end of 2000. This target was met in November 2000. The target date for introducing a website companion service was autumn 1999, and this was met in December 1999. NAO reported that meeting such a demanding timetable was a 'considerable achievement'.

The NAO identified a number of factors in the success of the project. The tight timetable allowed little formal opportunity for lessons from pilot sites to be incorporated into subsequent waves. However, short lines of communication between the project team and those implementing the roll-out meant that key lessons were taken forward and central guidance provided. Local site providers were allowed to develop their own models of implementation, and NAO found this was crucial to achieving the timetable.
A wide range of stakeholders was consulted during development, through two consultative groups, although the NAO found that some elements of the consultation had been curtailed due to the tight timescale.

NHS Direct's telephone service is assisted by a computerised decision support system, which nurses use to aid them in advising callers. Three local systems were procured initially, which provided valuable information about the best type of system to use nationally. Procurement of a national system involved evaluation of bids by a team of key interested groups, and prospective suppliers were shortlisted for trials on both 'dummy' and 'live' calls. The national system was in place at all sites by October 2001, six months later than specified in the contract, to allow for better planning of roll-out. NAO concluded that the £70 million procurement was well managed.

Overall, the Public Accounts Committee concluded that the implementation of NHS Direct across England was a significant achievement given its scale and innovative nature.

Sources: *NHS Direct in England, Report by the Comptroller and Auditor General, HC 505, January 2002*
NHS Direct in England, Committee of Public Accounts, HC 610, July 2002
Developing NHS Direct, Department of Health, April 2003

2.6 Involving users

The people who will eventually use an IT service should be involved in IT projects for three reasons. Firstly, the initial requirements should be based on users' needs (although these can be hard to define – see section 2.2) and testing should accurately reflect the demands on the service. The Public Accounts Committee recommended that end users be identified before a project starts, so that the business case and service design can be built around their needs and preferences. IT development is moving towards iterative development cycles, where prototypes are developed quickly and tested with users, issues addressed and further prototypes produced, so that user needs are integral to the project. Government's PRINCE2 method of project management gives users a place on the project board and the project team should regularly ensure that users' needs are being met. The box on the next page about the Probation Service's CRAMS project considers an IT service where a poor user interface contributed to project development being suspended.

25 *From individual projects and programmes to organisational capability*, Chris Sauer and Christine Cuthbertson, Templeton College, University of Oxford, 2003

Secondly, users are involved to build ownership and reduce resistance to change. If the end users are hostile to a project, it is less likely to result in benefits for the department. Indeed, some private sector projects provide financial incentives to users to encourage acceptance of change.

Finally, the training needs of end users should be built into the project. To be most effective, training needs to take place just before the skills are to be used - this is a particular problem for large, 'big bang' implementations, where training all the users could take months. As well as time and resources for training, project teams also need to recognise that staff productivity may drop immediately after implementation, while people get used to the new service. This was a key factor in the passport delays of summer 1999, where processing times lengthened because staff were unfamiliar with a new system.[26]

National Probation Service - Case Recording and Management System (CRAMS)

CRAMS was to be used by probation officers nationwide to record the details of offenders, sentences, supervision orders and actions taken and to produce reports for courts. An enhanced version of a system developed and used by Northumbria Probation Service, it was to be introduced alongside a new national computer infrastructure. In December 1994, Bull Information Systems Limited (now Steria) was awarded the prime contract to install and support the new infrastructure and CRAMS for seven years.

The first pilot version of CRAMS was installed in two probation services in November 1995, but withdrawn three months later following technical problems. In November 1996, a consultant from the government Central Computer and Telecommunications Agency (now part of OGC) concluded there were problems with pilot and acceptance testing arrangements for CRAMS, and that the system's acceptability and usability were unknown.

Users found CRAMS difficult to operate, with two independent ergonomic assessments pointing to a poor user interface. In particular, one team reported a potentially high risk of stress to users, and that the user interface was illogical, inflexible and unforgiving of user error. Also, the Home Office did not ensure that CRAMS' development kept pace with changing need, for example for access to operational data held by other areas.

Overall CRAMS was introduced in 39 out of the 54 probation services, and used substantially by only 16 of these. 27 services continued to use alternative case management systems or developed systems to supplement CRAMS. As a result of the limitations with CRAMS the Home Office suspended further development in September 1999. The Home Office initially expected CRAMS to cost £4 million, but final costs were more than double this.

The National Audit Office, in its report on CRAMS, concluded that:

- Programme responsibilities were not always clear and communication between the Home Office and local services was not always effective
- The Home Office underestimated the technical risks associated with updating and developing the system for use nationally
- The Home Office sought to address problems, but did not prevent the roll out of poor quality software
- CRAMS' management information capability was not adequately specified.

Source: *The Implementation of the National Probation Service Information Systems Strategy, Report by the Comptroller and Auditor General, HC 401, April 2001*

2.7 Relations between government and suppliers

The Organisation for Economic Co-operation and Development (OECD) has suggested a number of reasons why governments might choose to procure IT from the private sector, including:[27]

- Competition can lower the price of systems
- Private sector providers may be more innovative and may have more qualified staff
- The public sector should concentrate on its core business (which does not include building

26 *The Passport Delays of Summer 1999*, report by the Comptroller and Auditor General, HC 812, October 1999
27 *The hidden threat to e-government: avoiding large government IT failures*, OECD, PUMA policy brief no. 8, March 2001

large IT systems).

However, many public sector services depend on IT, so others argue that procuring and managing large IT systems should now be seen as part of departments' core business. The OECD itself is aware that procurement from the private sector can lead to problems for government, which may lack the skills needed to manage suppliers. Further, the two parties may not trust one another, and have different cultures which can make understanding difficult.

Procurement models

As discussed in the Public Accounts Committee report *Improving the delivery of Government IT projects*, the relationship between government and IT suppliers is constantly evolving. From a mixture of in-house and consultant projects in the 1960s and 70s, by the late 1980s there was a move towards contracting out IT development, resulting in larger contracts between government and suppliers. Under the 'Next steps' programme, some departmental IT divisions were given agency status, while others were outsourced entirely. In 1993 the Driver and Vehicle Licensing Agency IT directorate was first turned into an agency, then sold completely to EDS – a process which the National Audit Office noted cost the Department of Transport over £500,000 in legal fees, compared with an original estimate of £30-80,000.[28] In the 1990s, the Inland Revenue and Department of Social Security both outsourced their IT divisions in large framework deals where the departments worked closely with individual suppliers (see box below).

Inland Revenue/ EDS strategic partnership

In 1994, the Inland Revenue awarded a ten year contract to EDS, to provide it with information technology services. As a result, 1,900 of the department's IT staff transferred to EDS. The contract will have been worth more than £2bn by the time it is completed in 2004. It is not a fixed price contract, as the requirements of the department change in response to policy changes and administrative improvements.

According to the NAO, the Inland Revenue's partnership with EDS has, by comparison with other major IT projects, helped the department deliver significant changes to demanding timetables. Important factors in the department's successful management of the partnership include active involvement by top management, a recognition that both parties need to secure benefits, active management of risk and a commitment to resolving issues in a positive, constructive manner. Nevertheless, the PAC stressed the need for continual benchmarking of the costs, efficiency and effectiveness of EDS service provision with other organisations. In general, the Inland Revenue/ EDS partnership is widely viewed as a model of best practice.

However, as with any large scale partnership, there can be difficulties with individual projects. These were demonstrated by problems in April 2003 with the introduction of child and working tax credits, resulting in hundreds of thousands of claimants receiving late payments. An earlier Office of Government Commerce review concluded that "*this is an exemplar of good programme management*."[29], but the Paymaster General admitted in June that, "*The IT system supporting the new tax credits has not been working as well as we expected and there has been unscheduled down time as a result. The Inland Revenue are working urgently with their IT partners to improve the system's availability, speed and stability*."[30] The House of Commons Treasury Select Committee considered the system's performance was, "*wholly unacceptable and it has led to pressures which at times have swamped both the system and the staff.*"

Sources: *Inland Revenue/ EDS Strategic Partnership: Award of New Work, Report by the Comptroller and Auditor General, HC351, March 2000*
Inland Revenue/ EDS Strategic Partnership: Award of New Work, PAC, HC431, July 2000
Inland Revenue Matters, House of Commons Treasury Select Committee, HC 834, July 2003

28 *Department of Transport: Sale of DVOIT*, report by the Comptroller and Auditor General, HC 128, 26 Jan 1995
29 Dawn Primarolo, Hansard, 4 Jun 2003 : Column 122WH
30 Dawn Primarolo, Hansard, 13 Jun 2003 : Column 1089W

From 1992, private finance initiative (PFI) projects were introduced, where the private sector designed, built, financed and operated the project, in return for ongoing payments from departments throughout the period of the contract. Used for a range of projects, such as prisons, hospitals and roads, PFI IT contracts have included the National Insurance Recording System 2, Libra (a new IT system for magistrates courts) and OSIRIS (the office IT system for the National Assembly for Wales). Public private partnerships (PPP) include the private sector in a wider range of partnerships, covering PFI but also including franchises, selling government services into other markets and the introduction of private sector ownership into state-owned businesses.[31] PPPs with significant IT-related components have included the Department of National Savings' partnership with Siemens Business Services and the PPP for National Air Traffic Services Ltd. The Treasury has recently examined PFI, concluding that the government would now adopt a presumption against the use of PFI in future IT projects (see box below).

The PAC concluded that problems had occurred under all methods of procurement, and proposed that improvements were needed in relations between departments and suppliers and in the clarity of contracts. In particular, they suggested:

- Departments should maintain a close relationship with suppliers, but avoid undue reliance on them.
- All parties need a clear understanding of their roles and responsibilities, and these should be defined in the contract.
- Contracts should be continuously managed, to allow for inevitable changes to requirements.
- Departments should ensure the business implications of late delivery are reflected in contractual incentives.

Treasury assessment of PFI for IT projects

The Treasury examined PFI across different sectors in July 2003. It found that the majority of more successful PFI IT projects were those where the public sector had renegotiated terms after the contract was signed, moving away from the PFI model. It therefore concluded that PFI may not be the appropriate procurement route for IT, because:

- It is difficult to codify long-term IT requirements into an effective contract, because technology changes rapidly and IT is closely linked to business operational needs.
- As IT is highly integrated into other business systems, it is hard to define areas of responsibility between the client and supplier, and so transfer risk effectively.
- It is difficult to substitute suppliers if a contractor fails to meet its obligations. So when an adequate service is not delivered, departments are often at a disadvantage in negotiating with their existing vendors. The Treasury argued that this problem has not occurred in most non-IT PFI projects.
- Most non-IT PFI projects involve third-party finance, but this is rare in IT PFI, removing a source of scrutiny so making it more difficult to ensure risks are allocated effectively; and making it hard for small companies to bid for projects, so weakening competition.
- The costs of delivering IT projects are dominated by the annual running costs rather than upfront costs of assets.
- The life of PFI IT contracts is relatively short (typically 10 years) compared to other sectors. Even during this period, the contractor has to replace the assets - for example, desktop PCs are generally replaced more than once every ten years.

As a result, OGC and the Treasury are drawing up guidance on a range of models for government IT partnering projects. These will aim to offer appropriate levels of flexibility, ensure optimal risk transfer and tackle specifically the handling of IT integration risk.

Source: PFI: meeting the investment challenge, HM Treasury, July 2003

31 *Public private partnerships: the Government's approach*, HM Treasury, 2000

Procurement timescales and costs

In general, public sector IT contracts take a long time to procure - eighteen months is common, and periods of several years are not unheard of. Such timescales increase the costs for suppliers, put government contracts beyond the reach of many smaller companies, delay delivery of benefits for departments, reduce government responsiveness and run the risk that technology is outdated before the contract has been signed. Guidance from OGC on speeding up procurement stresses the need for professionalism, clarity in requirements, using existing framework agreements and choosing external advice carefully. Focusing the information required from bidders would also assist small businesses, who are likely to be discouraged by the need to submit extensive supporting information (such as an equal opportunities policy, as required by some local councils). OGC and the Regulatory Impact Unit are currently conducting a project that aims to reduce the time and costs of government procurement.

To reduce the expense to suppliers in bidding for government work, departments can pay part of the bid costs for shortlisted suppliers; the NAO has recently suggested that this approach may have merits, particularly where there is a very strong incumbent supplier.[32] Another approach is for departments to fund small (possibly a few million pounds) implementation studies from preferred bidders; the department can then use these studies in implementing the service. This path has been followed for the new £4 billion Inland Revenue technology contract, where bid costs are likely to be in excess of £10m. It was also followed by Transport for London when procuring services for Congestion Charging.

Checking for realism

In relations with suppliers, government departments need to act as 'intelligent clients'. Intellect admitted that IT suppliers had "*on occasion*" been over-optimistic in planning major programmes, and suggested that these practices should be avoided by industry. OGC has identified the need for 'realism' as a key element to improve supplier relationships, stressing that government departments should check that the supplier can provide and maintain services for the quoted price. The box on the Libra project (see box on the next page) gives an example of one project where the supplier's initial cost estimates were revised substantially upwards as the project developed.

However, as much public sector IT development is now contracted to the private sector, it may be difficult for departments to find people with these skills; the number of government IT practitioners fell from 12,000 in the mid-nineties to less than 3,000 by 2000.[33] Departments can bring in outside expertise to help procure IT services and manage suppliers – although even this requires an 'intelligent client' approach to select the advisers, and may be expensive. One method is to select advisers who assist with defining requirements, designing the architecture and procuring the main supplier, and then help to manage the supplier and the programme.

32 *Awarding the new licence to run the National Lottery*, report by the Comptroller and Auditor General, HC 803, May 2002

33 *Successful IT: Modernising Government in Action,* Office of the e-Envoy, May 2000

Libra – new IT systems for Magistrates' Courts

The Libra project aimed to provide:
- a national IT infrastructure for magistrate's courts, including PCs, office software and on-line support
- a standard national software application to support court work (casework, accounting etc.)
- direct electronic links with other criminal justice agencies.

In May 1998 ICL (now Fujitsu Services) submitted the only bid for the contract – originally for £146 million, but increased to £184 million in October 1998. A PFI contract was signed between the Lord Chancellor's Department and ICL in December 1998, for £184 million over 10.5 years.

By May 2000, the contract had been revised to £319 million over 14.5 years. Nevertheless, a further re-evaluation in June 2001 led ICL to determine that their forecast losses were so high that a substantial renegotiation was again needed. At the same time, a Gateway review (see section 3.1) found the project to be in serious trouble, and not able to pass the review.

ICL was in breach of contract by July 2001, but the department decided not to terminate the contract and sue for damages, as this would have led to severe disruption to service delivery and the potential for ICL to counterclaim. Instead the department agreed to renegotiate and signed a memorandum of understanding in October 2001. ICL proposed a new price of £400 million in February 2002, but the department considered that this did not provide value for money, and a second Gateway review agreed.

A revised contract was signed in July 2002 for £232 million, over 8.5 years, to supply only the infrastructure elements of Libra. The department is procuring new contracts with other suppliers for software and systems integration.

In its assessment of the project, the NAO made a number of recommendations for future projects, including:
- IT system changes should be planned to support redesigned business processes – the department had developed the Libra project to support existing business processes, rather than develop new business processes in parallel with new IT.
- Departments should take it as a warning sign that proposed PFI projects may not be workable if few bidders show initial interest and others withdraw as the procurement process continues.
- When seeking references on a potential contractor, departments should obtain an assessment of that contractor's performance elsewhere within government – at the time the department chose ICL, they were aware that ICL was facing difficulties on another government IT project, the Benefits Payment Card.
- Departments should have up-to-date contingency plans ready on all major contracts so that there is a fall-back position if and when a contract goes wrong.

Source: *New IT Systems for Magistrates' Courts: the Libra project, Report by the Comptroller and Auditor General, HC 327 Session 2002-2003*

2.8 Project and risk management

Historically, the civil service has valued policy skills above other attributes such as operational abilities or project management. The McCartney report recognised that ineffective project management contributed to projects' failure; in particular, it stressed the need to appoint experienced project managers who can recognise areas of concern. Similarly, the PAC called for the development of high quality project management skills within government. Intellect argued that project management teams should be appointed for the duration of the project and not subject to unnecessary personnel changes: this has been a particular difficulty in the civil service, where staff are often moved regularly. Government often uses the PRINCE2 method for project management, owned by the Office of Government Commerce (see box on the next page). The second box on the next page considers the Public Record Office's Electronic Catalogue, which was successfully implemented using PRINCE2.

PRINCE2

UK Government IT projects are managed using the PRINCE2 method – Project Management in a Controlled Environment. PRINCE was developed in 1989 and is managed by the Office of Government Commerce, with the manual published by the Stationery Office and officially accredited training, registration and examination. Although originally aimed at IT projects, it is now also used for other types of government project.

PRINCE2 sets out a series of processes which cover all the activities involved in a project, from start-up to close. It attempts to define each process, detailing its inputs and outputs, objectives and activities. It specifies the roles and responsibilities for managing a project, including setting up a project board with representatives from the customer, user and supplier. The method also explains how to manage risk, quality and change. Overall, PRINCE2 aims for projects to have:

- A controlled and organised start, middle and end
- Regular reviews of progress against plan and against the Business Case
- Flexible decision points
- Automatic management control of any deviations from the plan
- The involvement of management and stakeholders at the right time and place during the project
- Good communication channels between the project, project management, and the rest of the organisation.

Source: www.prince2.org.uk

Public Record Office's Electronic Catalogue

The Public Record Office is the national archive for England, Wales and the United Kingdom, and it holds over 150 kilometres of records. PROCAT, an online electronic catalogue to the Office's holdings, went on the web in March 2001. Software development cost a total of £1 million, and was delivered on time and to the required specification.

There were two main elements to the project:

- the conversion of 350,000 pages of lists into electronic format and storage on a database, which was used as an interim catalogue
- the development of a user-friendly but professional on-line electronic finding aid.

The NAO identified benefits in two categories. Firstly, the archive provided internal efficiencies through reducing routine word processing and editing; reducing the chance of errors; providing better management information; and increasing accuracy. Secondly, service delivery to customers was improved, through a faster, more accessible service, with greater choice and convenience.

The Public Record Office found that successful implementation was aided by:

- Adopting a controlled and incremental approach. The Office ran pre-cursor projects, to investigate different options and prove the technology. Interim and pilot catalogues provided information on the types of users, the internet browsers they wanted to use and the types of enquiries they were making. Also, the transition from the interim system to the full system took place as seamlessly as possible and without a 'big bang'.
- Involving senior management and users in the project. The project board had internal user representatives, while external user views were sought through focus groups, open days, consultation with Departmental Record Officers and comment forms, among other means.
- Maintenance of a dynamic risk register, with weekly planning meetings to decide how risks were going to be managed.

Source: *Case Studies in support to Better Public Services through e-government, Report by the Comptroller and Auditor General, HC 704-II, April 2002*

Managing risk

Intellect suggests that both the public and the private sectors fail to identify risks properly and to provide contingency plans, although departments now have overall risk frameworks and individual project risk assessments feed into these. OGC also points to the allocation of risk between suppliers and departments as an area for improvement. While many early PFI projects sought to transfer as much of the risk to the supplier as possible, the wider risks of failing to provide an operational service will always fall to the department (see the box below, about the Benefits Payments Card project).

The Benefits Payment Card project

The Benefits Payment Card project aimed to introduce a magnetic stripe payment card for social security benefits, to replace the existing paper-based method of paying benefits. This was intended to reduce benefit fraud. In 1999/2000, post offices made around 760 million payments of 24 different benefits worth £56 billion. The new system would involve automating up to 20,000 post offices, and training 67,000 staff.

In May 1996 a PFI contract worth around £1 billion was awarded to Pathway, a subsidiary of ICL (now Fujitsu Services), by the then Department of Social Security and Post Office Counters Limited. A limited prototype system was produced by October 1996, but scaling this up proved much more difficult than imagined. By February 1997, the two purchasers and Pathway had agreed a 'no-fault' re-plan of the project, where the final delivery date would be deferred by three months.

However, progress continued to be slow and by November 1997 the purchasers served Pathway with a formal notice of breach of contract. Pathway did not accept liability, asserting breach of obligation by the purchasers, and wrote to the Benefits Agency in December 1997 suggesting that if the project were to continue it would either have to raise prices by 30%, or extend the contract by five years and raise prices by 5%.

In July 1998, an independent panel of experts concluded that the project could deliver the functions required, but not until 2001 - three years later than originally planned, and at uncertain cost. By May 1999, the government decided to remove the payment card from the project and instead have benefit payments made by automated transfer to claimants' bank accounts, starting in 2003. Automation of the Post Office would continue, with the introduction of banking technology to allow claimants to collect their cash at post offices if desired.

The Comptroller and Auditor General estimated that cancellation of the Benefits Payment Card cost over £1 billion in lost fraud savings, nugatory expenditure and write-down of assets and costs. The Public Accounts Committee and the National Audit Office drew a number of conclusions from the project's cancellation, including:

- The risks of the project were very high, because it was one of the first PFI projects and because it needed to join up the systems of two purchasers with differing objectives. Difficulties of managing these risks were underestimated.
- Pathway was selected because they were willing to take on a level of risk for preventing benefit fraud which the other bidders would not accept. Pathway came third (out of three bidders) on most of the management and technical criteria.
- When projects go wrong, management should face up to the costs of failure and take prompt decisions. It took 18 months from the point where the department took steps to preserve its right to cancel the project, to take the decision to do so. Meanwhile costs were rising and development of alternatives was stalled.
- It is not acceptable to sign a contract with fundamental 'agreements to agree' the detail of the service in the future. This contract was signed with 289 agreements to agree detail, some of which were still outstanding on cancellation of the project three years later.
- For major, mission-critical, tailored and bespoke projects, there should be proper piloting of technical solutions to address the full requirements. Departments may have to consider part- funding such requirements or awarding separate contracts for design and development before full implementation.
- Joint procurement is difficult, so it is better to let one purchaser take the lead.

Sources: *The Cancellation of the Benefits Payment Card project, Report by Comptroller and Auditor General, HC 857 July 2000*
The Cancellation of the Benefits Payment Card project, Committee of Public Accounts, HC 358, November 2001

In construction companies, project managers typically talk with their boss at least once a day, but this is true for less than a third of IT project managers.[34] If a project is likely to run over time or to fail to meet requirements, staff directly involved will know first, rather than senior management. So good communications are fundamental to managing risk, both between the supplier and department and up the management chain in each of these organisations. This should help to ensure that problems are brought to the attention of senior management early, when they can be more easily solved. However, this needs established and regular procedures for project managers and staff to report risk to senior management, and for senior managers to be receptive to communication about risk, including bad news.

Making projects smaller

Small, short-term projects are much more likely to be successful than large, extended exercises. Therefore, many analyses of IT failures suggest that large projects should be broken down into smaller modules (for example, taking less than 12-18 months); or introduced incrementally, so that limited functionality is provided first, then built upon. The McCartney report and OGC suggest that modular or incremental projects are:[35]

- easier to manage and specify
- simpler to implement
- able to offer more contingency options
- more likely to accommodate fast moving changes in technology, or in the political or financial environment
- able to offer more decision points to allow greater control of work.

Such an approach means that change can be introduced gradually, and if one of the modules fails to deliver on time or to budget this can be more easily rectified. Also, smaller projects allow a wider choice of suppliers and can enable a department to use small, innovative businesses that would not be able to bid for a larger contract.

Nevertheless, recent research across the public and private sectors found that more than a third of projects had budgets greater than £1m and a third had schedules exceeding 12 months. Indeed, 4% were termed 'mega-projects', with budgets greater than £50m, and the researchers suggest that organisations are taking on larger, rather then smaller, projects.[36]

Splitting large projects into smaller modules takes time and effort at the start of a project, and ensuring the different modules are correctly integrated and tested requires substantial resources. There is a risk that projects will be split into parts which perform an abstract function and cannot easily be checked by users or the client, rather than into small parts which match specific user requirements. In addition, the political process can favour large, expensive projects, which bring high profile announcements and 'new' funds. In some cases, it may not be possible to split projects, for example because they are driven by legislative change, or deal with a very large system (for example, the National Insurance Recording System 2, with 65 million records).

34 *From individual projects and programmes to organisational capability*, Chris Sauer and Christine Cuthbertson, Templeton College, University of Oxford, 2003
35 *Successful IT enabled business change: modular and incremental development*, OGC, April 2001
36 *UK project management is healthier than supposed, CW360 survey suggests*, Chris Sauer and Christine Cuthbertson, Templeton College, University of Oxford, 2003

3 Government initiatives

In response to the three key reports of 1999/2000 (see section 2.3), the government introduced a range of initiatives aimed at improving the success rate of IT projects. Recognising that there were still problems with IT project and programme delivery, in December 2002, the Cabinet agreed six key actions (see box below). Responsibility for all these initiatives now lies with the Office of Government Commerce. This chapter considers a number of key government initiatives and examines their effectiveness.

Key Actions agreed by Cabinet, December 2002

1. Establish Project/Programme Management Centres of Excellence in each department with a remit including its Agencies and Non-Departmental Public Bodies. These are now in place.

2. Accounting Officers to provide assurance that existing (pre go-live) and new major projects are not based on common causes of failure identified by the National Audit Office (see section 2.3).

3. Mandate no big-bang implementations and developments (i.e. modular, incremental developments and implementations) unless approved by central scrutiny group (e.g. Chief Secretary to the Treasury, Minister for e-Transformation, Office of the eEnvoy, OGC).

4. No government initiative (including legislation) dependent on new IT to be announced before analysis of risks and implementation options has been undertaken.

5. Force prioritisation of all existing and new projects as Mission Critical, Highly Desirable and Desirable.

6. All high risk and mission critical projects to have clearly identified (i) responsible Minister (ii) Senior Responsible Owner and Project Manager with good relevant track records.

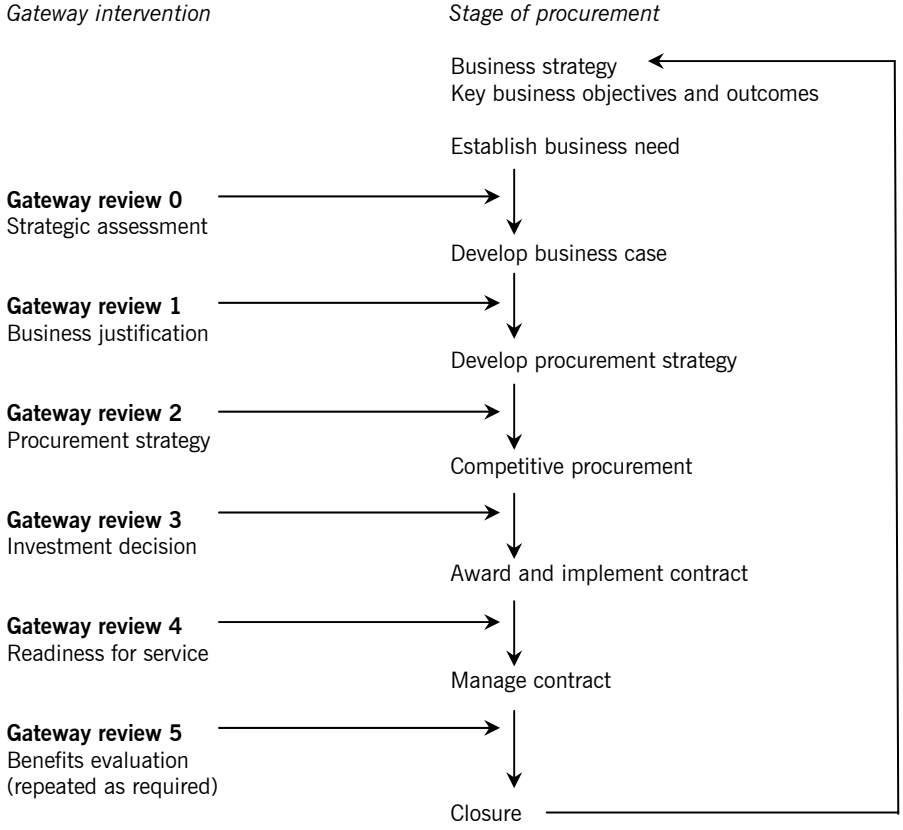
Source: OGC

3.1 Gateway reviews

Introduced in February 2001, Gateway reviews are applied to new procurement projects in civil central government, including IT projects. An independent review team of experienced people examines the project at key decision points (see the box on the next page), providing assurance that it can move to the next stage. The review reports are written for the project's Senior Responsible Owner (SRO) and are not in the public domain; this aims to ensure an open and honest exchange between the review and project teams. Recommendations are not compulsory - responsibility for action lies with the SRO and the project team, but failure to address problem areas will make it more difficult to pass the next review. Projects are given red, amber or green status:

- Red – to achieve success the project should take remedial action immediately.
- Amber – the project should go forward with actions on recommendations to be carried out before the next OGC Gateway review.
- Green – the project is on target to succeed but may benefit from the uptake of the recommendations.

The six Gateways



Source: OGC

There is no minimum financial threshold for reviews; rather, the need for a review depends on the risk associated with the project. The SRO tests the project against the 'Project Profile Model', a tool provided by OGC to assess project risk. If the project is assessed as high risk (is large, complex, etc.), the Gateway review team leader is appointed by OGC and the review team is independent of the department. For medium risk projects, OGC appoints the team leader but the review team is drawn from independent departmental staff. For low risk projects, both the team leader and members are from the department, but independent of the project. Departments can also instigate peer reviews of IT projects, outside the Gateway process, if required.

Gateway review teams are generally between three and five people, and the review takes 3-5 days; the report is given to the SRO before the team leaves the site. Review teams have access to all the stakeholders in a project, and for high risk projects Ministers and Permanent Secretaries are always interviewed. Over 500 Gateway reviews have now been completed, for projects worth over £60 billion, and the process is on target to generate more than £500 million per year in improved value for money. [37] The scheme is currently being extended to include NHS and Lottery projects, while pilots of Gateways for MoD procurement and for assessing the delivery potential of policy have been held.

Gateway 0 (see box above) is viewed by OGC as having had particular impact. It is compulsory

37 *The importance of programme and project management in successful delivery*, speech and presentation by Peter Gershon, 19 June 2003

and expected at the start of a programme and is recommended for high risk projects (see box on page 5 for the distinction between a project and a programme). Gateway 0 reviews the business need for a project; examines whether a project or programme of projects is required; ensures the project is supported by users; reviews the project and risk management arrangements; and checks that financial provision is in place. If a project does not support the departmental business strategy, it can be cancelled at this stage.

OGC collates the results of Gateway reviews, to identify trends and to synthesise lessons learned. These detailed analyses are not in the public domain. However, overall areas for improvement identified by the reviews were reported in June 2001 (see box below).

Areas for improvement identified by the Gateway process

Most reviews highlighted the need for three or more of these aspects (most frequently cited problems listed first):

- More appropriate skills. A shortage of IT and contract management skills together with insufficient involvement by senior managers.
- Better risk management. Including contingency arrangements in the event that the project failed or was delayed.
- Success criteria. Projects lacked quantified criteria for assessing success in terms of improvements in operational efficiency and quality of service.
- Need for stronger project management. The need to strengthen project controls, to have project boards meet regularly and to sign off key elements of the project before proceeding to the next stage.
- Better involvement of key stakeholders; particularly consulting the users of IT services to ensure that projects met their needs cost effectively.
- More market knowledge, particularly of factors likely to influence IT suppliers' performance and prior experience of managing projects.
- Better financial control.

Source: *Better public services through e-Government, Report by the Comptroller and Auditor General, HC704, April 2002*

Gateway issues

There is general agreement from commentators that the Gateway process is successful in its approach to business change, leading to suggestions that it should be applied more widely. Reviews are currently initiated at the request of the SRO, but EURIM has suggested that the Gateway process should be mandatory across the public sector[38], with follow-up reviews if procurement slips. Although review recommendations are not compulsory, in practice departments generally feel it is in their best interests to comply, and because OGC sees reviews as a customer service it would be reluctant to force agreement. However, it is possible for political pressures to override Gateway recommendations – so, for example, projects may not be cancelled if they are of high political priority, even if given several red lights.

Some commentators have also expressed concern over the extent to which the Gateway process can deal with difficult technical issues, as opposed to management questions. Further, the Gateway process is designed to start at the beginning of new projects, where greatest benefit will be obtained. Helping projects already in difficulty may need a different type of intervention.

There is a risk the process can lapse into 'box ticking', with the presence of the right documents being enough to reassure reviewers. As with all such exercises, the quality of the outcome depends on the quality of the review team and the decision criteria. Team members are typically required to have at least five years' experience in their specialisation, while for high risk projects

38 Similar processes are used by the private sector to assess investment or development proposals.

team leaders are normally of Senior Civil Service level, with a minimum of 15 years experience and a background in managing £100m projects. OGC has trained over 1500 staff as reviewers and each review team member is formally accredited.

Despite the introduction of the Gateway process, government IT projects continue to have difficulties (see boxes on the Libra project (page 10) and the Inland Revenue experience with tax credits (page 8)). However, because of the length of major projects, most were started before the Gateway process was introduced and went through only the later Gateway reviews after contracts had been agreed. It becomes more difficult to correct fundamental problems as projects develop. Therefore, OGC argues that the true value of Gateways will become more apparent over time, as major projects are completed that have been through all the gates.

3.2 The SPRITE programme

After the McCartney report, OGC established the SPRITE programme (Successful PRojects in an IT Environment) to support organisations in implementing the report's actions. The programme was closed in March 2003, as all the report's actions were assessed as achieved or underway – however, the specific projects established by the SPRITE team will continue within other parts of OGC. In addition to producing guidance on delivering successful business change and disseminating the lessons learned from Gateway reviews, key projects include:

- **Capability Assessment Tool** (CAT) - a spreadsheet which allows organisations to assess their capability in ten key areas (such as leadership, business change and risk management). The organisation can then use this to highlight its strengths and weaknesses, setting targets for areas to improve. All departments that undertake major IT projects are now using the CAT to carry out regular self-assessments. OGC analyses these across government to identify areas where further action is needed.
- **IT projects database** – a central database containing details of IT projects across government, including names and contact details of Senior Responsible Owners and project managers. It allows users to search for projects with similar characteristics to their own and so aims to promote learning and sharing of experiences and expertise between departments.

Other SPRITE projects – Senior Responsible Owners, the Senior IT Forum and the Implementers Network – are considered in more detail below.

3.3 Senior Responsible Owners (SROs)

A key recommendation of the McCartney report was that all major government IT projects or programmes should have a 'Senior Responsible Owner' (SRO), responsible for ensuring that the project meets its objectives and delivers the projected benefits. A member of senior management, the SRO should take personal responsibility for the project and remain in place throughout, or change only when a clear phase of the project has been completed.

The SRO chairs the project board, and also has responsibility for:

- ensuring that the project is subject to review at appropriate stages
- development of the project or programme brief, business case, organisation structure and plans
- monitoring and control of progress at a strategic level
- problem resolution and referral upwards to top management, Ministers or suppliers as appropriate
- formal project closure and post-implementation review.

OGC has developed two services to support SROs . The SRO Masterclass, run by the Centre for

Management and Policy Studies, is a one day course covering the SRO role and the Gateway review process. It has also become clear to OGC that some SROs need more personal, ongoing support, which is provided by the SRO Mentoring Service: a one-to-one, personalised package, potentially covering areas such as project organisation, risk, further training needs and determining responses to Gateway recommendations. Mentors are a mix of retired civil servants and independent consultants, and SROs are charged for the service.

Although the introduction of the SRO role has been welcomed, both within government and by suppliers, its effectiveness depends critically on the individual and their place within the organisation. This includes ensuring that SROs have the right skills, are of the right level of seniority and represent the service benefits of the project, rather than the IT department. Some critics have also suggested that SROs are too busy and too senior to have real impact on a project; rather, they see the project manager as the driving force. Others argue that SROs currently have a monitoring and reporting role, but question whether they have real accountability, suggesting that rewards for SROs should be explicitly tied to project success.

A complementary role for management in supplier organisations has now been proposed – the Senior Responsible Industry Executive (see below).

3.4 The Senior IT Forum

The Senior IT Forum was established following the McCartney and Intellect reports and is jointly sponsored by OGC and Intellect. Chaired by Peter Gershon (the OGC Chief Executive), the forum allows discussion of difficulties which occur in government IT projects, and comprises an equal number of senior managers from government and industry. The box below sets out the organisations that are represented. Although the forum has now been in place for three years, its industry membership has remained broadly constant throughout this period. The secretariat acknowledge that some rotation of members must occur at some point but how and when new members will be selected is not yet clear. Industry membership is currently drawn from the largest suppliers but smaller suppliers have also expressed interest in joining the forum. Others have suggested that the forum would benefit from a wider range of industry members representing other large, public-facing organisations, such as banks or shops, to give a different perspective.

Membership of the Senior IT Forum

Members of the Senior IT Forum are from the following organisations:

Government	*Industry*
Central IT Unit (NI)	Accenture
Criminal Justice Information Technology	Cable & Wireless
Department for Environment, Food and Rural Affairs	CSC
Department of Health	LogicaCMG
Department for Transport	EDS
Export Credit Guarantee Department	Fujitsu Services
Inland Revenue	IBM
Ministry of Defence	Schlumberger Sema
National Audit Office	Steria
Office of the e-Envoy	Syntegra (part of BT Group)
Office of Government Commerce (Chair)	Intellect

In October 2002, the forum launched three initiatives: the *Senior Responsible Industry Executive*; *Government Procurement Code*; and *value for money evaluation in complex procurements*. It is working on four further strands: *effective partnering*, *joint education*, a *supplier code of best practice* and developing the *foundations for business success*. Each of these is considered below. Intellect is also developing an online database of successful projects, highlighting examples of best practice which are agreed as successful by both the supplier and the customer.

Senior Responsible Industry Executive (SRIE)

This role aims to provide strategic direction and leadership in the supplier organisation, equivalent to the SRO in a government department. The SRIE is meant to be of similar status to the SRO and ensure that the supplier is focused on the *customer's* objectives. In particular, the SRIE has an important role in liaison with the SRO. Pilot projects in the Department of Health and the Met Office included workshops for SROs and prospective SRIEs, both before and after selection of the successful bidders, to help build relationships and address problem areas. The introduction of SRIEs has now been recommended for all significant government IT procurements.

Government Procurement Code

Published by OGC, the government procurement code is for all parties involved in procurement, including government, suppliers and sub-contractors. It aims to encourage all partners to work together more openly and co-operatively, and hence result in more successful delivery, reduced procurement timescales and costs, and better value for money. The code sets out a number of actions to be taken by government, suppliers or both, under four main headings: fairness; honesty and openness; efficiency and effectiveness; and professionalism. It is intended that all suppliers and departments will follow the code but where disputes arise they are referred to OGC or the relevant trade association. As with much guidance, it is not clear how compliance will be enforced – and it may have little impact on smaller suppliers who are not members of any trade association.

Value for money evaluation in complex procurements

Government defines value for money as, "*the optimum combination of whole-life cost and quality (or fitness for purpose) to meet the user's requirement.*"[39] OGC points out that this is rarely synonymous with lowest price. However, there is a general perception among suppliers that price of the initial bid is the overriding factor in government procurement, to the exclusion of whole-life cost, service quality, innovation and other less quantifiable aspects. This perception can lead to suppliers focusing on lowering costs, potentially decreasing the likelihood that the project will be delivered on time, to budget and at high quality. The Senior IT Forum therefore felt that unambiguous guidance would help those involved in procurement balance cost and quality over the life of a project and reduce supplier misconceptions.

Peter Gershon, OGC Chief Executive, wrote to all chief accounting officers in April 2002 announcing release of the guidance[40] and promoting the reasons for its use. The OGC Supervisory Board (including all permanent secretaries) has agreed that all complex procurements in central civil government should refer to the guide and confirm their compliance. The guidance covers issues such as leadership, openness and accountability. It also sets out 29 questions on value for money that the department should ask during the procurement process, under five headings:

39 *Government Accounting Chapter 22 – Procurement Policy Guidelines*, www.ogc.gov.uk
40 *Value for money evaluation in complex procurements*, OGC, March 2002

investment objectives and priorities; the supplier's capabilities; benefits; costs; and revisiting the business case throughout the procurement. Issues addressed include:

- The supplier's track record.
- Prioritising and weighting non-financial factors, such as deliverability, service quality, innovation, organisational culture, environmental issues, risk management and partnering. Suppliers should be informed of these criteria and their priority.
- Guidance that financial and non-financial factors should be assessed separately, and then brought back together in order to make a final decision. The mix of criteria and the weighting applied will vary depending on the project. However, methods for comparing financial and other factors vary, and weightings are necessarily subjective. For major investment decisions, the judgement between financial and non-financial factors is extremely important and should be made by the management board, rather than be a mechanical process handled by procurement professionals.
- Including extra costs, such as staff training, accommodation and full lifetime costs.
- Benchmarking to ensure value for money.
- Ensuring realism – whether the supplier can provide and maintain the service at this price, while making an appropriate return.

However, the key to changing supplier perceptions will be ensuring that departments follow guidance and that suppliers are informed of the rationale behind decisions.

Effective partnering

As described in section 2.7, the model for relationships between government and suppliers is constantly evolving. Understandably, while a department is focused on delivering service benefits, the supplier's focus is on delivering the specified system and making a reasonable profit. This can lead to an adversarial attitude, where each party uses the fine detail in the contract to justify opposing positions, potentially with costly legal implications. At present there is emphasis on 'partnering relationships', which aim to develop a close, long-term working relationship for ongoing services and new work, to increase innovation, enhance customer service, improve planning and allow the contract to adapt when circumstances change. This involves openness, putting the right (positive as well as negative) incentives in the contract, agreeing shared goals and good communication on both sides.

OGC guidance on partnering stresses the need for senior management commitment, clear benefits, a means for both sides to leave the partnership and contingency plans in case of crisis. Supplementary guidance from the Senior IT Forum is expected to be published in September, aimed at SROs and SRIES, to help them identify the attitudes and behaviours required to make a partnering arrangement work. It will recommend situations where partnering may be appropriate, but also warns that such relationships require additional work in order to be successful.

Partnering is not necessarily the right approach for every department. The Inland Revenue is about to conclude a partnership agreement with EDS, which will expire in 2004, and is currently conducting a competition to find a 'technology partner' for the following 10 years. In contrast, the Department for Work and Pensions is looking to increase competition and award contracts to a wide range of suppliers, who can deliver specific skills and competencies. Indeed, Peter Gershon recently told suppliers that, without improvements in the IT industry, partnering relationships would "*no longer be an option*", arguing that, "*The Public Accounts Committee currently starts from the view that partnering is a naïve public sector client taken for a ride by a supplier,*

where the winner is not the taxpayer."[41]

Partnering also holds risks of 'supplier capture' for the department. In particular, value for money can be compromised where new services are bought that have not been subject to competitive procurement. OGC stresses the need for an agreed pricing structure and the facility to benchmark any new work. Also, as the partnership comes to an end, other suppliers may be wary of bidding for the work, believing that the current partner has an overriding advantage. This is a problem that the Inland Revenue has had to face in their competition for a new partner. It has persuaded other bidders to compete, in part by agreeing to fund the costs of transition to a new supplier and funding £3 million 'design and implementation studies' from preferred bidders.

Joint education

The government and private sector environments are very different, with consequent difficulties in establishing understanding and partnership. To help overcome this, the Senior IT Forum has proposed that there should be opportunities for joint training, involving departments and suppliers (both in general and on particular projects). Industry members on the forum have identified suitable courses from the Successful Delivery Skills programme (see section 3.6), such as those on PFI and PPP.

Supplier code of best practice

This code will aim to help suppliers better understand the challenges of working with the public sector, and set standards to help them deliver successful programmes in partnership with government. It is expected that the code will have 'teeth', including mechanisms for redress, although how this will be implemented is not yet decided. The code will draw on best practice from other sectors and Intellect plans to consult on its provisions in the autumn, publishing the code itself at a Senior IT Forum conference on 8 December.

Foundations for business success

This area of work will have two main parts. Firstly, developing mechanisms for greater collaboration between senior civil servants and industry at the very earliest stages of projects, most notably prior to Gate 0. This would aim to play a role in ensuring that only realistic and feasible projects are taken forward. Secondly, the forum will examine the feasibility of increasing the transparency of bids, so that procurement teams are able to see what components contribute to the overall cost.

3.5 Sharing good practice

OGC has published over 2,000 pages of advice and guidance much of which is consolidated into a 'Successful Delivery Toolkit' available on the internet. Nevertheless, the OECD observes that many IT failures are a result of failing to comply with existing guidance or follow good practice[42] and OGC recognises that one of the key challenges is to ensure guidance is followed. In 2000, Intellect called for the adoption of good practice to be mandatory for public sector projects. The McCartney report agreed in part, arguing that central guidance and advice should not be universally prescribed, but that the onus should be on departments to justify any non-standard approach. Some commentators have suggested that there is much good practice within departments which is not included in current guidance.

The Implementers Network is part of OGC's efforts to ensure central government organisations

41 *Government tells industry to shape up or ship out*, vnunet.com, 2 April 2003
42 *The hidden threat to e-government: avoiding large government IT failures*, OECD, PUMA policy brief no. 8, March 2001

follow good practice. With 270 members representing over 80 public sector bodies, the network meets quarterly. As well as encouraging networking and sharing of best practice, the quarterly meetings include discussion of emerging issues, case studies and 'ask the expert' surgery sessions. Members find the opportunity to meet others and discuss issues in small groups most useful, but have suggested that some events be held outside London and would like continued industry involvement. In local government, the Society of Information Technology Management (Socitm) plays a key role in sharing best practice and has some particular strengths which are relevant to central government (see box below).

Socitm - sharing local government best practice

This report is focused on central government IT projects, in departments, agencies and non-departmental public bodies. However, a large proportion of public sector IT development occurs in local authorities, both to meet e-government targets and to manage day-to-day business. The Society of Information Technology Management (Socitm) is the professional association for IT managers working in and for the local public sector. With over 1,600 members from 450 organisations, including 95% of local authorities, it acts as a strong forum for producing and sharing best practice and providing advice on e-government.

In particular, Socitm has developed a set of key performance indicators, which allow comparisons between organisations' ICT functions; around 150 local authorities submit data on these regularly. Socitm can also provide a service for organisations to compare performance and develop improvement strategies. Socitm suggests that local authorities have particular strengths in several key IT delivery areas: splitting up large projects into small, easily identified deliverables; running and learning from pilot projects; learning lessons and sharing experience; and using commercial off-the-shelf software.

3.6 Skills for programme and project management

Across the private and public sectors, less than one in five project managers agree that their organisation has a well-recognised career path for project or programme managers.[43] In order to increase the incentives and to improve the career path in this area within government, the civil service is introducing a project and programme management specialism (comparable to current specialisms for economists or statisticians). The government plans to build up a register of civil servants with these skills, bring them together to share their experiences and offer advice on their training and career development.

Initially proposed by the Office of Public Services Reform, details of the specialism were announced by Peter Gershon in June 2003. It is a joint initiative between OGC and the Cabinet Office Corporate Development Group. Peter Gershon will head the specialism government-wide, while each department has also been asked to nominate a head. There will be an annual conference (the first of which will be held in October 2003), and an awards ceremony to recognise the performance of an individual, team and organisation. Full members of the specialism will be expected to have at least three years' relevant experience or qualifications. Although the specialism should help to raise the profile and standard of project management, it will remain important for project managers to gain experience of service delivery and vice versa. External commentators have also suggested that IT project managers should undergo extended IT-specific training, so they are more conversant with technology and better able to scrutinise suppliers.

OGC also runs the Successful Delivery Skills Programme, which will support the new specialism.

43 *From individual projects and programmes to organisational capability*, Chris Sauer and Christine Cuthbertson, Templeton College, University of Oxford, 2003

This includes: a skills framework, which sets out the skills needed by project managers and other delivery roles; tools for determining the strengths and weaknesses of individual and departmental skills; a training and development scheme; and a programme of continuous professional development.

Departments are also taking other steps to address the lack of project and programme managers. For example, the Department for Work and Pensions (DWP) has established a 'Project Professionals Group', which aims to ensure that all its staff involved in projects develop the necessary skills, expertise and professional qualifications.

In addition, Departments can set up inward and outward secondments and recruit external specialists, sometimes to very senior posts. DWP has recently recruited a new chief information officer, five information systems directors and eleven project managers from the private sector – needing to take advantage of the pay scale flexibility now permitted. Nevertheless, not all good private sector project managers translate these skills successfully to the public sector, where politics and public accountability are key drivers.

Training Ministers and existing senior civil servants in project management is also important if IT projects are to succeed. There are several senior civil service training courses which address leadership, delivery and SRO training, and senior civil service job weightings reflect project and programme management responsibilities. Similarly, fast streamers may be encouraged to undertake a project management delivery posting; fast stream courses are also available on project management skills.

3.7 Centres of Excellence

The 2003 report *Improving Programme and Project Delivery* from the Cabinet Office's Office of Public Services Reform recommended that each department establish a centre of excellence in programme and project management, which are now in place.[44] With an overall aim to produce a two to three fold increase in the success of central government projects within three years, the centres have three key roles:

- reporting to the management board on its key programmes and projects
- sharing information and lessons learned with Whitehall and other departments
- providing support to help delivery programmes and projects with the right expertise when they need it.

OPSR's report was influenced by a consultant's study that examined the effectiveness of programme offices. This found that the presence of a 'mature' programme office was strongly correlated with greater success delivering projects - 98% of organisations with a mature programme office reported a 100% project success rate.

The centres of excellence do not have to be a single unit, but departments must be able to demonstrate that any separate units (for example, in different areas) are 'joined up'. Among other outcomes, the centres will help to ensure that planning for delivery happens at an earlier stage in the policy process, so Ministers do not commit to new initiatives without analysing the risks to delivery (see recommendation 4 in the Cabinet actions to improve IT projects, page 18).

44 *Improving Programme and Project Delivery*, Office of Public Services Reform, February 2003

4 Overview

There has been much analysis of the reasons for the public sector's poor track record with IT, from inside and outside government. There are specific difficulties relating to IT services, such as difficulty in specifying requirements and complexity. However, analyses generally focus on more broadly applicable programme and project management solutions. Important factors for success include ensuring the IT project contributes to wider departmental objectives; capable leadership; good relations with suppliers; excellent project and risk management; and involving users in the project as early as possible.

Much government IT is now delivered by external suppliers, so it is vital that government is an intelligent client, even though this is costly in terms of time and resources. Departments need a range of skills to scrutinise bids, keep up to date with technology, be realistic about what systems are likely to deliver, understand commercial drivers and actively manage suppliers. Developing and maintaining these skills without in-house IT expertise is an ongoing challenge for government, although departments can bring in outside expertise to help.

OGC guidance stresses the importance of breaking down projects into manageable steps. This increases the chances of success and makes contingency planning easier. The Cabinet recently made a commitment to rule out 'big bang' developments, unless they are agreed by a senior central scrutiny group. However, government departments often have very large systems, which need to be re-developed at short notice due to policy changes - and it can be easier to obtain funding for large, high profile projects.

The government has introduced a range of initiatives to improve IT projects, such as Gateway reviews, Senior Responsible Owners and, most recently, key actions agreed by the Cabinet, including establishing Centres of Excellence. It also publishes large amounts of guidance. It is too soon to say with certainty how effective these initiatives will be, and it remains difficult to ensure guidance is followed by all departments and lessons of previous project failures are learned. The real test will come with the current round of large-scale IT projects, such as the £2.3bn national IT programme for the NHS.[45]

45 A POSTnote on NHS IT will be published later in the year.

Acronyms

BCS	British Computer Society
CAT	Capability Assessment Tool
CRAMS	Case Recording and Management System
DWP	Department for Work and Pensions
EURIM	Parliament-Industry European Information Society group (UK based)
ICT	Information and Communications Technology
IT	Information Technology
NAO	National Audit Office
OGC	Office of Government Commerce
OPSR	Office of Public Services Reform
OECD	Organisation for Economic Co-operation and Development
PAC	Public Accounts Committee
PFI	Private Finance Initiative
PPP	Public Private Partnership
PRINCE	Projects in a Controlled Environment
PROCAT	Public Records Office Online Catalogue
SOCITM	Society of Information Technology Management
SRIE	Senior Responsible Industry Executive
SRO	Senior Responsible Owner
SPRITE	Successful Projects in an IT Environment

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