BBC | Trust

The BBC's management of its Digital Media Initiative

Report by the Comptroller and Auditor General presented to the BBC Trust's Finance and Compliance Committee, 13 January 2011

NAO
National Audit Office

DEPARTMENT FOR CULTURE, MEDIA AND SPORT

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BBC Trust Response to the National Audit Office Value for Money study 'The BBC's management of its Digital Media Initiative'

Background to this study

As the BBC's governing body, the BBC Trust acts to get the best out of the BBC for licence fee payers. In part this means ensuring that the BBC continues to provide excellent value for money. We commission Value for Money investigations into specific areas of BBC activity to help ensure that licence fee payers are getting the best possible return on every pound of their licence fee.

Each year the Trust commissions a series of Value for Money reviews after discussing its programme with the Comptroller and Auditor General – the head of the National Audit Office (NAO). The reviews are undertaken by the NAO or other external agencies, reporting to the Trust. The Trust carefully examines the findings from each study and requires a full response and action plan from the BBC Executive explaining how it will take forward the specific recommendations made.

This study, commissioned by the Trust's Finance & Compliance Committee on behalf of the Trust and undertaken by the NAO, looked at the BBC's management of its Digital Media Initiative (DMI). The DMI is a major technology project that is intended to deliver efficiencies while also improving creativity and productivity. As with all significant projects, the Trust is under an obligation to ensure that the project represents, and delivers, value for money. In view of the importance of this project to the BBC, and the problems that the Trust was aware of concerning its progress, the Trust was keen for this Value for Money study to take place to identify any lessons that could be learned.

The Trust thanks the NAO for undertaking this review and for the report's conclusions and recommendations.

Our views on the NAO's findings

We have considered carefully the NAO's report and we accept its key findings.

The Trust considers that the DMI is a cutting edge project that will improve the way the BBC operates, leading to greater efficiencies of time, efficiencies of cost and by providing scope to increase creativity. By its nature, this was always a high risk project as there was no "off the shelf" technology available. However, we remain convinced that with the Salford Quays and Broadcasting House developments coming on line in 2012 it was right that we developed the DMI rather than install soon-to-be-obsolete technology. The non-financial benefits of the DMI are significant, and the financial benefits of the DMI, while important, are only part of the picture.

The Trust agrees with the NAO that the first phase of the project did not proceed according to plan. The BBC awarded the DMI contract to Siemens, the BBC's technology framework supplier. Framework agreements are intended to provide efficiencies, in part by reducing procurement costs and times. However, with hindsight, the decision to award the contract to Siemens did not lead to the planned outcome and resulted in a delay of 21 months to the project and hence a delay in the improved working practices.

It is difficult to conclude whether a more detailed assessment at the time and/or a competitive procurement process would have reduced the risk of this occurrence, as the inherent nature of IT projects means that they are complex and at high risk of cost overruns throughout both the public and private sectors. However, we accept that a detailed assessment of procurement decisions is a key area in project approval and we will require the BBC management to take note of the NAO comments in this respect when considering future business cases. The Trust notes, however, that the contractual agreement with Siemens did protect the BBC from direct financial loss (although not from loss due to delay).

Since bringing the project in-house, the Trust has been satisfied with the progress of the project. We note the NAO's recognition that the BBC has now started to deliver the DMI system and that users have been positive about the elements delivered. In the context of the DMI being a complex and cutting edge IT project, the Trust considers this is something of which the BBC should be proud. However, there is still some way to go to complete the project and we will be continuing to monitor progress.

Similarly, it is encouraging that the NAO has reported significant improvements in the way in which the BBC management has presented the more recent business case, particularly in respect of the anticipated benefits. We acknowledge the NAO's assistance in recommending improvements to the process of approval in its past studies for the BBC.

The Trust will now require the BBC Executive to provide a comprehensive action plan outlining how it intends to implement the NAO's recommendations. Where implementation is already in progress, we will require full details on the actions being undertaken. We will also require the Executive to consider how these points may have relevance for other BBC projects.

Specific Trust recommendation

The NAO makes a specific recommendation to the Trust concerning the referral thresholds. We consider that the referral thresholds as currently drafted are clear and have worked well to date, ensuring an appropriate balance such that the Trust is involved in strategic rather than the more routine operational decisions. However, we note the NAO's comments that these are narrow financial thresholds. We agree that we should review these referral criteria in light of the NAO's comments and consider expanding these to include significant changes to the cost-benefit of a project. The Trust will consider how best to implement this recommendation.

With specific regard to the decision to continue the project in-house in July 2009, the Trust is mindful of the important division between the Executive's operational responsibilities and the Trust's oversight responsibilities. The Executive Board and the Trust were kept informed of the status of the project through oral briefings, and both were satisfied that the BBC Finance Committee (which includes the BBC Director-General, the BBC CFO and the BBC COO) was an appropriate forum in which to take the decision as to how to continue the DMI given that the overall financial cost to the BBC was not increasing and the aims of the project remained as previously stated. However, the proposal to increase the scope of the project was rightly brought before the Trust in mid-2010.

Action plan

The Trust has discussed the recommendations with the Executive and considered its response, which is published in this document. The Trust is satisfied that the Executive's proposed actions are an appropriate initial response to the NAO's findings, but will require the Executive to provide a more detailed action plan for Trust review. Progress against this plan will be reported to the Trust.

BBC Trust
January 2011

The BBC's management of its Digital Media Initiative

BBC Executive Response to the National Audit Office Value for Money study 'The BBC's management of its Digital Media Initiative'

The BBC Executive welcomes this study, in which the National Audit Office (NAO) reviewed our management of the Digital Media Initiative (DMI).

DMI is a strategic investment in infrastructure, people and production processes that aims to support the realisation of the BBC's creative vision in the most cost effective manner possible. DMI will seek to transform the way the BBC makes content for its audiences. It will create a digital content production system that enables easy manipulation of content, effective sharing across locations, desk-top editing and access to the archive. The project covers hardware, software and running costs for eight years and replaces disparate legacy systems. It will provide a foundation not only for content flows across the BBC, but across the UK-wide sector as a whole. The media industry is moving towards this way of working and the BBC needs to keep pace with current digital technology, so investment in technology of this type is a necessary step in the evolution of programme making.

By investing in DMI, the BBC is making a significant commitment to strategic and operational requirements, including:

- The BBC's strategy, Putting Quality First (including re-investing savings in quality content, developing partnerships and strengthening digital public space).

- A 'networked' BBC built around sustainable centres of production across the UK.

- A pan-BBC digital archive.

- An end-to-end digital workflow and a solution for managing digital assets that would also help establish common standards in metadata in partnership with the industry.

In February 2008, the BBC entered into an agreement with Siemens, its strategic technology partner, for the provision of delivery of the DMI programme. This agreement was a call-off against the Technology Framework Contract (TFC) which was signed by the BBC and Siemens in September 2004. This is a 10-year outsourcing contract designed to deliver the BBC's technology requirements in an efficient and cost effective manner. The development of digital production technology was envisaged to be a key part of this relationship when the BBC selected Siemens as the most suitable strategic technology partner.

In summer 2009, after a number of delays to delivery of the programme, the BBC and Siemens reached a mutual agreement that allowed the BBC to take back ownership for the delivery of the DMI programme. Following evaluation of the available options and further financial approval, the BBC is now delivering DMI in-house, using internal staff, contractors and a range of third party suppliers.

The BBC Executive notes the recognition by the NAO that, despite the initial difficulties, the delivery of the programme is now well underway. A number of releases have been successfully delivered and initial feedback from users has been very positive.

Response to the NAO's recommendations

The BBC Executive has reviewed the NAO's recommendations, and notes that many are already in progress or have already been implemented in the latest phases of this project.

Recommendation a

The BBC did not have an up-to-date assessment of its contractor's capacity and capability to deliver the programme. The BBC assessed Siemens during a competitive procurement process in 2004 when it entered into a ten-and-a-half year Technology Framework Agreement with Siemens as the BBC's strategic partner responsible for its information systems. The BBC did not have to have a competitive procurement for the Digital Media Initiative as it could appoint Siemens to deliver the programme in a straightforward and quick procurement under that Framework. However, to provide assurance the BBC is not making procurement decisions on sub-optimal grounds, it should demonstrate in investment cases why its procurement route is likely to offer the best value for money.

The BBC fully agrees with the need to ensure that its contractors are very thoroughly selected and assessed through a process which involves open competitions when this is required or appropriate. The BBC Finance guidelines set out that "all procurements should follow best practice procedures to ensure value for money is achieved" by seeking early advice from our Procurement Department. Before its submission to the BBC Finance Committee, any investment case involving procurement aspects needs to be approved by the Director of Procurement, who is responsible for confirming, inter alia, that:

- The procurement (sourcing) strategy is appropriate for the particular tender and fits to the overall outsourcing strategy (this includes ensuring the appropriate evaluation including selection and award methodology).

- The procurement governance model and indicative timescales are appropriate and realistic for the services/goods being procured.

- The commercial deal ensures best value on a whole life basis.

When the BBC decided to use its long-term strategic technology partner Siemens to deliver DMI it did so having taken full account of the BBC financial guidelines and procurement procedures. The principal reasons for selecting Siemens in February 2008 were:

- Siemens had been selected as the BBC's strategic partner to provide better value for money, and to better meet its future technology needs. In signing the DMI call-off with them, the BBC complied with a recommendation made by the Committee of Public Accounts (PAC) that "technology services and commodities available through the technology framework contract are procured through the contract where they are available and offer better value for money than procurement outside the contract."[1]

- The BBC had fully tested Siemens' capability and capacity to deliver through assessments made as part of the TFC procurement.

- Siemens had a good understanding of BBC systems and experience of delivering projects with the BBC.

- The BBC had worked with Siemens (under the TFC) in defining the programme during 2007 and believed Siemens had a good understanding of the BBC's requirements.

- In 2007 Siemens had delivered a project requiring a broadly comparable skillset to Pacific Quay, the BBC's new building in Scotland, including tapeless workflow, HD production and use of a digital library.

- The BBC looked at other delivery partners and options but could not identify any better delivery model than using Siemens.

- The BBC estimated that procuring the programme as a call-off contract within the TFC and thereby avoiding open procurement could save the BBC six to nine months and costs of up to £3 million.

- External consultants were asked to advise on whether the Siemens price was competitive. They concluded that open competition could have generated a better price, but that any savings would likely be offset by the cost of having to integrate the new system with the Siemens-run BBC network, and delays in securing benefits.

The BBC therefore considers that, based on information available at the time, its appointment of Siemens to deliver the DMI programme was a sound decision, and fully compliant with procurement procedures in place. However, when the BBC saw that the contract was not delivering, it took steps to rectify the situation as soon as it could and minimise the loss of value.

1   http://www.publications.parliament.uk/pa/cm200607/
    cmselect/cmpubacc/1067/1067.pdf

Recommendation b

Although it took the Programme technology development in-house, the BBC did not test whether that was the best option. To manage risks and maximise the cost-benefit of investments:

● the BBC should promptly re-submit for approval those approved programmes where there are significant changes in the delivery model, risk profile or cost-benefit projection; and

● the BBC Trust should adopt referral thresholds based on the forecast cost-benefit of investments rather than a narrow financial threshold.

When the BBC realised the delivery of DMI was not proceeding as planned it made a number of distinct decisions over time. The first one was to take control of the programme and therefore responsibility for future decisions regarding the delivery of the programme. In doing this it was then able to assess in detail progress on the technical solution and establish the complete financial situation. This in-depth understanding was necessary to keep all options open and, subsequently, to complete a revised business case.

The BBC then considered all available options including (1) continuing the programme in-house (2) procuring from another supplier or (3) stopping the programme altogether. Due to the time critical nature of delivery versus time that would have been required to complete a full EU procurement; the desire not to delay benefits further and deteriorate the business case; and the fact that through working with a range of suppliers, it believed it had built up the necessary

expertise to complete the project; the BBC decided to take responsibility for delivering the project in-house.

Finally, the BBC decided the extent to which DMI should be rolled-out across the BBC. It looked at options from expanding the programme across all production areas to reducing it to support the new facilities in Salford only or even stopping the programme altogether.

The case was then thoroughly scrutinised and challenged at the BBC Executive's Finance Committee and Executive Board before Trust submission. The case was strengthened in response to requests, in particular around the non-financial and strategic benefits, as the Executive wanted to satisfy itself on this point before submission to the Trust. The BBC recognises that this took time, in particular to ensure the case was appropriate, which is recognised by the NAO.

The Trust Protocol on oversight of the BBC already sets out that "the Executive Board must submit revised financial proposals to the BBC Trust for approval where:

a   circumstances change significantly subsequent to the approval of a budget for a particular period of activity; or

b   the Executive Board wishes to vary approved budgets outside the limits set within the referral framework."

In addition, the BBC's investment policy states that business cases must return to the Finance Committee for additional approval if the costs or benefits over the whole life of the project change by the lower of £1 million or 10%.

It is for the BBC Trust to respond to the NAO's specific recommendation to amend the referrals thresholds, but the Executive would have no issues with implementing it.

Recommendation c

Without a proper understanding of the approach being followed by a contractor and the ability to intervene, the BBC will be unable to act as an intelligent client. The BBC should:

- commission independent technical assurance reports on system design when contracting-out software development;

- establish the minimum technical and management requirements for effective oversight of contracts on a contract-by-contract basis; and

- establish how and when it will be able to intervene to secure delivery of outsourced contracts rather than waiting for either contract non-delivery or termination.

The BBC agrees with this recommendation, and is already implementing it for new contracts. In particular, all investment cases submitted to the Finance Committee must demonstrate "how the contract governance structure allows for effective contract management".

Recommendation d

The financial benefits of the Programme were initially overstated. The BBC should continue to test the benefits projections with the rigour it showed in reviewing the revised investment cases for the Programme by:

- securing sign-up for benefits from those responsible for delivering them;

- reducing budgets to reflect projected benefits; and

- establishing baselines against which it can demonstrate savings.

The BBC agrees with this recommendation, notes recognition by the NAO of the rigour it applied to the revised June 2010 investment case, and will continue to strive to deliver appropriate business cases.

Recommendation e

There will be lessons to be learnt from the initial contract for the Programme. Although the BBC and Siemens had separate internal lessons learning reviews they did not share their understanding of the programme in a no-blame environment, even after they had settled the contractual dispute, to generate an agreed and comprehensive record of lessons learned. The BBC should invite Siemens to draw up a joint understanding of lessons to be learnt, not least because they have common business interests in the form of the Technology Framework Contract which runs until March 2015.

The BBC agrees with this recommendation, which it has in part implemented. It will continue to work with Siemens to ensure all lessons learned from the DMI experience are fully considered as part of the continuous review of services and methods of service delivery within the TFC.

Recommendation f

The technology system supporting the Programme has so far been shown to be valid but the BBC has not yet as at October 2010 put in place to the level required the full range of processes and controls that should allow it to complete the development of the technology to the planned time, budget and functionality. Specifically, it should:

- for its **technical solution,** complete the independent technical assurance of the design to provide a framework against which it can assess interdependencies and the impact of change control requests;

- for its **technology planning,** draw up more detailed team-based plans specifying resource requirements and responsibilities for each team;

- for its **testing,** document a testing strategy to embed the discipline of testing and increase the use of automated testing tools to improve efficiency and acceptability of new technology components; and

- for **supplier management,** ensure that the supplier management lead appointed in October 2010 sets out how he will secure early understanding of the delivery risks and potential mitigation posed by third party suppliers.

The BBC notes the NAO's finding that the technology system supporting the programme has been shown to be valid. The BBC is well aware that there are still many complex issues in the remaining deliverables, but is encouraged by the fact that the latest functionalities have all been successfully released to users.

The BBC agrees with the specific recommendations made by the NAO, which will yet strengthen its ability to deliver the programme, and has already taken steps to implement them, as follows:

- **Technical solution:** The programme has now put in place a complete set of architecture documentation, which allows the programme to determine interdependencies between components and to assess the impact of any proposed changes.

- **Technology planning:** The programme is now using "Release Managers" who are accountable for the delivery of each release, and development of detailed end-to-end plans with clear resource responsibilities. Progress towards these releases is reviewed on a regular basis in line with NAO recommendations.

- **Testing:** The programme produced a full testing strategy in December 2010.

- **Supplier management:** As recognised by the NAO, the BBC has already implemented this recommendation. Whilst the programme has always had a commercial lead in place, a supplier management lead has now been appointed. This function will grow, with the recruitment of three members of the supplier management team as further third party suppliers contracts are signed.

BBC Executive
January 2011

The BBC's Digital Media Initiative is a transformation project which is designed to allow BBC staff and partners to develop, create, share and manage video and audio content and programming on their desktop.

Contents

Summary

1   The BBC's Digital Media Initiative (the Programme) is a transformation project which is designed to allow BBC staff and partners to develop, create, share and manage video and audio content and programming on their desktop. It aims to reduce the time and cost of accessing and editing digital content and to foster creativity. The estimated gross cost of delivery and implementation to the end of March 2017 is £133.6 million.

2   The Programme is supported by a technology system (the system) which has to bind together production (where users manage the recreation of media content and need the latest creative digital media tools) and archiving (where users manage data storage, indexing and retrieval and require more traditional Information Technology and tools). Successful delivery of the programme is critical to the BBC's vision of staff across the BBC being able to create, share and access digital content to make better programmes more efficiently.

3   Our review was prepared under an agreement between the Secretary of State for Culture, Media and Sport and the BBC.[1] When the BBC Trust approved the Programme in January 2008, the system supporting it was due for delivery by the contractor by the end of May 2009. In July 2009, the contract for the system was terminated by mutual agreement and responsibility for delivering the Programme brought in-house. Given the Programme is one of the BBC's seven key cross-cutting programmes supporting the future direction of the BBC, we looked to see how effectively the BBC has been managing the Programme.

4   Our methods are at Appendix One.

5   It is important to understand how the delivery timetable, costs and benefits have changed over time. The planned and latest positions for the Programme are at **Figure 1**. The 2008 and 2010 costs and benefits are not directly comparable as the latest delivery plans involve much wider roll-out of the Programme across the BBC than the 2008 plans. All cost and benefit figures in this report are expressed in cash terms.

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1   The Broadcasting Agreement (July 2006) between the Secretary of State for Culture, Media and Sport and the BBC, clause 79(3).

Figure 1
Delivery Plans for the Programme

Planned timeline for when delivery of the Programme by Siemens was to be to 6 business units

January 2008
(approved by
the BBC Trust)

Investment cost £81.7 million

Planned benefit £99.6 million

July 2009
Contract termination

| 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |

Revised planned timeline for delivery of the Programme by BBC to 13 business units

June 2010
(approved by
the BBC Trust)

Investment cost £133.6 million

Planned benefit £97.9 million

September 2010
(latest position)

Investment cost £133.6 million

Planned benefit £95.4 million

■ System development   ■ Use of system by the BBC

NOTE
1   All cost and benefit figures are in cash terms.

Source: National Audit Office analysis

Key findings

The contracted-out stage of the Programme

6   The BBC did not run an open procurement competition before awarding to Siemens the contract to deliver the Programme. In February 2008, the BBC contracted with Siemens for the development, delivery and operation of the system supporting the Programme at a cost of £79 million to March 2015. As the BBC already had a ten-year Technology Framework Contract with Siemens, competitively procured in 2004, it did not need to go through a competitive process to appoint Siemens, although it was free to do so. It relied instead on Siemens's knowledge of the Programme, the assessment of Siemens made during the 2004 competition and its view that after looking at other delivery partners and options it had not identified a better contractor. As a result the BBC did not have as strong assurance on price, quality and capacity to deliver as a new and specific competition may have provided.

7   The BBC negotiated a fixed price contract with fixed delivery milestones with Siemens. This transferred the risk of cost escalation to Siemens. The contract provided financial protection for the BBC in the event of non-delivery against explicit delivery milestones, unless the BBC undermined this risk transfer by contributing to any delay.

8   When it became likely that the Programme would be delayed, the BBC worked with Siemens to get delivery back on track. However, the two parties did not reach agreement on the causes for the delay and the Programme never reached the User Acceptance Testing phase. Because of the contractual transfer of delivery and financial risk to Siemens, the BBC did not want to intervene in a way that would undermine that transfer of risk. The BBC's approach, even when it was concerned about the deliverability of the Programme, coupled with its incomplete knowledge of the system design, meant it was not in a position to develop a detailed recovery plan until the contract was terminated.

9   The contract with Siemens was terminated by mutual agreement with effect from the end of July 2009. As part of a no-fault settlement, the BBC reached financial arrangements with Siemens which allowed the BBC to allocate £27.5 million to meet the increased cost of completing the delayed Programme. This was funded through what the BBC and Siemens agree should be efficiency savings of £15 million and reduced service charges of £9.5 million, both within the overall Technology Framework Contract, a transfer of Programme assets (£2.2 million) and a payment to the BBC of £0.8 million.

10   At the time the contract was terminated, the BBC estimated the completion of the system would be 21 months later than originally planned. As a result, it did not achieve £26 million in benefits it expected from the Programme in the period 2009-10 to 2010-11. In response, the BBC, to meet its corporate savings targets, made compensating savings in 2009-10 and plans to do the same for 2010-11.

The BBC's in-house delivery stage of the Programme

11   The BBC took responsibility for delivery of the Programme in July 2009, accepting the risks of delivering the Programme, although without testing the value for money of this approach. When the contract with Siemens was brought to an end, the Programme was in difficulty and behind schedule; the delivery method was changing fundamentally, the challenge in terms of the BBC's in-house capability increased and the financial risks transferred to the BBC.

12   Despite the known difficulties, the BBC did not revisit the investment case at this point or test delivery options, such as finding a new contractor. It told us this was largely because of the time a full EU public procurement would take and the potential impact of further delay on other time-critical BBC projects. It considered that taking the programme in-house was the only solution and was achievable, although recognised that it did not, at that time have all the in-house capacity and capability necessary to deliver the Programme.

13   The BBC's in-house delivery of the system has started well but the complex stages to follow will be a severe test of its approach. The in-house team delivered the first two system components, on schedule, in February and June 2010, and early users have been positive about the impact. In September 2010, because of delays in defining procurement requirements, the delivery plan was revised, with the result that completion of the in-house delivery of the system would be delayed by a further five months. Since then the BBC has delivered a further two major system components on time against this revised schedule. The delays mean there is no time contingency left in the revised delivery schedule, although there is still £10 million of financial contingency available to mitigate risks to delivery.

14   The technology solution for the Programme has so far proven to be valid. However, at the time of our review in November 2010, the planning processes the BBC had put in place around the development and testing of the system were not then sufficiently rigorous to support the more complex integration of system elements as the Programme proceeds. The BBC has since made appointments and commissioned external assurance that should strengthen its processes.

The financial case for the Programme

15   The financial case for the Programme has weakened over time. The original cost-benefit estimate in January 2008 was a projected net benefit of £17.9 million by March 2015. These figures were based on implementing the system across six BBC business units. The latest forecast is of a net cost to the BBC of £38.2 million by March 2017 for a wider roll-out to 13 business units. This net cost falls to £10.7 million after taking account of the financial package agreed with Siemens.

16 When approving the revised business case in June 2010 the BBC Trust gave weight to the strategic benefits of moving the BBC more fully into digital technology and the non-financial benefits expected from the Programme, such as improved creativity and increased partnership working with other organisations and potential public access to the BBC archives. The BBC has no direct control over the delivery of those non-financial benefits which will not be delivered solely by the BBC, but has already signed memoranda of understanding with partners including the British Library to realise these benefits.

17 **There was a marked improvement in the June 2010 investment case approved by the BBC Trust compared with earlier cases.** Previous reports by the National Audit Office and the Committee of Public Accounts have highlighted weaknesses in the BBC's investment appraisals process. The final case had, unlike previous cases, full cost and benefit comparisons for scope options, as well as for a 'stop' option. The explanation in the final investment case of how benefits would be secured was an area of marked improvement, as a result of a more rigorous challenge by the BBC Finance Committee and the BBC Trust. However, in the context of a programme with delivery difficulties, and where the BBC was accepting the risks, the case would have been strengthened by independent assurance on costs and system design.

Conclusion on value for money

18 This conclusion on value for money looks at the Programme in two phases: the period when the Programme was contracted-out until the BBC brought it in-house; and how the BBC is managing the in-house delivery of the Programme.

19 The way in which the BBC appointed the contractor without a new competition and was then unable to intervene effectively in system development without undermining its transfer of financial risk to the contractor was not an effective way of approaching the delivery of a complex programme. While the BBC's financial arrangements with the contractor should allow the BBC to complete the Programme, the delay of 21 months and the £26 million in Programme benefits the BBC did not achieve in that period, and had to find elsewhere in the BBC, meant that the early stage of the Programme was not good value for money.

20 The Digital Media Initiative is a challenging Programme, but the BBC has now started to deliver the system and users have been positive about the elements delivered. There is still a considerable way to go in the development of a technically complex system which requires the integration of a number of interdependent elements without any time contingency. In addition, the success of the Programme will depend on take-up by users across the BBC and elsewhere. It is therefore too early to conclude on the likely value for money of the Programme.

Recommendations

a   **The BBC did not have an up-to-date assessment of its contractor's capacity and capability to deliver the Programme.** The BBC assessed Siemens during a competitive procurement process in 2004 when it entered into a ten-and-a-half year Technology Framework Agreement with Siemens as the BBC's strategic partner responsible for its information systems. The BBC did not have to have a competitive procurement for the Digital Media Initiative as it could appoint Siemens to deliver the Programme in a straightforward and quick procurement under that Framework. However, to provide assurance the BBC is not making procurement decisions on sub-optimal grounds, it should demonstrate in investment cases why its procurement route is likely to offer the best value for money.

b   **Although it took the Programme technology development in-house, the BBC did not test whether that was the best option.** To manage risks and maximise the cost-benefit of investments:

- the BBC should promptly re-submit for approval those approved programmes where there are significant changes in the delivery model, risk profile or cost-benefit projection; and

- the BBC Trust should adopt referral thresholds based on the forecast cost-benefit of investments rather than a narrow financial threshold.

c   **Without a proper understanding of the approach being followed by a contractor and the ability to intervene, the BBC will be unable to act as an intelligent client.** The BBC should:

- commission independent technical assurance reports on system design when contracting-out software development;

- establish the minimum technical and management requirements for effective oversight of contracts on a contract-by-contract basis; and

- establish how and when it will be able to intervene to secure delivery of outsourced contracts rather than waiting for either contract non-delivery or termination.

d   **The financial benefits of the Programme were initially overstated.** The BBC should continue to test the benefits projections with the rigour it showed in reviewing the revised investment cases for the Programme by:

- securing sign-up for benefits from those responsible for delivering them;

- reducing budgets to reflect projected benefits; and

- establishing baselines against which it can demonstrate savings.

e   **There will be lessons to be learnt from the initial contract for the Programme.** Although the BBC and Siemens had separate internal lessons learning reviews they did not share their understanding of the programme in a no-blame environment, even after they had settled the contractual dispute, to generate an agreed and comprehensive record of lessons learned. The BBC should invite Siemens to draw up a joint understanding of lessons to be learnt, not least because they have common business interests in the form of the Technology Framework Contract which runs until March 2015.

f   **The technology system supporting the Programme has so far been shown to be valid but the BBC has not yet as at October 2010 put in place to the level required the full range of processes and controls that should allow it to complete the development of the technology to the planned time, budget and functionality.** Specifically, it should:

●   for its **technical solution**, complete the independent technical assurance of the design to provide a framework against which it can assess interdependencies and the impact of change control requests;

●   for its **technology planning**, draw up more detailed team-based plans specifying resource requirements and responsibilities for each team;

●   for its **testing**, document a testing strategy to embed the discipline of testing and increase the use of automated testing tools to improve efficiency and acceptability of new technology components; and

●   for **supplier management**, ensure that the supplier management lead appointed in October 2010 sets out how he will secure early understanding of the delivery risks and potential mitigation posed by third party suppliers.

Part One

What is the Digital Media Initiative?

1.1   The Digital Media Initiative (the 'Programme') is the means by which the BBC aims to achieve its strategic goal of moving to more efficient and effective digital creation, archiving and sharing of content. The Programme has two components:

- **development of the technology system.** The aim is to link new and existing BBC systems to allow for the efficient transfer and use of digital files across the BBC using desktop computers; and

- **roll-out of the system in user Divisions.** Once the system has been developed, the aim is that it will help users make programmes and generate new outputs, such as interactive and online content, in new and more efficient ways, and support the creative use of the BBC's new and archived material (**Figure 2** overleaf).

1.2   To users the archive will offer searchable content and everything from whole programmes to sound clips and unedited material. The digitisation of the historic archive, which requires additional investment, is outside the scope of the Programme, and managed as a separate programme by the BBC. However, the Programme is an important enabler for the cost-effective digitisation of the archive.

1.3   Both the new system and changed ways of working to use the system are necessary to maximise the benefits of the Programme.

1.4   The BBC expects to realise both financial and non-financial benefits from the implementation of the Programme. Financial benefits will be in three areas:

- **cost reduction** – reductions in operating costs, brought about by more efficient production and archiving processes;

- **cost avoidance** – the avoidance of costs that would have been incurred in the future, if the Programme were not to be implemented, for example, the costs of developing 'local' alternatives to the Programme across the BBC; and

- **creative dividend** – the savings that could be achieved by making use of material in the Digital Archive rather than producing new content.

Figure 2
The elements of the Programme and the production process

Capture

Desktop production

Digital Archive

Editing facilities

Multi-platform delivery
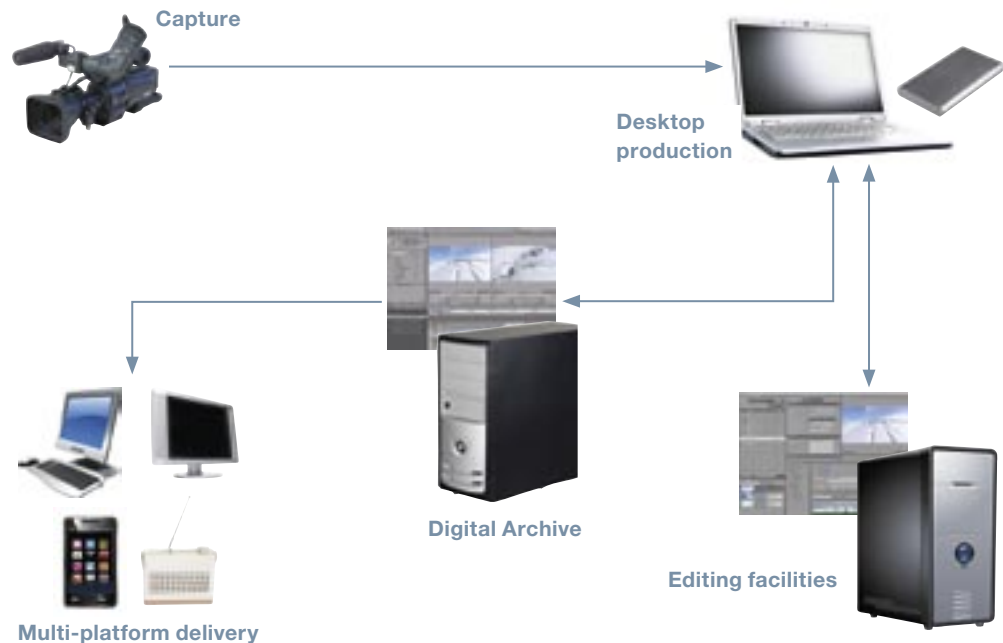
Source: BBC

1.5 The Programme is one of seven BBC-wide strategic programmes, enabling and supporting delivery of key BBC priorities including:

● the increased availability of material that can be used across the BBC's full range of outlets – TV, online, radio, interactive and iPlayer, and greater accessibility of digital content for audiences;

● the move of 2,400 staff to Salford. From May 2011, the BBC plans to start moving five of its divisions to Salford and the working practices there are built on the availability of the Programme; and

● the BBC's efficiency programme.

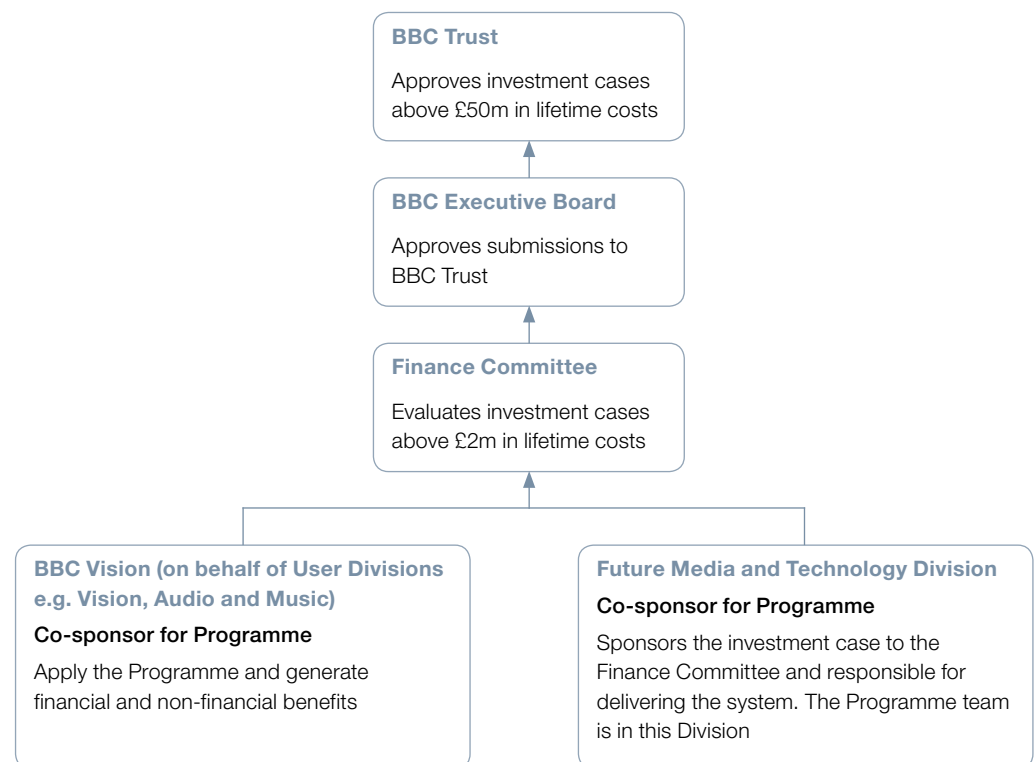**1.6** When initiating the programme in 2007, the BBC judged that the quick delivery of the Programme was essential. With the above dependencies all being time-sensitive, particularly the move to create a media hub in Salford, any delay in delivering the Programme would have knock-on effects, principally through diminished or lost financial benefits and a failure to move with audience expectations.

Responsibilities within the BBC for approving and delivering the Programme

1.7   The Programme is co-sponsored by two BBC Divisions: Future Media and Technology, which is responsible for developing the investment cases and securing investment approval from the BBC Executive and the BBC Trust; and BBC Vision on behalf of user Divisions, who are responsible for deployment of the system and for benefits management. The Programme team in the Future Media and Technology Division is also responsible for commissioning the technology system, rolling it out to users, getting them trained and prepared, supporting and maintaining it as an operational (business critical) service and securing the support of user divisions necessary for the benefits of the Programme to be delivered. **Figure 3** sets out the key players in relation to the Programme.

Figure 3
Financial and organisational responsibilities for the Programme

BBC Trust

Approves investment cases above £50m in lifetime costs

BBC Executive Board

Approves submissions to BBC Trust

Finance Committee

Evaluates investment cases above £2m in lifetime costs

BBC Vision (on behalf of User Divisions e.g. Vision, Audio and Music)

Co-sponsor for Programme

Apply the Programme and generate financial and non-financial benefits

Future Media and Technology Division

Co-sponsor for Programme

Sponsors the investment case to the Finance Committee and responsible for delivering the system. The Programme team is in this Division

NOTE

1   This report refers in most places to 'the BBC' as including all the above elements (apart from the Trust) and only exceptionally to the individual elements where such distinctions are necessary to understand actions and responsibilities.

Source: National Audit Office

What is this report about?

1.8 This report looks at three aspects of the Programme:

- The BBC contracted with Siemens in February 2008 to deliver the Programme and to support the operation of the system across the BBC until 2015. The contract was brought to an end in July 2009 (Part Two of the report).

- The BBC brought the delivery of the Programme in-house in Summer 2009 and is currently implementing and rolling-out early releases of the system. It has delivered some elements but the completion of the full solution has recently been delayed (Part Three).

- The strength of the approvals process and investment cases for the Programme (Part Four).
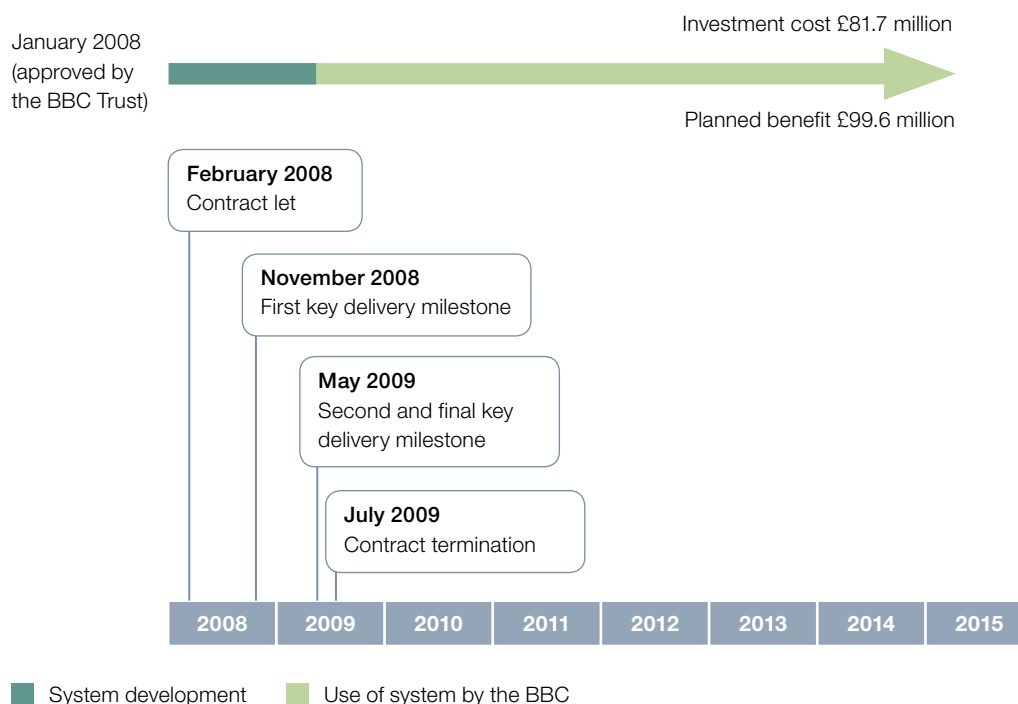
Part Two

The BBC's initial approach to delivering the Programme

2.1 In January 2008, the BBC Trust approved the investment case, proposed by the Future Media and Technology Division, for proceeding with the development of the Programme. The proposal was for developing and rolling-out the Programme to 6 of the BBC's 22 business units at an estimated cost of £81.7 million and projected benefits of £99.6 million to March 2015 (**Figure 4** overleaf). All cost and benefit figures in this report are expressed in cash terms. The Trust was provided with estimated full lifetime costs (£143 million) and benefits (£184 million), covering the development of the system and roll-out to the whole BBC but these were provisional estimates for information only. The Trust was not asked to approve the additional roll-out, as this was to be considered once the system development and early roll-out had been achieved.

Selection of the contractor to deliver the Programme

2.2 Competitive tendering is good practice and is normally a legal requirement for a contract of this size (£79 million). Competition allows the purchaser to compare potential suppliers' prices and technical proposals, as well as their capability and capacity to deliver. After an open procurement competition, the BBC signed a ten-and-a-half year Technology Framework Contract with Siemens in 2004 for the provision of technology services, which mentioned the Programme as a likely future project. Although this did not guarantee award of the contract for this particular Programme to Siemens, it meant that under the framework contract the BBC was able to award a call-off contract to Siemens without competition.

Figure 4

Original planned timeline for delivery of the Programme

January 2008
(approved by
the BBC Trust)

Investment cost £81.7 million

Planned benefit £99.6 million

February 2008
Contract let

November 2008
First key delivery milestone

May 2009
Second and final key
delivery milestone

July 2009
Contract termination

| 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |

■ System development   ■ Use of system by the BBC

NOTE

1   All cost and benefit figures are in cash terms.

Source: National Audit Office analysis

2.3 The BBC decided that the potential benefits of competition for the contract to deliver the Programme were not sufficient to outweigh the increased risk of delaying a key part of its corporate strategy and delivery of the benefits so did not run a new procurement competition for the Programme contract. The Programme team, on the basis of discussions with Siemens and other potential suppliers, considered that Siemens had the ability to deliver the contract 'to specification, cost and time' and set this out as an explicit assumption in the investment case for the Programme. The principal reasons for selecting Siemens in February 2008 were:

● Siemens had a good understanding of BBC systems and experience of delivering projects with the BBC;

● the BBC had tested Siemens's capability and capacity to deliver through assessments made as part of the Technology Framework Contract procurement. Although it had been four years since the Framework Contract was let, the BBC did not update its assessment when deciding to use Siemens for the Programme;

- the BBC had worked with Siemens (under the Technology Framework Contract) in defining the Programme during 2007 and believed Siemens had a good understanding of the BBC's requirements;

- the BBC considered that after looking at other delivery partners and options it could not identify any better delivery model than using Siemens; and

- the BBC estimated that procuring the Programme as a call-off contract within the Technology Framework Contract and thereby avoiding open procurement could save the BBC six to nine months and costs of up to £3 million.

2.4 Before submitting its investment case for the Programme to the BBC Trust, the BBC Executive asked external consultants to advise it on whether the Siemens price was competitive. The consultants concluded that open competition could have generated a better price, but that any savings (which were not quantified) would likely be offset by the cost of having to integrate the new system with the Siemens-run BBC network and delays in securing benefits.

2.5 Although good practice and the BBC's own Investment Guidance highlight the value of testing and comparing the cost and benefits of a range of options, in presenting the investment case for Trust approval in January 2008, the BBC did not offer any other options for delivering the Programme. The Trust therefore had the option of authorising the BBC to contract with Siemens or not undertaking the Programme. Without transparently testing and explicitly comparing the costs and benefits of other options for delivering the Programme, the Programme team was unable to demonstrate to the Trust that the chosen delivery course optimised value for money.

2.6 In February 2008, the BBC awarded Siemens a £79 million fixed price contract to design and deliver the system supporting the Programme by May 2009, and to support roll-out of the system until March 2015. The balance of £2.7 million in the approved budget was for BBC costs to support the Programme to the end of March 2015. **Figure 5** sets out the elements of the Programme to be delivered by Siemens.

Figure 5
The elements of the Programme to be delivered by the contractor
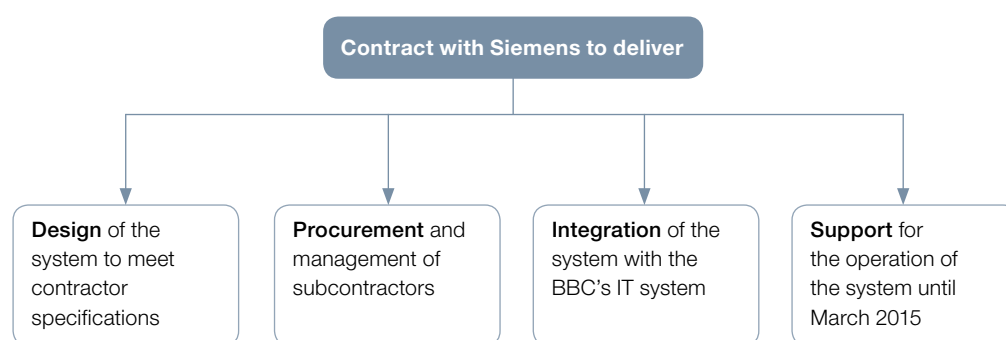
Source: National Audit Office

Management of the contract

2.7 The Programme is a BBC strategic priority and other key programmes are dependent on its timely delivery (paragraph 1.5), particularly the BBC's efficiency programme.

2.8 A key area for the contract was the specification of what the system should look and feel like to users. The contract included a 30 day 'elaboration' phase to be completed in March 2008. The purpose of the elaboration phase was for Siemens and the BBC to agree the user expectations for the Programme, which Siemens would then incorporate into the design phase. The elaboration phase was not completed until June 2008 delaying the start of the design phase and putting timely delivery at risk. In fact the two parties did not reach agreement on the detailed design for the system and the Programme never reached the User Acceptance Testing phase.

2.9 The contract specified two clear key milestones for the delivery of the Programme technology (Milestone 1 in November 2008 and Milestone 2 in May 2009). The BBC transferred to Siemens the financial risk of developing the Programme within a fixed-price contract, while retaining BBC sign-off of the outputs from the contract. Payments were dependent on delivery of the milestones.

2.10 From March 2008, one month into the contract, the BBC was aware that delivery of the first key milestone in November 2008 was likely to be delayed by three months (although it anticipated this was only a temporary delay). The BBC and Siemens worked together to get delivery of the Programme back on track.

2.11 In managing the outsourced contract, the BBC's knowledge of the adequacy of Siemens's design and development work, and therefore of the causes of any delay, was limited. The BBC did not have any independent technical assessment of the system, as would be good practice for system design, and until May 2009 did not seek access to the Siemens code supporting the system.

2.12 When it became likely that the Programme would be delayed, the BBC worked with Siemens to get delivery back on track. The BBC told us that, in line with its internal legal advice, it was keen not to interfere with or undermine the design and delivery of the system which was Siemens's responsibility under the contract. As a result of this approach and incomplete knowledge of the system design, the BBC was not in a position to develop a detailed recovery plan until after the contract was terminated.

Handling of the contract termination

2.13 In the period February to May 2009, the BBC's explicit goal was still to secure delivery of the system by Siemens, even though it would be later than contracted, while establishing, protecting and strengthening its legal position should the need to terminate the contract arise. The BBC and Siemens were in dispute over the reasons for the delay in delivering the Programme. To protect its position, the BBC:

● did not vary the key delivery milestones set out in the contract; and

● formally notified Siemens that 'time was of the essence' and set a final deadline for delivery.

2.14 In addition, the BBC began to assess its potential capabilities to deliver the programme in-house, were that option to be chosen at a later stage.

2.15 By June 2009, the BBC and Siemens had entered into 'without prejudice' negotiations to resolve the dispute arising from the late delivery of the project. The BBC entered into negotiations with Siemens with a clear target, approved by the BBC Finance Committee, of the amount the BBC required from Siemens (£25 million in cash and £10 million in non-cash benefits). It sought this sum to cover what it estimated to be the £20 million cost of completing the system supporting the Programme and to provide compensation. The BBC told us that while it had taken external advice on likely costs to complete the system development stage it had no documentation setting out independent assurance on the estimated cost to complete.

2.16 In September 2009, the BBC and Siemens entered into a no-fault settlement terminating the contract by mutual agreement with effect from 31 July 2009. As part of the settlement the parties agreed financial arrangements which allowed the BBC to allocate £27.5 million to complete the Programme, comprising;

● what the BBC and Siemens consider to be efficiency savings for some contracted functions within the Technology Framework Contract (paragraph 2.2) leading to £15 million in reduced service charges for the BBC over the period October 2009 to September 2013; both parties told us that these savings were possible as a result of their contractual agreement to changes to how services were delivered which enabled Siemens to deliver the same level of services in a different and more efficient way. The BBC is establishing a baseline against which it can consider whether there is any diminution in the service received in these areas;

● additional adjustments leading to a service charge reduction within the Technology Framework Contract of £9.5 million from Siemens to the BBC over the period October 2009 to September 2013;

● a transfer of assets related to the Programme valued at £2.2 million from Siemens to the BBC; and

● a cash payment from Siemens of £0.8 million.

2.17 The BBC Finance Committee approved the settlement value, although lower than originally sought, as covering its expected costs to complete system development for the Programme. The financial arrangement with Siemens did not however cover the £26 million of benefits that the BBC estimated it had not achieved due to the delay in the Programme. To meet the corporate savings target the BBC covered the lost Programme savings for 2009-10 through increased savings from other areas within the BBC and plans to do the same to make good the shortfall in Programme-related savings for 2010-11.

2.18 There is no absolute measure of whether the financial arrangements agreed with Siemens represent value for money for the BBC. They were the outcome of a process of negotiation, and there is no way of knowing how successful an alternative course of action would have been. But the BBC did take legal advice on the potential costs and risks of going through litigation, and reaching agreement meant the BBC could proceed with the development of the Programme without time-consuming and costly litigation which could also have adversely affected the overall relationship between Siemens and the BBC for the balance of the Technology Framework Contract (to March 2015).

2.19 The settlement was dependent on a confidentiality clause. BBC management agreed to the confidentiality clause in the settlement agreement to secure a cost-effective deal and the unencumbered development of the Programme. HM Treasury guidance discourages confidentiality clauses where they might prevent, or seek to prevent, public accountability and scrutiny of the use of public money. The confidentiality provisions expressly identify the National Audit Office as a 'competent authority' which the BBC told us it included in order to protect public accountability. The provisions require the BBC to 'in good faith'….'use reasonable endeavours' ….'to secure the non-disclosure' of the settlement agreement by a third party.

2.20 With the prospect of litigation not removed until the settlement was agreed in September 2009, the BBC and Siemens did not share information with each other about where improvements in contracting, designing and delivering the programme could have been made. Both organisations drew up internal lessons learned documents from their own perspective. However, there was no joint lesson learning even after the prospect of litigation had gone. As a result, even after the prospect of litigation had gone, the two organisations have no record of any shared understanding of where and how the programme had not worked and how problems could be avoided in future work.

2.21 The main service impact of the termination of the contract for the BBC was that by the Summer of 2009 it had effectively used up at least 18 months of delivery time without securing a working system. The BBC had contracted with Siemens for the delivery of the technology for the Programme by May 2009 but the BBC estimated that in practice it would be approximately 21 months after that date before it would have the functioning system fully available.

Part Three

The BBC's revised approach to delivering the Programme

3.1   In July 2009, the BBC decided to terminate the contract with Siemens and bring responsibility for delivering the Programme in-house, taking over the software development, contractor management, systems integration, system operation and maintenance roles previously contracted to Siemens. Taking delivery of the Programme in-house was a significant step for the BBC as it now carried the financial risk of developing and delivering the system. Without fully understanding, quantifying and mitigating those risks through a considered process at the time of this decision, the BBC could have exposed itself to further delay in achieving benefits and increased cost in delivering the Programme.

The decision to bring the Programme in-house

3.2   Before bringing the Programme in-house the BBC needed to be sure of its own capacity and capability. A review in February 2009 (before the Siemens contract was terminated) concluded that taking delivery in-house was the highest risk option, given the BBC's capacity and capabilities at that time, and one for which the BBC was not adequately prepared. The BBC did not re-run the capacity and capability exercise when deciding to take the Programme in-house five months later. However, before taking the Programme in-house:

- the BBC had taken steps to strengthen its Programme team;

- the new Chief Technology Officer (appointed in April 2009) had identified the practical issues to be managed in delivering the Programme in-house; and

- the BBC's Future Media and Technology division prepared a contingency plan for taking delivery of the Programme in-house, but acknowledged at the time that the plan was prepared without a full understanding of the technical and design issues that Siemens had encountered and that as it did not have the capacity or capability to deliver the system it would have to recruit or use a number of third party suppliers to fill this gap.

3.3　Despite a significant departure from the costs and benefits in the original investment case (paragraphs 3.5 to 3.9 below), the delivery responsibility and financial risks no longer being outsourced and the programme incurring a 21 month delay, the Future Media and Technology division, with the knowledge of the BBC Finance Committee, brought responsibility for delivering the programme in-house without any formal re-approval or revision of the strength of the investment case. The BBC considered that taking the programme in-house was the only solution. It took responsibility for delivering the Programme in-house because:

● it already had financial approval from when the Trust approved the investment case (to deliver the Programme through Siemens) in January 2008 (paragraph 2.1);

● it judged that delivery of the Programme was time critical and that a full EU procurement would take too long. The BBC's most pressing driver was the overriding need to have Programme technology available for Salford by May 2011 (paragraph 1.5);

● it had confidence it could do the development work within the existing budget and the money provided by the agreement with Siemens (paragraph 2.16); and

● any further delay to the programme would result in lost or delayed benefits above the £26 million already identified (paragraph 2.17), would lead to the loss of key project expertise, and would make the legal transfer of contracts more difficult or impossible.

The changing timescale, costs and benefits

January 2008

3.4　The original approval for the Programme from the BBC Trust in January 2008 was for roll-out to 6 of the BBC's 22 business units at an estimated cost of £81.7 million and projected benefits of £99.6 million to March 2015.

November 2009

3.5　By November 2009, when the Programme team submitted to the Finance Committee a revised investment case to reflect the increased costs associated with taking responsibility for delivering the Programme in-house, the estimated cost to complete the Programme was £105.1 million, £23.4 million (29 per cent) above the original £81.7 million. The increased cost was because of the need to develop the system for the Programme, although the BBC expected the financial settlement with Siemens would more than cover the estimated increased cost to the BBC. The estimated financial benefit had fallen from £99.6 million to £74.1 million because of the delay to the Programme. The November 2009 investment case was rejected by the BBC Finance Committee because the explanation of how benefits would be secured was inadequate. The Finance Committee asked that a revised case be re-submitted.

June 2010

3.6 In June 2010, the BBC Trust approved a revised investment case, which was for roll-out of the Programme on a wider scale than originally approved in January 2008. The gross costs were £133.6 million (£106.1 million net of the settlement with Siemens) and the projected financial benefits were £97.9 million to March 2017 (the investment case period was extended by two years to take account of the 21 month delay already incurred on the Programme). The main reason for the increase in costs and benefits compared with November 2009 was that the scope of roll-out had widened from 6 to 13 of the BBC's 22 business units.

3.7 The principal forecast financial benefits from the Programme are in three areas:

● Cost reduction – £51.1 million in reductions in operating costs, brought about by more efficient production and archiving processes.

● Cost avoidance – the avoidance of £29.8 million in costs that would have been incurred in the future, if the Programme were not to be implemented.

● Creative dividend – £17 million in savings by making use of material in the Digital Archive rather than producing new content.

3.8 With the estimated cost being £35.7 million higher than the estimated financial benefits (£8.2 million after taking into account the funds released after the agreement with Siemens), un-quantified non-financial benefits expected from the Programme were a crucial factor in the Trust's approval to continue. Maximising and securing the non-financial benefits is therefore vital for the success of Programme in the long term. The BBC identified the principal non-financial benefits as being:

● improving the quality of content;

● supporting the BBC's 'out-of-London' strategy by allowing digital content to be shared across the BBC and potentially building partnerships with, for example, the independent programme-making sector;

● giving BBC staff access to all the digital material in BBC archives; and

● working through Memorandums of Understanding with other organisations, such as the British Library, to develop common access standards which would eventually allow the public to access content regardless of source, subject to rights clearance. The BBC@BL initiative is a project to provide access to BBC archive material through the British Library's reading rooms, using the Programme's technology.

3.9 The BBC Trust challenged these non-financial benefits but accepted that they did offer the prospect of creative benefits. It also gave weight to the strategic benefits of moving the BBC more fully into digital technology for managing and sharing content and these factors allowed it to approve continuation of the Programme. Delivery of some of the non-financial benefits remains uncertain and outside the BBC's control where it is dependent on the actions or cooperation of other organisations although the BBC is discussing its Programme with those partners.

September 2010

3.10 By September 2010, the projected lifetime cost was unchanged at £133.6 million. However, £6 million of the £16 million contingency within that budget had been allocated and the system development phase had slipped by a further five months. As a result of the delay, the likely financial benefits had fallen by between £1 million and £6 million, with the most likely impact being a reduction of £2.5 million. Overall financial benefits would therefore fall to £95.4 million, £4.2 million (4 per cent) lower than when the BBC Trust first approved the Programme in January 2008 (when roll-out was to be significantly more restricted – to 6 business units rather than the current 13). So by September, the expected costs exceeded benefits by £38.2 million.

3.11 **Figure 6** sets out the BBC's projected timescales, cost and benefits as at January 2008 when first approved by the BBC Trust, November 2009, when re-submitted by the Programme team but rejected by the BBC Finance Committee, and June 2010 when re-approved by the Trust and in November 2010.

3.12 Two releases of system technology (Basic Archive and Basic Production Tools) were delivered on schedule in February and May 2010 respectively. Early users have been positive about the impact of having elements of the new system. By July 2010, the remaining release dates were changing as the BBC clarified delivery dates with suppliers, sought to reconcile procurement lead times with implementation plans and looked to deliver the agreed minimum requirements to support operations at Salford.

3.13 In August 2010, the BBC drew up a revised delivery schedule to complete delivery by July 2011, five months later than estimated when the BBC took the development of the Programme in-house in July 2009. Based on the revised schedule, it has since delivered on time the next two releases (Advanced Production Tools and Advanced Editing Tools) in September and December 2010.

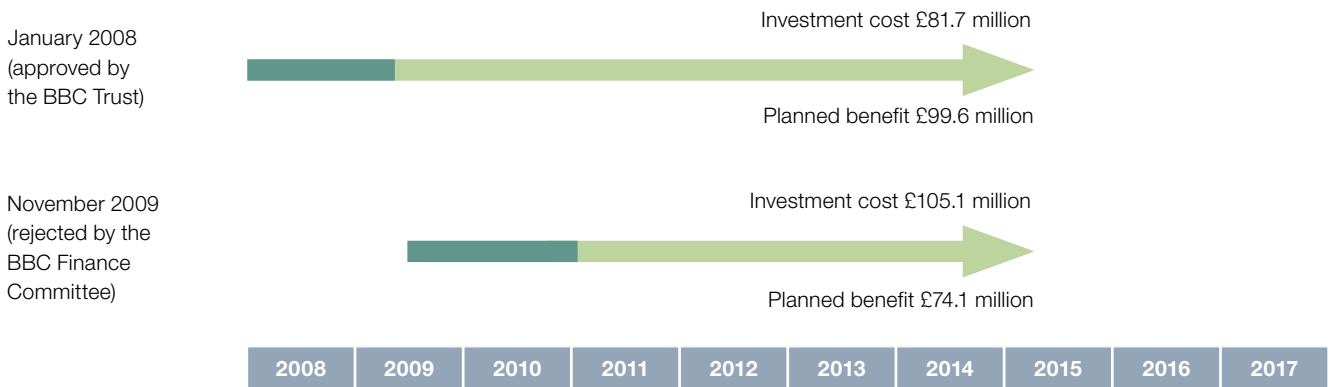## How the current approach is working to deliver the Programme and its benefits

3.14 In considering the lessons from the Siemens phase of the Programme, the BBC concluded that an approach with 'big bang' deliveries was not appropriate for this type of programme involving the development, procurement and integration of different technologies. It therefore adopted a more iterative 'agile' approach. This involves breaking down development into smaller steps, with quick feedback loops from users to improve the products being developed, alongside more structured milestone deliveries for the underlying infrastructure supporting the Programme. Instead of the two large 'big bang' releases the BBC commissioned from Siemens, the approach had 6 distinct stages for the release of technology to BBC user Divisions over a period of 16 months to February 2011, gradually increasing the functionality available to users as well as the number of users.

3.15 The 'agile' approach adopted by the BBC does not lend itself to straightforward reporting against performance milestones. The approach encourages flexibility in planning and delivery as feedback is received from users within an overall delivery timetable. This is both a strength and a risk for the approach.
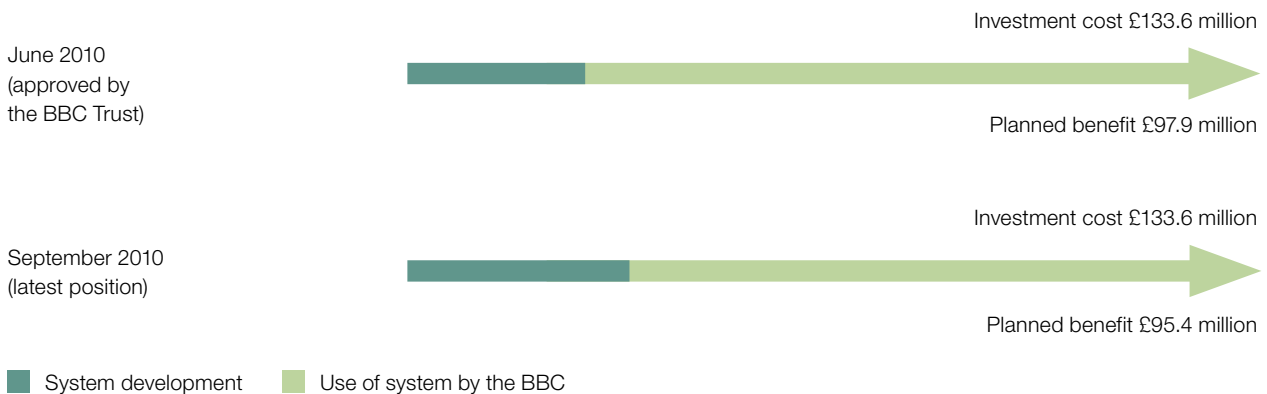
Figure 6

Planned timeline, costs and benefits for delivery of the Programme

Planned timeline for delivery of the Programme to 6 business units

January 2008
(approved by
the BBC Trust)

Investment cost £81.7 million

Planned benefit £99.6 million

November 2009
(rejected by the
BBC Finance
Committee)

Investment cost £105.1 million

Planned benefit £74.1 million

| 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |

Planned timeline for delivery of the Programme to 13 business units

June 2010
(approved by
the BBC Trust)

Investment cost £133.6 million

Planned benefit £97.9 million

September 2010
(latest position)

Investment cost £133.6 million

Planned benefit £95.4 million

■ System development   ■ Use of system by the BBC

NOTE

1   All cost and benefit figures are in cash terms.

Source: National Audit Office analysis

Challenges the BBC faces in completing the development of the Programme and securing the forecast benefits

3.16 It is industry good practice to obtain independent assurance reports to management and other internal stakeholders for technology programmes. The Programme team commissioned a progress review in January 2010. The BBC Trust later (June 2010) commissioned the same consultants to review progress. The second report found clear evidence of progress in areas of governance and programme management but noted that for the benefits to be achieved there needed to be increased engagement with stakeholders; the iterative approach to development needed more controls; delivery planning, forecasting and dependency management needed to improve; and the timing and content of the delivery releases needed reconfirming.

3.17 We used these reports as background for our examination as at November 2010 and identified the following key challenge areas that the Programme team will have to manage carefully as it continues in delivering the Programme solution:

- Technical Solution and Infrastructure.

- Planning.

- Supplier Management.

- Testing.

Technical Solution and Infrastructure

3.18 The Programme team has to bind together what the BBC has historically seen as very different business areas: Production, where users manage the creation of media content and need the latest creative digital media tools; and Archiving, where users manage data storage, indexing and retrieval and require more traditional Information Technology and tools. Because digital content is involved, both business areas need to manage and transfer significant data volumes using a mix of third party components and products over the BBC network.

3.19 There was rapid progress over the first part of 2010. The early programme releases have shown that so far the system fundamentally works, is feasible and able to meet the business requirement. However, the early releases are arguably the most straightforward to deliver. As the Programme advances, the challenge of integrating the different technology components and applying them in new user situations will increase.

3.20 A major risk for the Programme is the number of inter-dependencies that exist between the products and components that make up the full solution. Problems and delays caused in one area will impact others with the potential for a significant cumulative impact on the BBC as a whole. An example of this is the five month Programme slippage the BBC recognised in September 2010 (paragraph 3.10), caused by a delay in specifying and thus procuring one component of the archiving and search solution.

3.21 While the existing design documentation has proved satisfactory for the early product releases, improved architecture documentation and change control processes will lessen the risks of design errors as the Programme continues to be rolled-out.

3.22 It is standard practice in technical design to seek an independent technical assessment. Such an assessment should provide assurance that the design is valid, robust, and that the various aspects of the solution are both necessary and sufficient to meet requirements. There was no such independent technical assessment commissioned by the BBC during the first phase with Siemens, nor after the Programme was taken in-house. A technical assessment has now been commissioned in September 2010 and the BBC expects the findings to be available before the end of the year.

3.23 Dependence on the ability of the BBC's information technology network to cope with the volume of material generated by users of the Programme moving across the BBC's network has been flagged by the Programme team and external consultants as being a major risk. However, the Programme team is increasingly addressing this, through the use of detailed capacity planning using load simulations and has secured the agreement of the BBC's network supplier, Siemens, that the network will support the demands placed upon it.

Planning

3.24 Planning is critical to the timely and cost-effective delivery of any programme and allows measurement of the efficiency and effectiveness with which teams use available resources to achieve objectives. After a mid-development review of its approach in mid-2010, the Programme team recognised that it would incur a five month delay. The revised plan, if met, should deliver the minimum functionality necessary for the move to Salford although the planning process does not follow industry best practice for a programme of this size.

3.25 However, the revised plan gives no room for manoeuvre over release content or dates. There is some financial contingency (paragraph 3.10) but although the BBC has some scope to adjust supplier deliverables and move functionality between system releases, there is no time contingency. Specific weaknesses in the current approach to planning are that the plan:

- does not set out team-based resources and usage information. As a result, there is a risk that the Programme team of up to 180 people may not be the right size and may not have the right balance of skills;

- does not map into the release schedule and, combined with inconsistent use of terminology, this could lead to confusion about releases; and

- contains only limited information on the activities to be carried out by some of the third party providers leading to a risk of lack of visibility of progress.

Supplier Management

3.26 Development of the system relies heavily on third party products, such as editing software and databases, but until October 2010, the BBC did not have a full-time Supplier Management Lead in post. The BBC is managing this dependency by securing access to early versions of products. For example, one of the major Programme dependencies is the work being done by a supplier on the archiving function. The Programme team manage the risk of delay by having access to early releases from the supplier against which they are running tests on data transfer between systems. Nevertheless, the procurement and acceptance timetable for this area is very tight with little room for slippage.

3.27 There are supplier management risks that the Programme team needs to manage carefully, namely:

- for a number of third party suppliers the Programme plan only gives a date for agreeing a specification and a date for the final technology release from the supplier. Due to the high dependency on suppliers delivering the right product at the right time, closer involvement of the team with suppliers is required; and

- the European Commission procurement rules that the BBC must adhere to pose challenges to meeting the requirements of an iterative development process. Delays in ordering essential components account for the bulk of the five-month slippage during 2010 (paragraph 3.10). The BBC is managing procurement by running mini-competitions between existing BBC Framework Contractors (£42 million) and Office of Government Commerce Framework Contractors (£51 million), rather than a project-specific procurement competition. There are no open procurements in the current procurement strategy for the Programme. The impact procurement timescales remains a risk for the Programme's delivery schedule. The BBC recognises that value for money may not be optimised by this approach, as should be the case through an open competition, but considers the benefits of quick procurement outweigh the risks to value for money.

Testing

3.28 Thorough testing is central to software development. Without a structured approach to testing and the capability and capacity to plan and carry out such testing the Programme team risks delivering partially tested components with a high expected rate of failure. This would add the additional expense of fixing faults at a late stage in the process with serious damage to user confidence. The BBC has well documented processes for integration testing and user acceptance testing and has carried out such testing successfully on the technology released so far.

3.29 The main risks that the current approach to testing has are that:

- there is no documented Testing Strategy defining the test policy to be followed, although this is a priority for the recently-appointed Test Manager. Having such a strategy helps define the approach to testing and makes it easier to enforce a test discipline Programme-wide. This is particularly important in the iterative development process that the BBC has adopted, where testing has to be carried out regularly and repetitively through each iteration. Inadequate or incomplete testing could lead to further delays; and

- while manual testing has been adequate for the early releases, it will become progressively more difficult and time consuming as the Programme continues and inter-dependency between component parts of the system increases. Insufficient use has been made so far of the automated test tools that are available. Such test tools formalise the test process and automate difficult areas such as repetitive regression testing, which can then be completed as a matter of course.

Part Four

The preparation and evaluation of the BBC's investment cases for the Programme

4.1   Without rigorous processes for appraising proposed investment cases organisations do not test the value for money of proposed expenditure. The BBC has financial thresholds, above which spending decisions must be approved by Divisional Boards, the Finance Committee, the BBC Executive or the BBC Trust. The approvals processes are designed to ensure that proposals for significant spending are tested for costs, benefits, risks, dependencies, strategic fit and deliverability in advance of committing the BBC to a course of action.

4.2   In previous reports on the BBC the Committee of Public Accounts and the National Audit Office have been critical of aspects of the BBC's approval processes. **Figure 7** overleaf sets out the core elements we would expect to see in an investment case and how well the Programme investment cases addressed these. It shows an improvement over time in most areas.

Areas where there is evidence of improvement

4.3   In the period since the BBC decided to bring the Programme in-house, there has been evidence of greater internal challenge of spending proposals.

4.4   In November 2009, the Future Media and Technology division sought the BBC Finance committee's approval for a budget increase to be funded from the settlement with Siemens (paragraph 3.5). The Committee rejected the proposal: it was concerned that the Heads of Production in user Divisions were not sufficiently engaged with the Programme. It also wanted a re-assessment and re-validation of the benefits, which had been simply been rolled forward from proposals approved by the Trust in January 2008. To avoid further delay to the Programme, the Committee agreed that work could continue pending the review of planned benefits, but made clear that new costs incurred would have to be approved by the Committee.

4.5   The BBC Executive approved a new investment case in April 2010, including wider roll-out across the BBC. As the revised case had a budget increase of more than 10 per cent, the case needed BBC Trust approval and was submitted to the Trust in April 2010. In considering the revised investment case, the Trust wanted greater clarity on the deliverability of non-financial benefits and gave its approval in June 2010 (paragraph 3.8).

Figure 7
Did the BBC follow good practice in investment appraisals?

Core elements of an investment case	Criteria for 'Good' assessment	Jan 2008 investment case approved by BBC Trust	Nov 2009 investment case rejected by BBC Finance Committee	June 2010 investment case approved by BBC Trust
Option appraisal	A broad range of options are examined including a 'do nothing' or 'do minimum' option. Cost-benefit analysis has been carried out for each option, including a net present value calculation.	Weak	Weak	Good
An assessment of the full-life costs	All material direct and indirect costs have been examined. Costs provided are based on appropriate evidence and reasonable assumptions.	Fair	Fair	Good
An assessment of the delivery timetable of the programme	A delivery timetable is included clearly showing key delivery milestones. Timetable is based on appropriate evidence and reasonable assumptions.	Fair	Fair	Good
A benefits realisation plan	All material direct and indirect benefits have been examined. Benefits provided are based on appropriate evidence and reasonable assumptions. Description of when benefits will be delivered with named individuals signed up to their delivery.	Fair	Weak[2]	Good
An assessment of risk to the programme	All relevant risks were appropriately discussed and presented. Risks have been allocated and mitigating controls identified. Identified risks have been quantified (likelihood and impact have been assessed, including financial impact where possible).	Fair	Weak	Good

NOTES

1   The full assessment range is: Weak, Fair, Good, Excellent.

2   The November 2009 investment case explicitly recognised that its benefits realisation plan was incomplete and that further analysis would be required.

Source: National Audit Office assessment against industry good practice

4.6 The 2010 investment case showed improvements in terms of setting out options:

- the original January 2008 investment case set out three options: develop a centralised Programme (the 'preferred' option); deploy local, site-specific solutions in key locations; or, continue to allow the growth of mini, ultra-local Programme solutions (essentially the 'do nothing/stop' option). However, the costs, benefits and risk were presented only for the preferred option;

- the November 2009 investment case did not explore a range of delivery options; and

- by April 2010, the scope of roll-out had widened and the investment case now included Salford in a range of deployment options, including deployment to Salford only and a costed 'stop' option. However, given the time-critical Salford dependency and the fact that the Programme had started to deliver, it is not clear that this was a realistic option.

4.7 The articulation of intended benefits also improved in the 2010 investment case approved by the BBC Trust. Although the original 2008 investment case had categorised and quantified the benefits and given a broad indication of when they would be realised, the benefits had not been assigned to BBC executives responsible for delivering them and it was unclear how the benefits would be measured. Although the appraisal process does not in itself guarantee that the benefits will be delivered, the BBC made significant improvements in this area by June 2010 through:

- taking a systematic approach to revisiting the benefits;

- agreeing quantified targets with named benefit owners responsible for delivering the benefits. Potential savings which were not agreed by benefits owners, such as those projected for BBC WorldWide, were excluded from the cost-benefit case. Agreed savings were to be removed from Divisional budgets;

- re-validating the benefits with divisions and getting owners to sign up to delivering savings against a specific timeframe; and

- establishing a minimum basis for how most of the benefits will be tracked and measured.

4.8 The majority of financial benefits, £51.2 million, will be tracked via the BBC's current efficiency programme where Divisions are responsible for delivering savings and detailed plans for each Division are currently being established.

Areas where the BBC should strengthen its approach

4.9 Where a programme does not deliver as planned, it is good practice to revisit the investment case to confirm continued business justification and acceptability of the risks. The risk of not carrying out an investment review or in taking an incremental approach to continuing with delivery is that a programme becomes more and more embedded and alternative delivery options, including the 'stop' option, are no longer realistic.

4.10 When responsibility for delivering the Programme was brought in-house in July 2009, the Programme was in difficulty and behind schedule, the delivery method had changed fundamentally, the challenge in terms of the BBC's in-house capability increased and the financial risks transferred to the BBC. The Programme was taking on a very different shape from the one originally approved by the Trust. It would have been prudent for the BBC and the BBC Trust to revisit the investment case at this decision point. The Trust was not formally asked to re-review the investment case for the Programme until approval for additional funds for wider roll-out of the Programme was sought in April 2010 (paragraph 4.5). In particular:

- the BBC did not document the advice it received from consultants on the estimate of the cost to complete the Programme development at the time it took the work in-house (paragraph 2.15); and

- the BBC did not commission an independent assurance review of the system design until October 2010, over a year after it took the development work in-house (paragraph 3.22)

4.11 When the BBC Finance Committee gave approval in November 2009 for the programme to continue pending re-assessment of the benefits, there was no requirement to seek the BBC Trust's approval because the additional costs were to be met from the financial arrangements agreed with Siemens following the termination of the contract in July 2009. As additional BBC money was not required, the narrow financial threshold for Trust re-approval was not triggered. The Trust was aware of the plan to use the settlement money to fund the Programme, but the prudent course would have been to seek the Trust's formal consideration and approval.

Appendix One

Methodology

Method	Purpose
Review of the investment case for carrying out the Programme (2008) and the case for increasing the scope of the programme (2010) against recognised good practice.	Assess the investment appraisal and decision-making process behind the Programme.
Review of the Programme documentation including: • Finance Committee minutes and reports to the Finance Committee; • Steering Group minutes; • Programme Management Office reports on progress; • the contract between Siemens and the BBC for the Programme; and • external reviews of the programme commissioned by the BBC.	Assess and understand the programme management of the Programme.
Interviews with key stakeholders in the programme.	Assess and understand the programme management and investment appraisal process of the Programme.
Commissioned a review of the current position of the Programme and the risks it currently faces.	Assess and understand how the BBC has developed the technology for the Programme against industry good practice.