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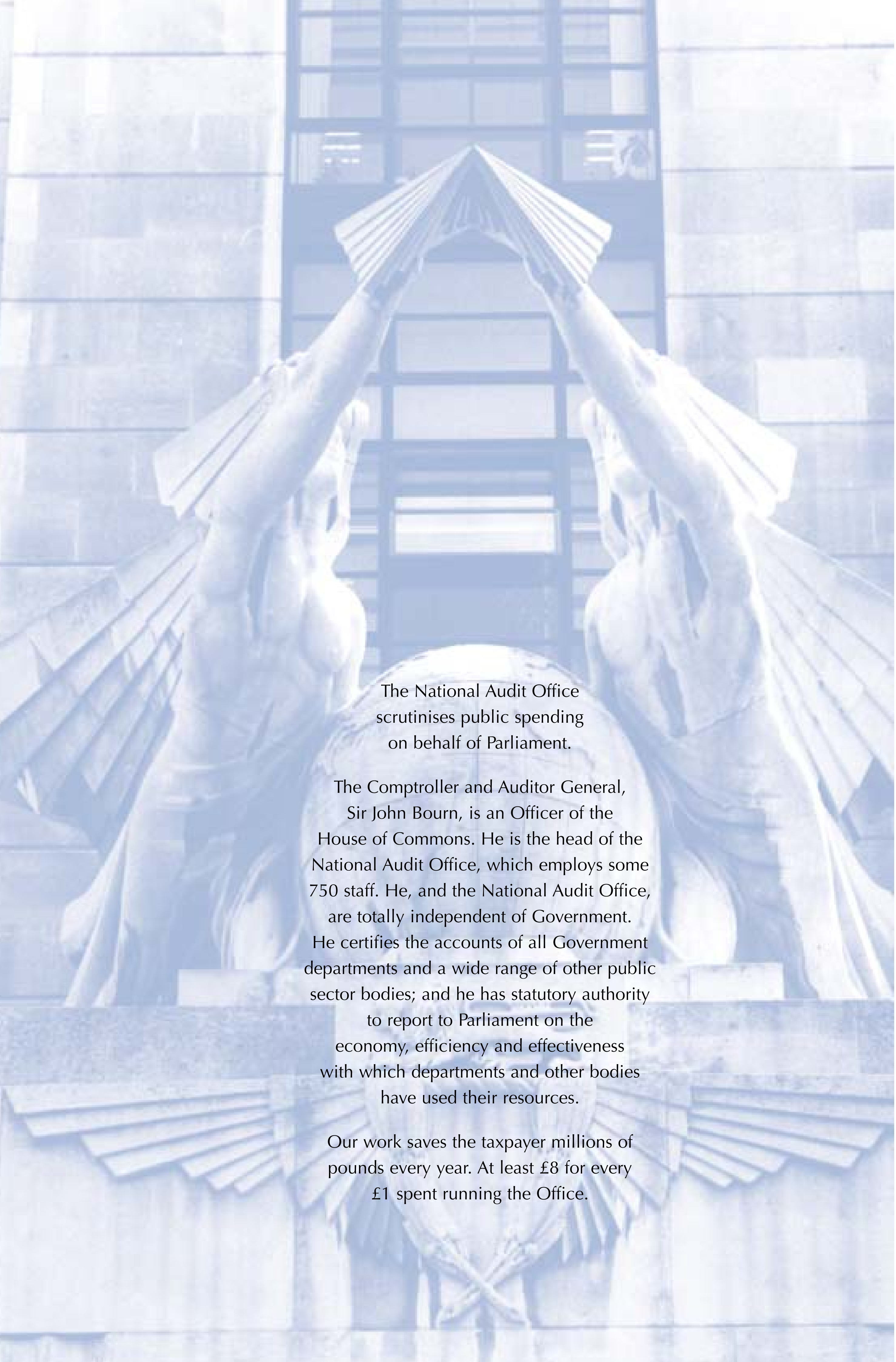
NIRS 2: Contract extension

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL
HC 355 Session 2001-2002: 14 November 2001



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John Bourn
Comptroller and Auditor General

National Audit Office
31 October 2001

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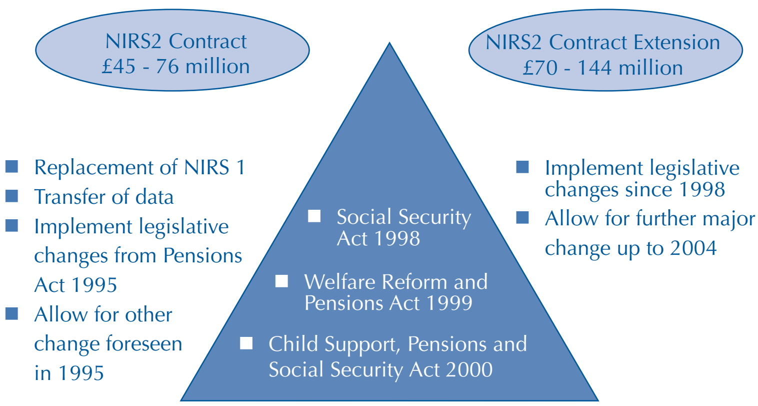
executive summary

1 NIRS 2 - the National Insurance Recording System - is a large and complex computer system designed to support the Inland Revenue's administration of the national insurance scheme. It was developed under the Private Finance Initiative to replace the previous National Insurance Recording System (NIRS 1). The Contributions Agency, then part of the Department of Social Security, was responsible for the development project. Following a competition, the Agency awarded the NIRS 2 contract to Accenture - then Andersen Consulting - in 1995. The contract covered the replacement of NIRS 1, transfer of data to the new system, development of the system to implement legislative changes arising from the Pensions Act 1995, and the operation of the new system until 2004.

2 In 1998 the Government proposed significant changes to pensions and national insurance legislation, for example to introduce stakeholder pensions and pension sharing on divorce. The Inland Revenue, who had taken over responsibility for NIRS 2 in April 1999 with the transfer of the Contributions Agency, negotiated an extension to the contract to cover the work needed to support these legislative changes. The original contract was valued at £45 million for operational services with provision for software enhancements increasing that to £76 million. The estimated value of the extension is between £70 million and £144 million, depending on the amount of work ordered over the remaining life of the contract. On the basis of development work ordered and planned to date, the Department's current estimate is for substantially less than £144 million **(Figure 1)**.

1 National Insurance Recording System contracts



3 We carried out a study of the extension to the NIRS 2 contract in order to ascertain:

- why the Department needed to contract for additional development work beyond the scope of the original contract;
- what options were available to the Department for carrying out the additional work, and how these options were evaluated;
- how the Department evaluated the proposal submitted by Accenture in the absence of open competition;
- whether risks were shared appropriately between the parties to the contract; and
- what steps the Department had taken to ensure that the problems arising under the original contract are not repeated during the course of the additional work.

4 We decided to issue this report for two reasons:

- to consider, on the basis of the NIRS 2 experience, the extent to which private finance initiative (PFI) contracts can provide the flexibility to accommodate changes in government programmes and practice that flow from government policy developments; and
- to review developments on the NIRS 2 contract with Accenture following our initial examination[1] and the subsequent reports by the Committee of Public Accounts.[2] NIRS 2 is a major project, supporting the Inland Revenue's administration of the national insurance scheme, holding details of 65 million national insurance contributors and calculating benefits and other amounts payable, such as state pensions. A project of this size and importance is a matter of continuing public and Parliamentary interest.

5 The report does not cover the implementation or operation of the original system, progress with which is being monitored as part of our annual audits of the National Insurance Fund account.

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1 *HC12, Session 1997-98*

2 *The contract to develop and update the replacement national insurance recording system (46th Report, Session 1997-98 (HC472))*
Delays to the new national insurance recording system (22nd Report, Session 1998-99 (HC 182))
National Insurance Fund 1998-99 (31st Report, Session 1999-00 (HC 350))

The original NIRS 2 contract proved insufficiently flexible in catering for the significant legislative changes to pensions and national insurance proposed by the Government in 1998

6 The original NIRS 2 contract included provision for system development work to meet foreseeable legislative changes. There was an annual limit to the quantity of system enhancements which could be ordered at the agreed price, based on the Contributions Agency's experience in operating the previous National Insurance Recording System. The pricing arrangements for system enhancements were finalised after the contract award.

7 In 1998, the government proposed changes to pensions and national insurance legislation on a scale which considerably exceeded the level expected when the contract was agreed. The Department of Social Security had provided advice to Ministers on the technical feasibility and costs of each of the policy changes. The implications of each policy were, however, assessed separately, and the Department's ability to assess the capacity of NIRS 2 to accommodate the overall package of changes within the proposed legislative timetable was limited by uncertainties about the initial stabilisation of the system, and the lack of clarity around the timescales for these changes. This meant that they were not in a position to establish fully the aggregate effect of the changes on NIRS 2.

8 At the point when the Inland Revenue took over responsibility for NIRS 2, it was unclear whether the contract contained sufficient headroom to cater for the development work needed. They therefore worked with the Department of Social Security, Accenture and EDS to determine the volume of new work required by the legislative changes, for which responsibility was now shared between the two departments, and the feasibility of delivering it through NIRS 2. The Inland Revenue concluded that the scale of the new work exceeded the contract limit and decided to examine how best to meet the commitments.

The extension of the NIRS 2 contract

9 The Inland Revenue looked at alternatives to using NIRS 2 to support the new legislative requirements, including clerical solutions and using other information technology systems. Most of these were rejected because they were not technically feasible or likely to involve greater risk or cost than enhancing NIRS 2. They concluded that NIRS 2 was the most practicable option for some 80 per cent of the work required.

10 The Inland Revenue had three main contractual options for commissioning the new NIRS 2 development work:

- to negotiate a contract extension;
- to ask Accenture to provide the additional resources required at Department of Social Security framework rates, under the original contract terms;
- to exercise the break clause in the original contract and hold a new competition for the continuing operation and development of the system.

11 They opened discussions with Accenture about extending the contract. In response, Accenture offered to deliver all development work using a dedicated software support facility. Doing this and introducing longer-term planning of resource requirements would enable them to offer a lower price for enhancements than the Department of Social Security framework rates, which were the alternative charging mechanism.

12 The Inland Revenue then commissioned PA Consulting to develop a financial model to compare the cost of Accenture's proposals with that of using alternative suppliers. The work showed that Accenture's unit costs compared closely with the comparators, but breaking the NIRS 2 contract would have incurred additional costs estimated at £44 million. The results therefore supported the option to extend the contract with Accenture.

13 In addition to the financial evaluation, the Inland Revenue assessed Accenture's ability to deliver software of the required quality, the firm's commercial stability, legal, commercial and security issues, the legislative timetable, and the scope to improve their management of development work. After taking these factors into account, as well as a technical review of NIRS and latest Treasury guidance the Inland Revenue concluded that a contract extension provided the best option for meeting the legislative requirements in the timescale required.

14 The Inland Revenue used the extension to the contract to introduce new operating arrangements to resolve difficulties arising on the original contract which had contributed to delays in implementing the system. In doing so, they obtained legal advice that the extension complied with European procurement rules in all respects other than that the new payment arrangements to improve their control of development work did not strictly adhere to the terms of the original procurement advertisement. The advice recognised that this might give rise to claims for compensation from other suppliers, but that the risk of challenge was extremely low. However, the alternatives would not have allowed them to meet the timetable prescribed by new pensions legislation, which was already in force. They decided to proceed, as they considered that the costs of delaying the work programme and the advantages of the revised arrangements outweighed the risks attached to not complying fully with the procurement rules.

15 Under the new arrangements, Accenture continue to bear risks relating to the operation and availability of the system. The risks associated with system enhancements, however, are shared to a greater extent than under the original contract. The contract extension has introduced stage payments linked to the achievement of milestones, productivity incentives, and profit sharing arrangements.

16 The Inland Revenue have recognised that, in any relationship of this kind, it is not possible to transfer the business risk of non-delivery to the contractor. They have therefore strengthened arrangements for managing delivery risks by introducing their own project management methodology to the contract. This includes a system that ensures developments to the system are managed as a series of projects, which are overseen centrally and allocated a specific release date linked to the legislative timetable. There are joint working arrangements to secure increased collaboration and acceptance criteria are defined more clearly than before. The management arrangements for the contract extension correspond closely to subsequent government guidance on risk management in PFI contracts and IT projects.

17 The Inland Revenue and Accenture consider that their relationship has improved since the contract extension, due to the introduction and operation of partnership principles. Both sides describe the current relationship as open, trusting and effective in managing the contract, and have seen advantages accruing since the new arrangements were introduced. System changes required to support pensions sharing on divorce, changes in bereavement and incapacity benefits and the restructuring of national insurance contributions have been delivered successfully. The Inland Revenue reported that the NIRS 2 service had improved significantly since the new arrangements had come into operation and user satisfaction increased substantially. In the 12 months to 31 March 2001 service levels had consistently exceeded target performance and 2 major releases of high quality software had been made on schedule.

Conclusions and recommendations

18 The key points arising from our examination are as follows:

On the need for an extension and the lessons for Departments

a The original NIRS 2 contract between the Department of Social Security and Accenture included flexibility to cater for legislative change then planned, an agreed annual volume of additional development work and routine enhancements. But the scale of change arising from new legislation in 1998 was considerably beyond the level expected when the contract was agreed, and exceeded the levels allowed for in the contract. *Departments should consider whether contracts should include specific mechanisms to deal with major enhancements of this nature. This might involve the reintroduction of competition or inviting the bidders to propose a separate pricing structure for major enhancements as part of the initial tendering process.*

b The Department of Social Security did not assess the aggregate impact of the proposed policy changes and their timing on NIRS 2 development capacity. At the point when responsibility for the system was transferred to the Inland Revenue, neither Department had a clear view of whether there was the technical or contractual capacity to deliver the changes using the system. *In advising Ministers on the implications for existing information technology systems of fixing deadlines for major legislative change, Departments need to understand the impact on their systems, individually and in aggregate, and develop strategies to manage the resulting risks.*

c When the original NIRS 2 contract was concluded in 1995, there was little experience of the Private Finance Initiative and none in the field of information technology. An information technology procurement contract of this scale and complexity presented challenges in estimating the size of the requirement and developing pricing strategies which had not arisen in other Private Finance Initiative deals at the time. The Government have produced substantial additional guidance on such arrangements since 1999, in the light of experience with this and other contracts, which includes the following advice:

- *Change control, and similar procedures should be agreed at the outset and allow open discussion about the volume and cost of developments. Contracts should set out clearly how acceptance will be defined.*
- *Departments should avoid agreements to agree in key areas of contracts.*

The latter point is particularly important because attempts to conclude such agreements may be complicated, difficult and expensive and, in the extreme, may result in a material diminution in the value of a contract to a Department.

On the contract extension

d A contract extension offered better value for money to the Inland Revenue to deliver the required enhancements within the timescale required than the alternatives available.

e In deciding to implement the new contractual arrangements, the Inland Revenue took into account legal advice that the new payment arrangements might leave them vulnerable to claims for compensation. As the risk of challenge was extremely low they decided to proceed in order to meet the proposed timetable for new pensions legislation and to secure improvements in their control of development work. *Legislative timetables should be set so that Departments can implement changes while complying with other legal requirements.*

f The Inland Revenue contract management arrangements for the extension adhere closely to current guidance on risk management in PFI contracts and information technology projects. Had this guidance been available at the time, it would have led to contractual and operating arrangements considerably different from those originally adopted for NIRS 2. Risks associated with enhancements to the system are shared to a greater extent than under the original contract. The new arrangements have achieved improvements in the relationship between the parties and in the delivery of system enhancements, addressing weaknesses identified by the Committee of Public Accounts.

Part 1

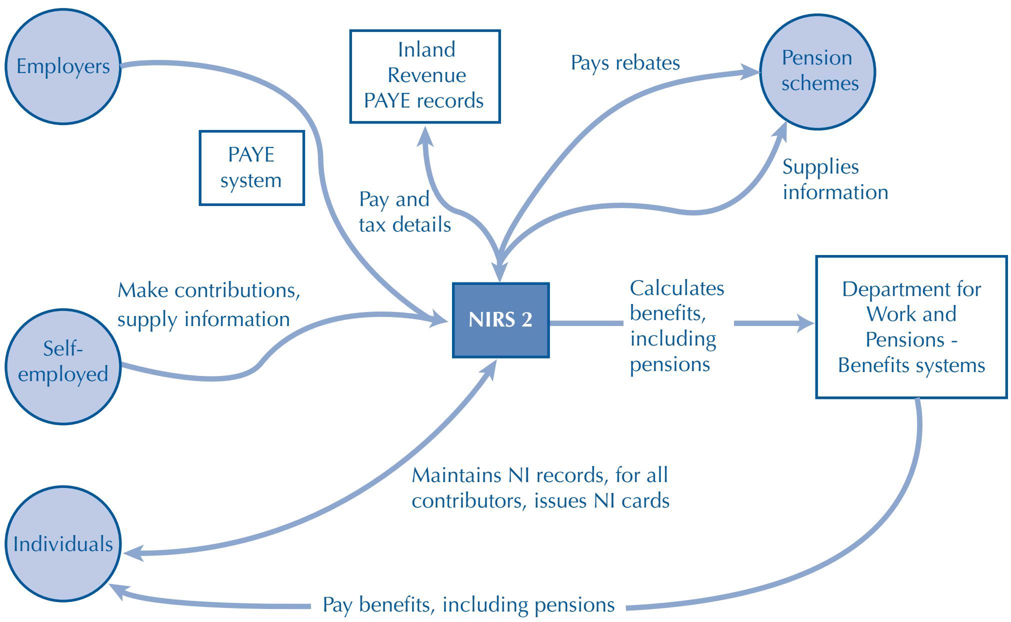
Introduction

1.1 This report is about an extension to the Inland Revenue's contract with Accenture to develop and operate the NIRS 2 computer system. The extension, which was approved in April 2000, covers development work not envisaged when the original contract was signed. It will increase the overall value of the contract by between £70 million and £144 million, depending on the amount of work ordered. The current estimates are for substantially less than £144 million.

1.2 NIRS 2 - the National Insurance Recording System - is a large and complex computer system designed to support the administration of the national insurance scheme. It holds details of some 65 million individual national insurance contribution records. This information is fundamental to the accurate calculation of contributory social security benefits, such as retirement pension. It also underpins payments to pension schemes in respect of contributors with contracted out personal pensions. In 1999-2000, the Inland Revenue collected over £50 billion in national insurance contributions and the Department of Social Security (now the Department for Work and Pensions) paid out £46 billion in contributory benefits, based on records held on the system. **Figure 2** provides a summary of the main functions of the system.

1.3 The NIRS 2 system was developed under the Private Finance Initiative to replace the existing National Insurance Recording System (NIRS 1). The development project was the responsibility of the Contributions Agency, then part of the Department of Social Security. In 1995, following a competition, the Agency awarded the NIRS 2 contract to Accenture - then Andersen Consulting. The contract was valued at £45 million for operational services with provision for software enhancements until the contract expired in 2004 increasing that to £76 million. It covered the replacement of NIRS 1, transfer of data to the new system, development of the system to implement

2 NIRS 2 main functions and interfaces



Source: Based on Inland Revenue description of NIRS key functions legislative changes arising from the Pensions Act 1995, regular enhancements to the system, and the operation of the new service until 2004. We reported to Parliament on the competition in our 1997 report *The Contract to Develop and Operate the Replacement National Insurance Recording System*.[3]

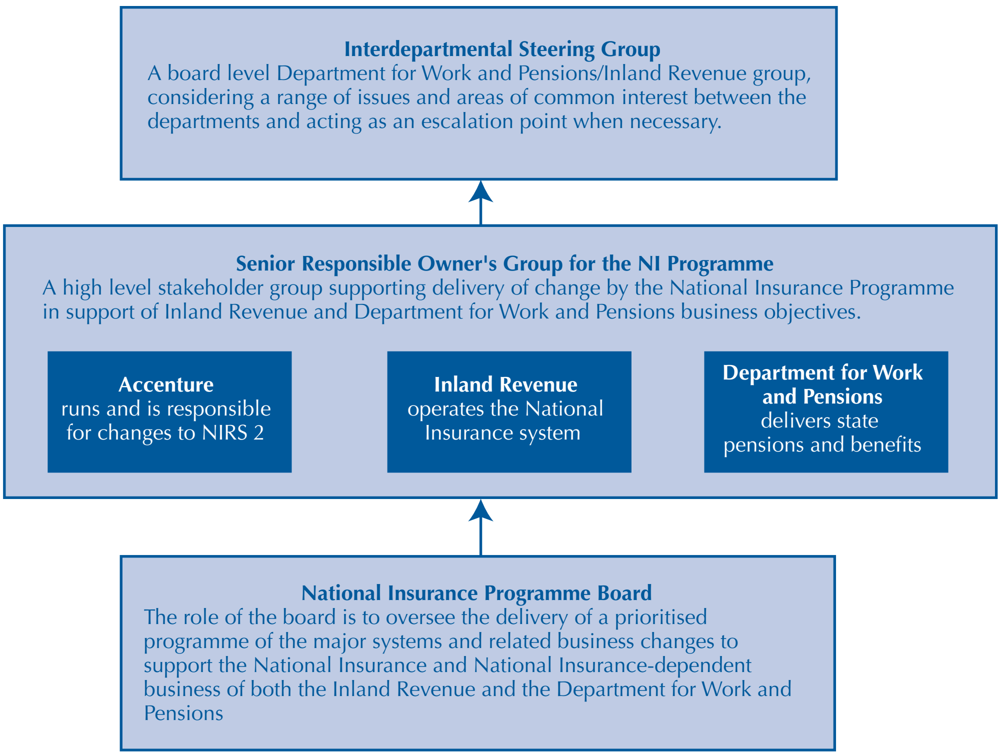
1.4 The NIRS 2 system was originally intended to be delivered by February 1998 but implementation was delayed and the system was accepted into service, with caveats, in August that year. There have also been operational difficulties which have led to delays in processing and payments, resulting in poor customer service. The Committee of Public Accounts have reported on the system on three occasions and have taken a close interest in progress in addressing the delays in implementation.[4] By April 2000, the original system had been fully implemented, except for some features judged to be of a lower priority than later enhancements.

1.5 The Inland Revenue took over responsibility for NIRS 2 in April 1999 on the transfer of the Contributions Agency. The Inland Revenue are now responsible for collecting national insurance contributions and maintaining records but the social security benefit payment functions supported by NIRS 2 are the responsibility of the Department for Work and Pensions. While the Inland Revenue have overall responsibility for managing the NIRS 2 contract, they have set up joint working arrangements which bring together the main parties committed to the effective operation of the system. **Figure 3** outlines the main organisational responsibilities and joint working arrangements relating to NIRS 2.

1.6 In 1998, the Government proposed significant changes to pensions and national insurance legislation. The Inland Revenue, on assuming responsibility for the contract in April 1999, worked with the Department of Social Security and Accenture to establish how best to support the legislative changes. After evaluating various options, the Inland Revenue decided that an extension to the NIRS2 contract was the appropriate vehicle to deliver the development work needed to support the changes within the prescribed timetable.

1.7 A contract addendum signed in April 2000 provides a framework within which the Inland Revenue can order the additional work from Accenture. The extension allows for a minimum capacity to cover known changes that needed to be made, and a maximum capacity to ensure any further legislative changes can be

3 Organisational responsibilities for NIRS 2



Source: Inland Revenue statement of NIRS 2 roles and responsibilities (amended)

3 *HC12, Session 1997-98*

4 *The contract to develop and update the replacement national insurance recording system (46th Report, Session 1997-98 (HC 472))*
Delays to the new national insurance recording system (22nd Report, Session 1998-99 (HC 182))
National Insurance Fund 1998-99 (31st Report, Session 1999-00 (HC 350))

accommodated. If the minimum capacity is required for the 5 years to 2004 the estimated value of the extension is £70 million, while the value of the maximum capacity is £144 million. The current estimates are for substantially below this upper limit.

1.8 We examined:

- the extent to which the original NIRS 2 contract provided flexibility to accommodate changes in government programmes (Part 2);
- why the Inland Revenue decided to extend the NIRS 2 contract and the steps they have taken to minimise the risk of further difficulties arising (Part 3).

This report focuses on the contract extension; our most recent report on progress with the implementation and operation of the NIRS 2 system was included in the Comptroller and Auditor General's *Report on the National Insurance Fund Account 1999-2000*.[5]

1.9 We based our conclusions on the following evidence:

- the Inland Revenue's estimates of the amount of software development work arising from legislative changes;
- papers relating to the original NIRS 2 contract and contract extension;
- the Inland Revenue's comparisons of the cost of extending the contract with Accenture against the cost of engaging another supplier;
- correspondence and notes of meetings between the Inland Revenue and Accenture about the negotiation of the contract extension;
- interviews with the Inland Revenue's contract management team, National Insurance business manager and key staff involved in the contract negotiation, former Department of Social Security staff and Accenture's contract management team;
- performance under the terms of the contract from the date of re-negotiation; and
- a comparison of the contract documentation with the principles set out in the Treasury Taskforce guide to Private Finance Initiative contracts, *The standardisation of PFI contracts* and the Committee of Public Accounts Report, *Improving the Delivery of Government IT Projects*[6] and the Cabinet Office review of major information technology projects (the McCartney report).[7]

5 *HC 446, Session 2000-01*
6 *Improving the Delivery of Government IT Projects (1st Report, Session 1999-2000 (HC 65))*
7 *Successful IT: Modernising Government in Action,* Cabinet Office Central IT Unit 2000.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NIRS2

Part 2

The original NIRS 2 contract proved insufficiently flexible in catering for the significant legislative changes to pensions and national insurance proposed by the Government in 1998

2.1 This Part examines the extent to which the NIRS 2 contract was designed to cater for subsequent legislative changes. It covers:

- how the original contract provided for enhancements;
- why additional work was required; and
- how the volume of additional work was assessed.

The original contract did not allow for the scale of legislative change proposed in 1998

2.2 The Contributions Agency's 1995 contract with Accenture to develop and run NIRS 2 covered replacement of the previous National Insurance Recording System and enhancements required to support legislative changes arising from the Pensions Act 1995, which were due to take effect from April 1997. The contract also made provision for routine enhancements and an agreed annual volume of additional development work, measured in function points.[8]

2.3 Under the NIRS 2 contract, Accenture did not receive payment until the system was operational. Payment is through an operating charge which varies up to a fixed ceiling according to the number of specified transactions processed by the system. The contract also provided for certain enhancements to the system to be included in the basic operating charge, including those arising from routine amendments to social security or pensions legislation, such as annual changes to contribution rates.

2.4 Other changes were to be priced using function points. The shortlisted bidders included a price per function point for enhancements in their tenders. The contract, when awarded specified a range of prices for enhancements depending on the size of the system in function points. The appropriate price was to be determined at a later date, once the size of the system had been agreed between the Contributions Agency and Accenture.

2.5 In May 1997, the Contributions Agency and Accenture agreed a price for system enhancements based on function points, reflecting the point on Accenture's price range bid appropriate to the agreed assessment of the size of the system. The payment for enhancements implemented in a financial year would be evenly spread over the next five years. The price applied up to a limit of 2,000 function points a year. This represented the scale of enhancements expected of NIRS 2 based on experience gained on enhancements to the original NIRS 1 system.

2.6 The Contributions Agency recognised that the scale of enhancements might exceptionally exceed the agreed level. Under these circumstances they would need to reach agreement with Accenture on the cost and timing of such additional work. Additional work could have been purchased at framework rates already in place between the Department of Social Security and Accenture. These rates were considerably higher than the rates agreed for the 2,000 function points.

2.7 The original enhancement rate per function point proposed by Accenture were considerably higher than other bidders because of the different structure of their offer. However, the Contributions Agency calculated that, as Accenture had offered a much lower price for the basic operating charge,[9] the cost of enhancements would not affect the evaluation of the bids unless enhancements exceeded 4,000 function points a year. The Agency had considered this to be most unlikely.

Significant legislative changes were announced after the original contract was signed

2.8 Between May 1997, when the Contributions Agency and Accenture agreed the arrangements for pricing system enhancements, and April 1999, when the Contributions Agency was transferred from the Department of Social Security to the Inland Revenue, the Government announced a number of significant legislative changes which affected the areas of national

8 Function points are a recognised industry standard used to measure the size of a software development. They are derived from the number of transactions in a system, for example, the number of inputs and outputs and cross-references within the computer program.

9 Between £32 million and £50 million compared with the next lowest offer of between £82 million and £146 million insurance and pensions dealt with by NIRS 2 **(Figure 4).** The Department of Social Security provided advice to Ministers on the technical feasibility and costs of each of these policy changes. The implications of each policy were assessed separately, but the Department's ability to assess the overall capacity for NIRS 2 to accommodate the package of changes within the proposed legislative timetable was limited by uncertainties about the initial stabilisation of the system. This meant that they were not in a position to establish fully the aggregate effect of the changes on NIRS 2.

2.9 Furthermore, as the original system had not yet been fully delivered, it made it more difficult to assess the extent to which it would need to be modified. So it was not apparent to the Department of Social Security that the required developments might, in aggregate, exceed the annual enhancement limit included in the NIRS 2 contract. At the time of the transfer it was not clear to what extent, if at all, the legislative changes proposed, together with their respective implementation dates, would result in the annual 2,000 function point limit being exceeded, or more fundamentally, whether the system had the technical capacity to absorb the level of change required.

The additional work exceeded the limit in the original NIRS 2 contract

2.10 When the Inland Revenue took over responsibility for NIRS 2 in April 1999, they commissioned a review of the system from PA Consulting. The aim was to establish whether it would be technically feasible to implement these major developments, in view of the system's previous record. The report, issued in July 1999, concluded that NIRS 2 was a robust and reliable platform, but that it was not yet sufficiently stable to absorb major change. It recommended that the Inland Revenue should carry out a detailed technical assessment of the options for delivering their future business requirements and that further changes to NIRS 2 should not be initiated until 2000, when stabilisation was expected to have been achieved.

2.11 The Inland Revenue formed a joint design team to assess the options with staff from the Department of Social Security and with technical support from Electronic Data Systems (EDS), their strategic information technology partners, and Accenture. Whilst this work was going on, informal discussions were held with Accenture to consider the possible options available should the results conclude that the changes required of NIRS 2 exceeded the annual maximum level contracted. The team considered the scope of the legislative commitments, the feasibility of delivering the commitments through NIRS 2 or through alternative means, and the risks and dependencies involved, in order to derive an estimate of the scale and optimum timing of future developments. Accenture and EDS supplied estimates of the staff days and function points required for development, including estimates of productivity. The Inland Revenue's operational research staff validated these estimates.

2.12 In October 1999, the joint design team concluded that new development work would require between 5,860 and 7,240 function points to be delivered between October 2000 and April 2002. As this exceeded the limit in the original contract of 2,000 function points a year, the Inland Revenue decided to examine ways of meeting the commitments arising from the legislative changes.

4 Main legislative changes affecting the National Insurance Recording System

Development	Proposed	Enacted	Implementation date
Restructuring of National Insurance contribution thresholds and limits	November 1997	Social Security Act 1998	Phased from April 1999
Enabling SERPS pensions to be shared on divorce	June 1998	Welfare Reform and Pensions Act 1999	December 2000
Revised rules for calculating Incapacity Benefit	October 1998	Social Security Act 1998 Misc Amendments (Regs) 1999	April 2000
Reform of bereavement benefits	October 1998	Welfare Reform and Pensions Act 1999	April 2001
Introduction of stakeholder pensions	December 1998	Welfare Reform and Pensions Act 1999	Available April 2001. Employers must offer by October 2001
Introduction of State Second Pension	December 1998	Child Support, Pensions and Social Security Act 2000	April 2002 (earliest)

Source: National Audit Office summary of relevant Government announcements

Part 3

Why the Inland Revenue decided to extend the NIRS 2 contract and the steps they have taken to minimise the risk of further difficulties

3.1 This part examines the options available to the Inland Revenue for carrying out the additional work, how the Department evaluated them, and how they have used the extension to change the way the contract is managed.

The Inland Revenue considered a number of options for supporting the legislative changes

3.2 As part of the process of examining how best to support the legislative changes, the Inland Revenue considered options which would not involve using the NIRS 2 system, including clerical solutions, using other information technology systems, and deferring the work. Although there was scope to use other systems, they concluded that, in most cases, the alternative options would have required modifications to NIRS 2 anyway, and would have led to duplication of effort. Most of these alternatives were discarded, as were deferral and clerical solutions, which would have incurred significant costs or delays **(Figure 5)**. Based on function point estimates at the time, this left NIRS 2 as the most practicable option for some 80 per cent of the work requirement.

The Inland Revenue identified three contractual options for procuring the additional development work

3.3 Having established that there were no realistic alternatives to enhancing NIRS 2 for the majority of requirements, the Inland Revenue explored the contractual options for procuring the additional NIRS 2 development work. Three options were available:

- negotiating a contract extension with Accenture;
- asking Accenture to provide additional resources to meet the Inland Revenue's increased development requirement, above the contracted level, by means of the Department of Social Security framework agreement;
- exercising the break clause in the original contract and holding a new competition for the continuing operation and development of the system.

3.4 The Inland Revenue opened discussions with Accenture about purchasing the additional work. In response, Accenture developed proposals for a dedicated facility to manage software development work, termed the Design Build and Run facility, which would help provide a consistent and reliable service for the delivery of enhancements. In return for the Inland Revenue providing advance notice of their resource requirements, Accenture felt able to offer the Department lower rates per staff day than the Department of Social Security framework rates, which were the alternative charging mechanism for work in excess of 2,000 function points per annum.

The Inland Revenue assessed the value for money of a contract extension with Accenture against industry comparators

3.5 The Inland Revenue commissioned PA Consulting to develop a financial evaluation model which they used to compare Accenture's proposals with the estimated £44 million cost of breaking the NIRS 2 contract and using alternative suppliers. The model compared Accenture's unit costs with: (i) average costs in the industry; (ii) the costs charged by EDS, the Inland Revenue's strategic supplier on other work, representing the typical charge from an outsourcing company; and (iii) Accenture framework rates. The estimates for alternative suppliers included an element reflecting the differential cost for a new supplier to operate the existing system including previous enhancements. The Inland Revenue estimated this at £31 million.

5 Alternative options considered for delivering key legislative changes

The joint design team considered other developments, which mainly involved changes to the processing of annual returns from employers, and determined that they could be implemented without amending NIRS.

Development	Solution	Alternatives considered	Rationale
Restructuring of National Insurance contribution thresholds and limits	Full implementation on NIRS	Clerical Defer changes	Affects core NIRS functions. Clerical option not viable as 48 million records affected. Deferral difficult as employers had started amending rates and thresholds on payroll systems.
Enabling SERPS pensions to be shared on divorce	Implementation on Benefits Agency system with some modification to NIRS	Defer scheme Clerical Full implementation on NIRS	Could be implemented using Pension Valuation on Divorce System at similar cost.
Revised rules for calculating Incapacity Benefit	Full implementation on NIRS	Alternative IT Clerical Deferral	Change manageable on NIRS. Alternative IT system likely to be more expensive. Clerical option available as fall-back. Deferral would jeopardise £25 million of savings.
Reform of bereavement benefits	Full implementation on NIRS	Clerical Deferral	No alternative to NIRS which delivered predecessor benefit. Deferral would risk legal claims from bereaved claimants under Human Rights Act.
Introduction of stakeholder pensions	Partial implementation on NIRS, plus new EDS system	Full implementation on NIRS Deferral	Registration of schemes and scheme members could be delivered by EDS on separate system at similar cost, reducing risk to NIRS.
Introduction of State Second Pension	Full implementation on NIRS	Alternative IT Deferral	Timetable not yet fixed so could be implemented on NIRS at lower risk.

3.6 The cost comparisons **(Figure 7)** showed that Accenture's unit costs compared closely with alternative suppliers, but breaking the contract would have incurred substantial additional costs. The closest comparison was with EDS rates because their long-term contract with the Inland Revenue includes staff charges below the industry average - although it must be recognised that the EDS rate resulted from an outsourcing type contract which is very different from the PFI contract for NIRS 2. The model costed Accenture's proposals at £100 million for a contract volume of 8,000 function points. Using EDS rates, the cost would have been £105 million, but when the £44 million cost of breaking the contract was taken into account the total outlay would have been £149 million. **Figure 6** shows the break costs, which were validated by PA Consulting.

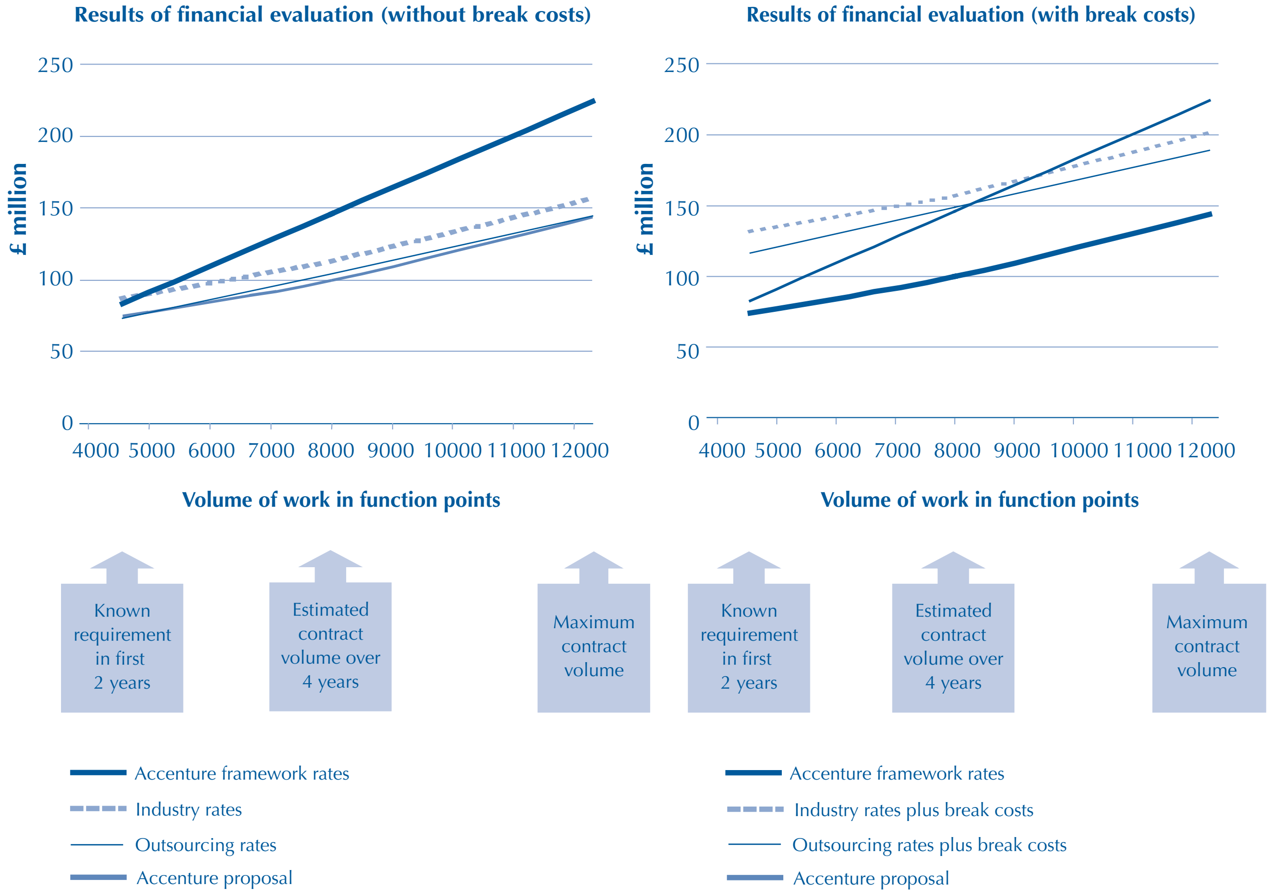
6 The additional costs of breaking the contract with Accenture

	£m
Cost of mounting new procurement	2
Early termination and ongoing licences to use the system	19
Handover payments (overlap of key staff, new supplier's transitional costs)	16
Buying out previous enhancements not yet paid for, fixing known faults	7
	44

Source: Inland Revenue NIRS 2 financial evaluation model

7 Accenture's proposal offered better value for money than breaking the contract

Comparing the costs of delivering development work, Accenture's proposal compared closely with the benchmarks used by the Inland Revenue - industry rates and outsourcing rates. But when the £44 million cost of breaking the Accenture contract is added to the comparators they become much more expensive than the Accenture proposal.



Source: Inland Revenue, NIRS 2 financial evaluation model

3.7 Accenture's proposal included higher staff charges than the comparators. The Inland Revenue considered, however, that, if they used an alternative supplier, they would have to accept rates above the industry average because another supplier would be likely to require a premium to take over the system, given its record.

3.8 Although Accenture's staff charges were higher, the model assumed that the firm would be able achieve higher productivity than the comparators. Accenture agreed to accept a productivity target of 7.5 staff days a function point for NIRS 2 development work under the contract extension compared with a rate of 8 to 10 staff days achieved on the base system. The Inland Revenue's operational researchers estimated that a new supplier, lacking knowledge of the system, would achieve a rate of 11.5 staff days a function point. The model used this rate to estimate the costs of using an outsourcing contract or another industry comparator.

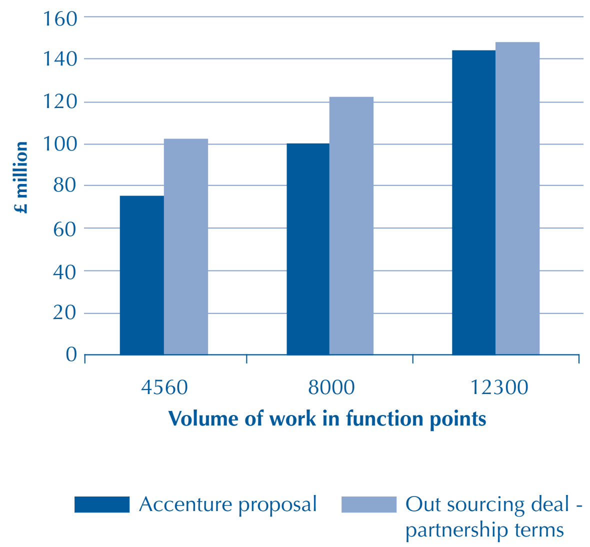
3.9 We noted that the target productivity rates on new work carried out under the Inland Revenue's outsourcing contract, which reflect six years of experience with the relevant systems, would produce much lower unit costs than those used in the model. But even using this more optimistic assumption, the model showed that the outsourcing costs would have been higher than the Accenture proposal, although their lower unit costs would come close to outweighing the costs of breaking the contract at very high volumes of work **(Figure 8).**

The Inland Revenue concluded that a contract extension provided the best option for delivering the additional requirements in the timescale required

3.10 The Inland Revenue carried out an evaluation of whether the Accenture proposal offered value for money. In addition to the financial evaluation, they assessed Accenture's ability to deliver software of the required quality, their commercial stability, security issues, legal and commercial issues, the legislative timetable, and the scope to improve their management of development work.

3.11 The Inland Revenue concluded that the technical review by PA Consulting (paragraph 2.10) and the progress made in stabilising NIRS 2 gave assurance on the quality of NIRS 2 software. They also examined Accenture's performance in delivering a system to another customer using the Design Build and Run approach to software development and obtained external advice which gave assurance on Accenture's commercial stability. They had some concerns - which have since been resolved - about Accenture's disaster recovery arrangements but did not consider that there were other security issues.

8 Using different productivity assumptions, one comparator would have been almost as competitive as Accenture



Source: National Audit Office recalculation of financial evaluation model

3.12 In addition, the Inland Revenue considered the feasibility of making changes to the arrangements for commissioning enhancements. The first major software release after the acceptance of the system was in April 1999 and improvements to procedures for enhancements were in the process of being developed with Accenture. But at that point they had given rise to operating difficulties because the original contract, drawn up within the PFI framework then in operation:

- included procedures for proposing, evaluating and approving development work, but did not clearly define how enhancements were to be accepted or tested;
- did not define clearly which types of smaller and regular enhancements were included in the basic contract price, which led to contractual disputes; and
- did not provide a mechanism to distinguish changes required to meet legislative requirements from routine change requests.

When the Department of Social Security sought compensation for the delayed implementation of the system, there were also disagreements between the Contributions Agency and Accenture over the contractual requirements relating to system developments.

3.13 Since the original contract was signed, the Government have produced substantial additional guidance, in the light of experience with this and other contracts.[10] In particular, the McCartney report emphasised modular and incremental development of projects, mechanisms to ensure open communication between client and supplier, and jointly agreed and documented change control processes. The Inland Revenue concluded that the proposed extension to the contract could be designed to reflect current guidance to achieve improved working methods and reduce risk. They obtained legal advice to confirm that these new requirements could be reflected in the contract.

3.14 In carrying out their evaluation, the Inland Revenue also took into account the need to deliver changes arising out of the legislative timetable. Using a supplier other than Accenture would have delayed implementation of the changes because of the time it would have taken for them to mobilise and become familiar with the system. It would also have required the Inland Revenue to break the existing contract, resulting in delay while they held a new competition. This could have led to additional costs for the government - for example, claims for compensation from pensions providers if systems were not implemented, or the costs of providing alternative clerical solutions. The Inland Revenue did not quantify these costs, but they would have made alternatives more expensive and risky.

3.15 The Inland Revenue needed to be in a position to place orders for development work in 2000-01. They also wished to manage development work in a way that would overcome the operating difficulties discussed in paragraphs 3.12 above. They considered that the Design Build & Run option proposed by Accenture offered:

- a suitable structure to resolve issues with NIRS 2 and to take developments forward;
- a vehicle for improving working methods on the contract; and
- reduced risk compared with the previous arrangements.

3.16 In the light of all these factors, the Inland Revenue concluded that a contract extension provided the best option for meeting the legislative requirements in the timescale set and reached agreement with Accenture on these terms.

The contract extension risked being open to legal challenge

3.17 The proposed method of payment to Accenture under the contract extension differed from that advertised in the Official Journal of the European Communities for the original procurement. At that time, suppliers were invited to tender on the basis that they would be "paid, after the system goes live, by means of a transaction-based or similar charging method". The contract extension replaced this with stage payments for development work. The changes do, however, correspond closely to more recent Treasury advice on the principles to adopt in PFI contracts for information technology.[11]

3.18 The Inland Revenue sought legal advice on the implications of this discrepancy. The advice they obtained was that whereas all other aspects of the contract extension complied with the advertisement, the payment arrangements might not. Under European procurement rules this could make them vulnerable to claims for damages from any suppliers who could prove that they had suffered loss of profit as a consequence. Taking account of the substantial financial differential between the shortlisted bidders in the original NIRS 2 competition and the history of industry practice, legal advisers judged the likelihood of such a challenge being made or being successful to be extremely low. They decided that the costs of delaying the work programme and the advantages of the revised arrangements outweighed the risks associated with failing to comply with the procurement rules.

Certain risks previously borne by each party are shared under the contract extension

3.19 The original contract aimed to transfer risks to the contractor. For example, the risk of development cost overruns was borne by Accenture because payments were for operational performance and did not take into account input costs. Delivery risk was considered to be transferred because the contractor was not paid until they had delivered an acceptable system.

10 *The standardisation of PFI contracts,* Treasury Private Finance Taskforce 1999
Successful IT: Modernising Government in Action, Cabinet Office Central IT Unit 2000.

11 *The standardisation of PFI contracts,* Treasury Private Finance Taskforce 1999

3.20 However, when difficulties emerged with the delivery of the new system the Contributions Agency still had to meet its statutory responsibilities. Although the contractor was not paid for the functionality they did not deliver, and thus bore financial risk, the business risk of non-delivery remained with the Contributions Agency.

3.21 The original contract was designed to share the risk arising from demand for changes to the system - the contractor accepted risk in relation to legislative changes already agreed and documented in the contract, and regular enhancements, which were to be delivered within the contract price. There was no defined mechanism for purchasing further enhancements should the scale of change exceed the contractual maximum, which meant that the Contributions Agency bore the full risk of additional enhancements being required. This risk materialised when the further legislative changes were announced in 1998, which had to be delivered to tight timescales (paragraph 2.8).

3.22 The contract extension alters the way in which development work is managed and paid for in a number of ways:

- Previously, development charges were rolled into the operational charges for the system as a whole. Under the contract extension the Inland Revenue make stage payments covering the contractor's development costs and a share of an agreed target profit margin.
- Mechanisms are introduced to encourage timely delivery.
- Post go-live support is provided for an agreed period of time after each release at a price based on the number of function points delivered, as a means of incentivising the delivery of good quality, fault free products.
- Productivity targets are agreed for each project under the extension, and the cost of variations shared between the parties.
- If overall profits are higher than a target margin, the difference is shared between Accenture and the Inland Revenue. There is an open book accounting arrangement, which allows the Department's internal audit to check costs.
- There are improved processes for resolving problems and dealing with difficult issues.
- The extension has also introduced the concept of qualifying events. These are events which have such a material impact on the relationship that urgent discussion to identify options for resolution are held. The intention of this clause is to introduce greater flexibility to the arrangements, and to reduce the risk of litigation.

The combined effect of these new provisions is that the risks of new development work not being delivered to cost and time are shared between the Inland Revenue and Accenture **(Figure 9)**, which recognises the Department's view that they have an essential role to play in effective software development. The provisions correspond closely to the Treasury Taskforce principles of PFI IT contract risk management and the recommendations of the McCartney report, which were issued after the conclusion of the extension agreement.

9 **Most development risks are shared**

Risk	Ownership	Comment
Delayed delivery	Shared	Inland Revenue bear business risk. Stage payment regime rewards delivery. Financial penalties are imposed for non-delivery.
Productivity deviates from target	Shared	Enhancements priced using agreed productivity target. Variations are shared between Inland Revenue and Accenture.
Poor product quality	Shared	Inland Revenue bear business risk. Accenture receive fixed payment for operating live system to agreed service levels. Penalties for failure to meet service targets.
Volume change	Shared	Payment mechanism varies cost by level of work ordered within a set floor and ceiling. If demand varies above and below that level there is provision to renegotiate.
Completion and acceptance disputes	Shared	Accenture receive stage payments for meeting project milestones. Completion and acceptance arrangements apply to each project phase. Joint testing.

3.23 The Inland Revenue continue to bear the business risk of non-delivery of NIRS 2 functionality. As the risk of non-delivery increases with the volume of change to a system, the Inland Revenue have taken steps to manage the risk actively by:

- introducing and applying their standard project management methodology to system changes under the contract;
- managing new software developments as a series of individual, separately controlled projects which are overseen centrally and allocated a specific release date linked to the legislative timetable;
- establishing joint management and development boards joint testing arrangements; and by
- further developing a risk and issues register which allocates risks to individuals, and includes action plans and status monitoring.

3.24 Accenture continue to own and run the NIRS 2 system. They therefore still bear risks relating to the operation and availability of the system, the technology deployed, obsolescence and residual value.

The Inland Revenue have taken steps to ensure that issues which arose on the original contract do not recur

3.25 The NIRS 2 system has been the subject of three reports by the Public Accounts Committee.[12] Their first report focused on the original procurement. In 1998-99 the Committee focused on the delays to the system and in 1999-00 they took evidence on the progress made in recovering the position.

3.26 As regards the development and delivery of NIRS 2, the Committee concluded that:

- in view of the risks of attempting to deliver the system to a tight timetable, there was a need for a fall-back position, and the Contributions Agency should have taken a hard look at alternatives (46th Report of 1997-98, conclusion (xi));
- where risks are transferred it is necessary to define responsibilities clearly (22nd Report of 1998-99 (paragraph 8));
- post-acceptance difficulties cast doubt on the quality and rigour of the Contributions Agency's acceptance testing; sufficient time needed to be built into the implementation plan to conduct rigorous testing (22nd Report of 1998-99 conclusions (viii) and (ix));
- the Contributions Agency and the contractor had not developed a shared understanding of what was meant by delivery of the system (22nd Report of 1998-99 conclusion (xi)); and
- the Inland Revenue should look again at the balance of benefits and risks underpinning decisions on ownership of intellectual property rights in major government systems (31st Report of 1999-2000, conclusion (iii)).

3.27 Under the contract extension the Inland Revenue have introduced changes to the contractual relationship in order to overcome the difficulties encountered on the original contract, reduce risk and improve working relationships. They developed and agreed with Accenture a set of business principles which have been included in the contract. These change the way in which requirements are agreed, work is planned, projects are defined, accepted and tested and problems are identified and resolved. **Figure 10** shows how the action taken has addressed the issues identified above.

10 Action taken to deal with difficulties which arose on the original contract

Timetable for delivery	Mechanisms have been introduced to manage the risks of delays in delivering software developments. Development work is managed as a series of projects leading to a single 6-monthly release. If the Inland Revenue order work to a timetable not accepted by the contractor, a grace period can be negotiated which can protect the contractor from unfair penalties.
Definition of responsibilities	The contract addendum sets out each party's objectives and responsibilities. The business structure for managing the development work was endorsed by an independent adviser.
Acceptance testing	The contract addendum sets out a clear framework for acceptance testing. Joint testing arrangements require the parties to agree definitions of acceptance as well as avoiding duplication of work.
Shared understanding of delivery	As noted above, there is now agreement on what constitutes acceptance, and there are also joint project management arrangements.

12 *The contract to develop and update the replacement national insurance recording system (46th Report, Session 1997-98 (HC 472))*
Delays to the new national insurance recording system (22nd Report, Session 1998-99 (HC 182))
National Insurance Fund 1998-99(31st Report, Session 1999-00 (HC 350))

3.28 As regards intellectual property rights, the same contract terms applied to developments under the contract extension as were applied to intellectual property rights under the original agreement. Also, there was no change in the value of the transfer payment to Accenture (£14 million) for the rights to use the NIRS 2 system for its existing purpose after the contract expires in 2004. So the development work under the contract extension is unlikely to increase the value of the system as a whole to Accenture. The Inland Revenue did not seek to obtain explicit intellectual property rights to the software developed under the extension, but as the developments are inextricably linked to the main system software these rights would have had no separate value. By focusing on securing appropriate licence rights in line with the original development, the Inland Revenue obtained all the rights it needed at no incremental cost. Accenture offered the Inland Revenue the option of acquiring the right to use NIRS 2 for purposes other than national insurance business for a further payment of £36 million, but the Department decided not to include this option in the contract.

The new arrangements are achieving results

3.29 We interviewed the contract managers at the Inland Revenue and Accenture. Both told us that they considered the relationship between the parties had improved since the introduction and operation of the new arrangements. Accenture told us that, whereas the relationship had previously been confrontational, it was now very positive. The Inland Revenue's contract management team understood their objectives, listened to their views, and resolved issues without the need to resort to formal contract escalation procedures. The Inland Revenue rated their relationship with Accenture as very good following the introduction of new incentives and joint working, and user satisfaction with the system had improved substantially.

3.30 At the time of our examination there had been two software releases under the contract extension. The projects covered by these releases, which included changes required for pensions sharing on divorce, bereavement, incapacity and the restructuring of national insurance contributions, were completed on schedule. Development required to support the introduction of stakeholder pensions was scheduled for implementation in two stages in October 2001 and April 2002. The Inland Revenue reported that the quality of software had improved significantly, compared with the earliest releases and that they had also benefited from cost and productivity improvements under the new profit and productivity sharing arrangements.