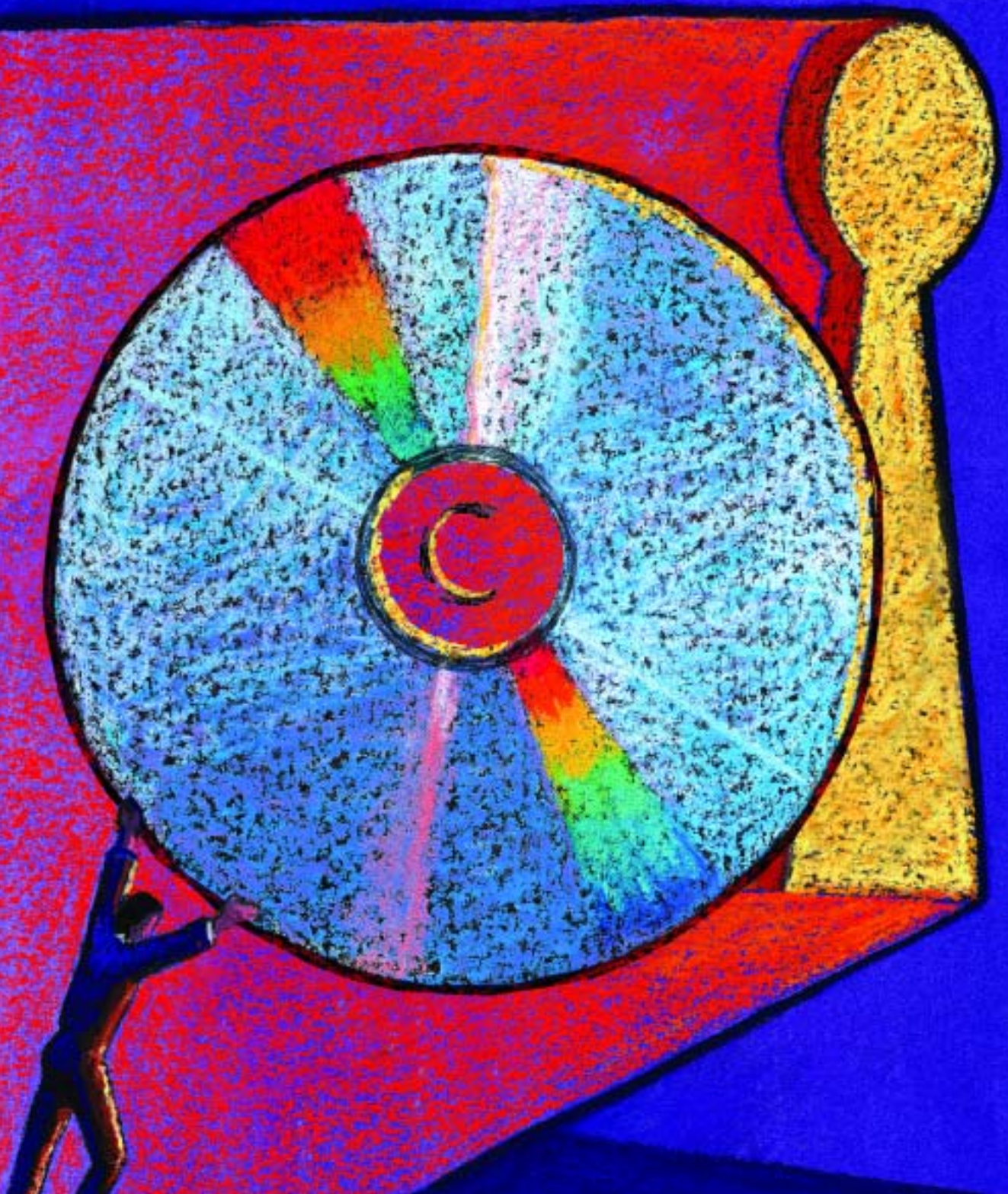
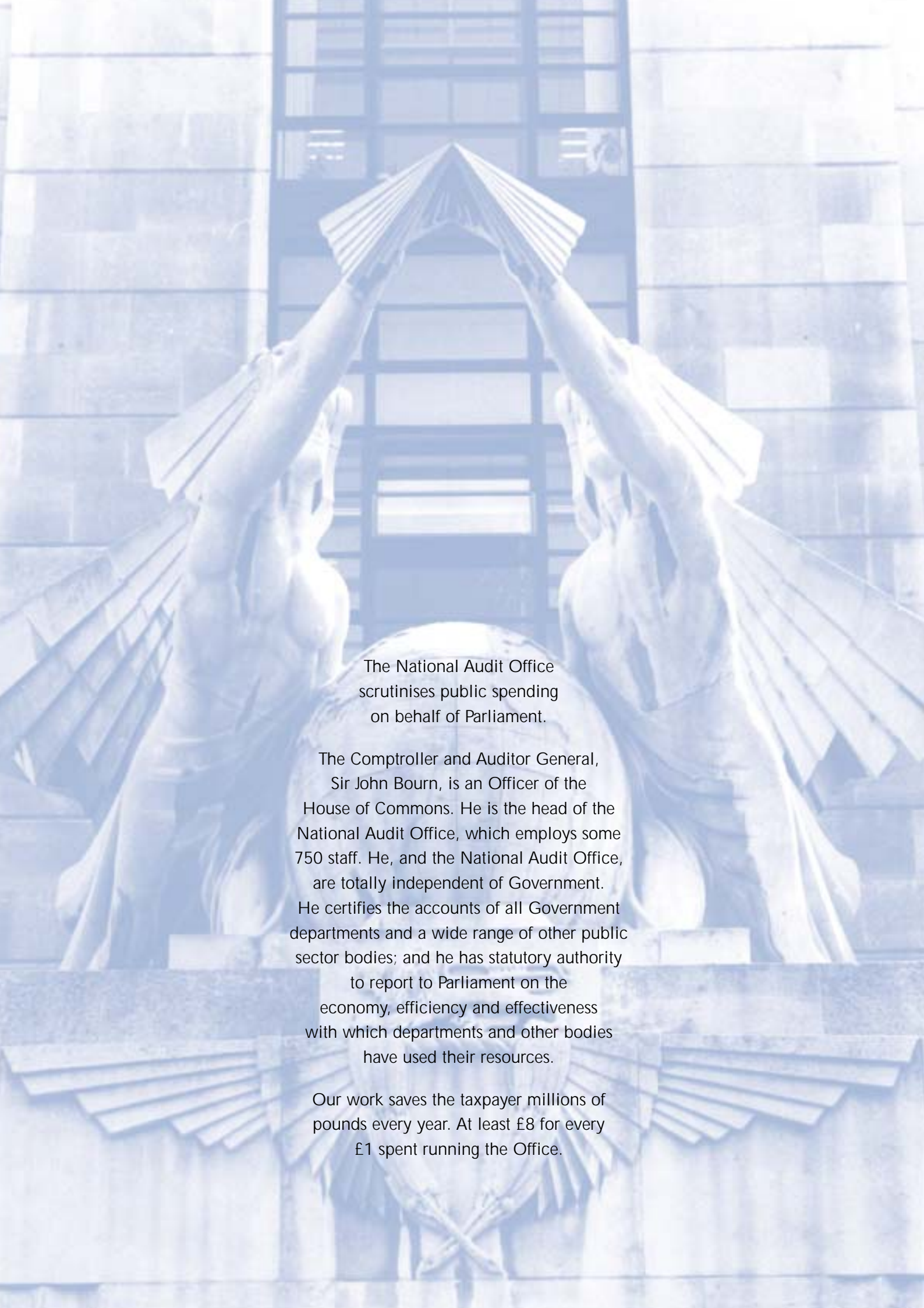


Purchasing and Managing Software Licences

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL
HC 579 Session 2002-2003: 1 May 2003



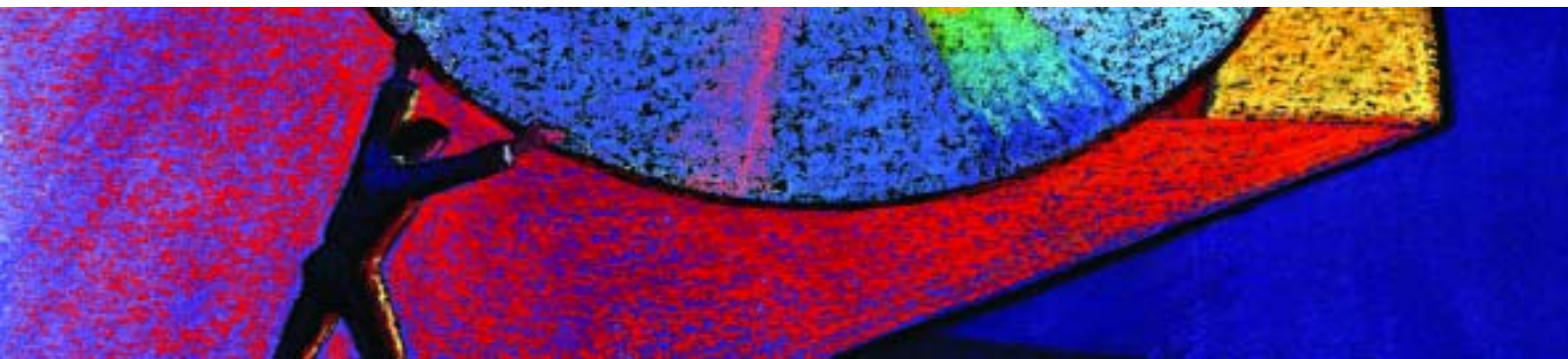


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Purchasing and Managing Software Licences



REPORT BY THE COMPTROLLER AND AUDITOR GENERAL
HC 579 Session 2002-2003: 1 May 2003

This report has been prepared under Section 6 of the National Audit Act 1983 for presentation to the House of Commons in accordance with Section 9 of the Act.

John Bourn
Comptroller and Auditor General

National Audit Office
1 April 2003

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Preface

Preface by the Comptroller and Auditor General

Departments, their agencies and non-departmental public bodies spend over £13 billion a year on procurement. The magnitude of such expenditure means that collectively departments have considerable buying power which, if exercised effectively, should provide opportunities to secure better deals from suppliers. Suppliers have, however, often been able to negotiate separate contracts with departments that are frequently on different terms.

Since it was established in April 2000 the Office of Government Commerce (OGC) has, working with departments, sought to identify opportunities to negotiate deals centrally on more favourable terms with suppliers who are strategically important to government. Departments are free to choose whether or not they wish to use these agreements to purchase goods and services.

Software is strategically important to government as it is essential to deliver most public services and to operate business processes. All software requires a licence for which a fee is payable to the supplier. The total amount spent on software by the public sector each year is around £1.6 billion and departments and agencies spend annually around £610 million on software. Our survey of departments and agencies identified specific spending on licences alone of £100 million. In March 2002, OGC announced it had reached Memoranda of Understanding with Microsoft, Lotus/IBM, and Sun Microsystems; and in June 2002 with Corel. Each Memorandum sets out the principles under which software companies will conduct their future business with departments and the pricing and discount arrangements they will offer. In February 2003, OGC agreed a further Memorandum with Oracle to work together on ways of developing standardised IT systems based on common requirements so as to cut back on duplication of effort and costly customisation of systems. The deal guarantees best overall prices and terms on Oracle software to the public sector. OGC estimates that the deal with Oracle will save an average 11 per cent reduction in the overall cost of products and support purchased directly and indirectly from Oracle.

OGC estimates that the Memorandum of Understanding with Microsoft will save the public sector around £100 million over the three years from March 2002 through a combination of direct price reductions, productivity improvements and efficiency gains. Thirty-one of 66 departments have so far used the Memorandum and the ten that have produced estimates consider that it should save them some £5.4 million over three years. OGC estimates that savings of £31 million from direct price reductions had been achieved across the public sector by January 2003. Some public sector organisations are waiting for the optimum time in their purchasing cycles to sign up to the agreement, however, despite the slow take up to date it seems that the estimated savings from direct price reductions of £36 million across the whole of the public sector will be achieved.

To realise the full benefits of the new arrangements and, in particular the potential savings, more departments need to take advantage of the Memoranda as their existing agreements with suppliers expire. OGC and departments should monitor carefully the extent to which the discounts on offer are actually achieved. Departments also need to carry out systematic reviews of their software and supporting licences more regularly, to ensure that they only hold licences which are actually needed.

Our examination involved a detailed survey of how 66 departments purchase and manage their software licences and more detailed case studies of the Department for Education and Skills, the Land Registry, the Ministry of Defence and the Ordnance Survey.

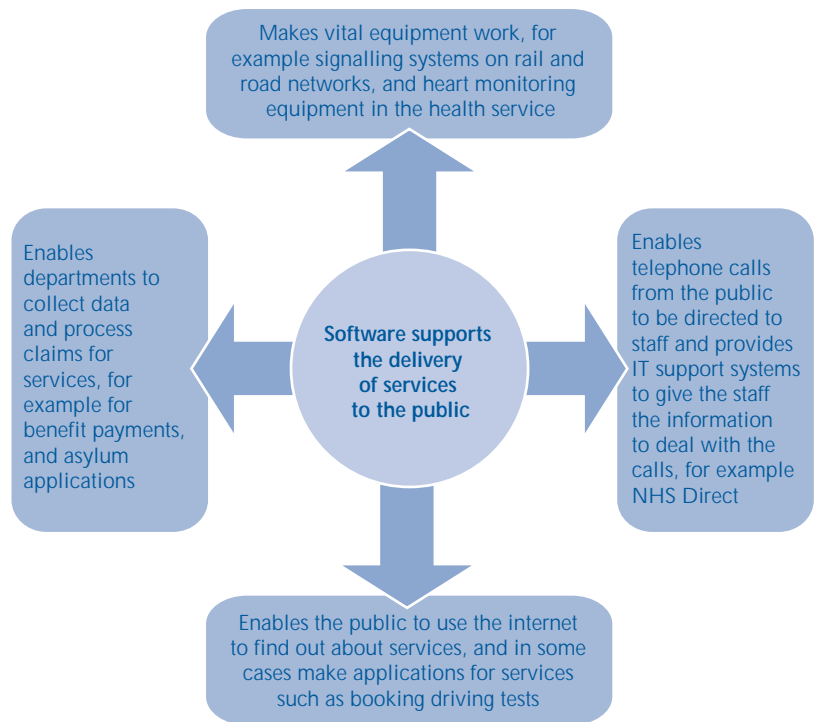
executive summary

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- Many of the services that departments provide to the public depend heavily on computer software (**Figure 1**) and to use software departments need to have valid licences. A software licence is a legally binding agreement between the software manufacturer and the user of the software, which defines how the software should be used, outlines the technical support and any upgrades that will be provided by the supplier and provides restrictions to prevent the abuse of copyright by illegal or unauthorised copying. In 2001-02 departments and agencies spent around £610 million on software, £100 million of which was spent on over one million software licences.

1 Software is vital for delivering services to the public

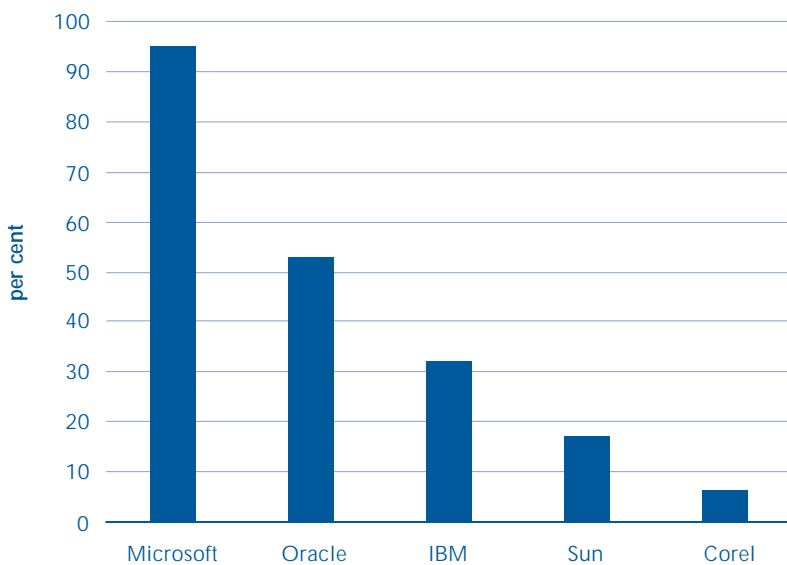


Source: National Audit Office

- Departments may have a range of licences with suppliers providing varying degrees of flexibility. For example, straightforward licence agreements allow departments to use standard software packages, such as those from Microsoft and Lotus, and other deals cover more complex software where suppliers provide a core package with additional modules that are customised to fit organisations' requirements.

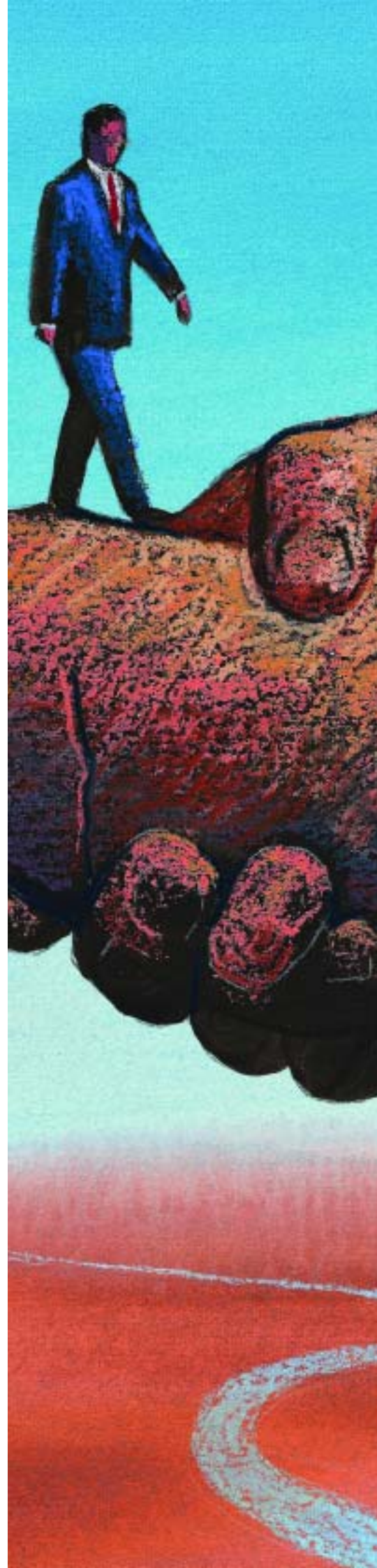
- 3 Departments and agencies are responsible for deciding what software to purchase and how they manage it. The Office of Government Commerce (OGC) is responsible for promoting value for money improvements in the way departments undertake their procurement.
- 4 Ninety-five per cent of departments use Microsoft software (**Figure 2**) and in May 2001 it announced new licencing arrangements to operate worldwide from August 2002. OGC and departments assessed the likely additional costs they would incur from these changes as being in the region of £40 million to £60 million per year. In response, OGC with the support of departments negotiated with Microsoft to secure more favourable terms. In March 2002 OGC announced a Memorandum of Understanding setting out the principles under which Microsoft will conduct business with the UK public sector for the three years to March 2005. This includes the pricing arrangements and the discounts which Microsoft will offer¹. At the same time OGC announced agreements with Sun Microsystems and Lotus/IBM and subsequently secured agreements with Corel and Oracle.
- 5 The size of discounts depends on the volume of purchases which departments make with Microsoft and other suppliers. Depending on the level of take up, OGC estimates that, in addition to avoiding the increased costs from changes in Microsoft's licensing arrangements, the new arrangements could deliver savings of some £100 million over the next three years to the whole of the public sector and the Office is encouraging departments to use the Memoranda.
- 6 This report assesses how departments purchase and manage their software licences and in particular the extent to which they are taking advantage of the Memoranda of Understanding which OGC has negotiated with IT suppliers. Our examination is based on a survey of 66 departments and agencies together with more detailed examinations of four departments (Appendices 2-5).

2 Microsoft and Oracle software is used by the majority of departments



Source: National Audit Office survey of departments

¹ The Memorandum can be used by central departments, agencies and non-departmental public bodies, the NHS, local authorities, police authorities, fire authorities, the House of Commons, the House of Lords, the National Assembly for Wales, the Scottish Executive and the Northern Ireland Devolved Administration.



Findings

- 7 **On departments' take up of the Memoranda of Understanding.** Across the public sector as a whole, OGC estimated that the Memoranda would save £36 million on direct price reductions, and using the returns from suppliers OGC estimates that the Memoranda have saved £31 million on direct price reductions in the first ten months. Thirty-one departments have so far used the Memorandum with Microsoft and five departments have used the Memoranda agreed with other suppliers. Departments have been slower in taking up the terms offered by Microsoft than OGC anticipated. Both OGC and Microsoft consider, however, that many departments are waiting until their existing agreements expire.
- 8 Ten departments were able to estimate savings achieved to date which were around £5.4 million, all of which had come from Microsoft. OGC does not have an established process by which departments are required to report specifically the level of discounts they achieve from using the Memoranda. Prior to the OGC Memorandum, some departments negotiated separate agreements with Microsoft which are now included in the discount arrangements agreed by OGC. The Ministry of Defence, for example estimates that its agreement, negotiated nine months prior to the OGC Memorandum, has the potential to save some £17 million over four years on expenditure on Microsoft software licences of £69 million.
- 9 OGC has negotiated agreements with other suppliers to encourage departments to purchase software from a wider range of companies. Suppliers other than Microsoft consider, however, that take up by departments has so far been disappointing and has had little impact on the level of business they receive from public sector organisations. Only Sun Microsystems considered that it might achieve a significant increase in business in the future as several departments were evaluating its Office software package.
- 10 **On the cost of software licences.** Departments that can identify the cost of their licences are better placed to assess the cost effectiveness of deals offered by different suppliers. Nine departments could not easily identify the costs of the various licences they own. In some instances, this was because licences had been bought as part of an overall package of software and equipment making it difficult to separate costs. Licences can, however, be bought on different terms; for example licences that can be used in perpetuity, until the software needs to be upgraded, without further payment while other licences have to be renewed each year. Departments therefore need to consider the costs of different options available to them.
- 11 **On determining the need for licences.** A number of factors influence departments' decisions to purchase software and the necessary licences. These include: assessments of the number of staff who need to have access to software; timing - so that the purchase of new software and equipment is co-ordinated to avoid acquiring upgraded software that cannot operate with existing equipment, and technological advances with new software providing opportunities to improve departments' processes and service delivery. For larger procurements most departments carry out a full business case and many exercise central control over expenditure. Less than 45 per cent of departments considered the total cost of ownership before purchasing new or upgraded software with the risk that the full cost of investment in IT may be understated.

3 The four case studies examined in the report

Department	Why it uses software	How software is purchased and managed	Our assessment
<p>The Department for Education and Skills</p> <p>Number of software licences held¹:</p> <p>21,000, of which 70 per cent by amount but not expenditure are Microsoft.</p> <p>Costs in 2001-02:</p> <p>£1.7 million.</p>	<p>To provide desktop operations such as word processing and e-mail, for standard functions such as payroll.</p>	<p>The Department uses the academic volume licencing arrangements offered worldwide by Microsoft to schools, colleges, universities and central and local government organisations responsible for education. It also takes account of volume discounts wherever possible for other software.</p> <p>The Department is working on identifying where all its software is held and how it is licenced.</p>	<p>The Department has been able to take advantage of the favourable deals that Microsoft offers to organisations working in the education sector and has therefore reduced the cost of purchasing its software.</p> <p>The Department considers that the information on its database of software licences is between 75 per cent and 80 per cent accurate. It needs to improve the information on the location of software.</p>
<p>The Ministry of Defence</p> <p>Number of software licences held¹:</p> <p>130,000 for Microsoft desktop computers. Records for these are held centrally. Other companies' software is held by separate business units rather than centrally.</p> <p>Costs in 2001-02:</p> <p>£60 million.</p>	<p>To provide standard desktop operations, to operate administrative systems such as stores, vehicle and property management and to deploy armed forces personnel.</p>	<p>The Ministry is now introducing centralised arrangements which are available to all its business units to purchase software. It is planning to put in place arrangements to provide business software under centrally controlled arrangements rather than devolved to individual business areas.</p> <p>The Ministry has reasonable access controls to prevent unauthorised software being introduced for which a licence would be required.</p>	<p>The Ministry negotiated its own agreement with Microsoft to meet specific business needs, which was put in place prior to OGC finalising the Memorandum of Understanding with Microsoft, and was discussed with OGC. The Ministry estimates that the agreement has the potential to save some £17 million over four years on expenditure on Microsoft software licences of £69 million.</p> <p>Building on existing arrangements, the Ministry is exerting a greater degree of control over its software licences, particularly those for business systems, to allow it to identify the location and use of its software, rationalise the number of licences it holds and develop a more co-ordinated approach to purchasing new licences.</p>
<p>Land Registry</p> <p>Number of software licences held¹:</p> <p>Over 20,000, of which 60 per cent by amount but not expenditure are Microsoft.</p> <p>Costs in 2001-02:</p> <p>£10.1 million.</p>	<p>To carry out standard office functions and administrative systems and to maintain a register and map of land ownership in the UK.</p>	<p>The Land Registry has outsourced the purchase and management of some of its software licences and benefits from reduced administration costs and increased buying power of its partner.</p> <p>The Land Registry's contractor, Compaq, uses an online audit tool to check the software being used on systems, to keep records of all the licences purchased and to review the need for non-standard software whenever staff move posts.</p>	<p>The Registry has evolved a clear method for purchasing and managing software, built around the principle of centralised control. Its partnership with Compaq has the potential to offer savings, and the Registry whether checks other purchasing routes, for example using G-CAT, have the same product more cheaply.</p> <p>The practice of preventing non-standard software from being loaded onto networked computers is a fairly strong control, but the use of tracking tools needs to be fine-tuned in order to provide more assurance that staff cannot introduce unlicensed software.</p>
<p>Ordnance Survey</p> <p>Number of software licences held¹:</p> <p>18,500, of which around 40 per cent by amount but not expenditure are Microsoft.</p> <p>Costs 2001-02:</p> <p>£2.1 million.</p>	<p>Ordnance Survey uses standard office software and specialist illustration and mapping software to provide mapping products to organisations and the public.</p>	<p>Ordnance Survey uses Computacenter to purchase and manage its software and computer equipment requirements apart from large scale projects, which are supplied through competitive tender.</p> <p>Ordnance Survey has decided to strengthen its controls by employing a software librarian to keep records of all licences and it intends to cross check the software on its systems against records of licences held.</p>	<p>Ordnance Survey has developed a strategic partnership with Computacenter, which is designed to provide purchase cost savings and technical or market knowledge support. Within the organisation, the work of the Investment Group and the software librarian are helping to impose centralised control over licensing. Ordnance Survey considers that its control of existing licences is adequate, but recognises that there is a risk that its staff could load unauthorised software onto their personal computers, thereby breaking internal rules. It will, however, be important for the organisation to develop its checking procedures and ensure that staff are fully aware of their responsibilities for software use.</p>

NOTE

- 1 Many of the licences are for desktop software with separate licences for each machine or for multiple products on the same machine. In contrast, other suppliers supply single licences that allow many users to use the product or one licence for a single product used concurrently by many users. Therefore it is not appropriate to calculate the average cost per licence.

- 12 On having complete and accurate records.** Without reliable information on the software they hold, departments cannot be sure that they have the appropriate number of licences. Purchasing more licences than are needed will not represent value for money but not having enough exposes departments to the risk of financial penalty because they will not be complying with legally binding contractual obligations. All departments had information in some form on the details of their licences. Several departments with large numbers of staff working in a wide range of separately located business units, such as the Ministry of Defence, have traditionally used devolved arrangements for the purchase and management of software. They are now, however, introducing centralised arrangements, where appropriate, to improve the information they have on the location of their licences, their terms and what they cover.
- 13 On regularly checking to ensure that all software has an appropriate licence.** Software packages can be purchased relatively easily and there is always a risk that staff may acquire new software for which no licence is held or which is not compatible with existing systems. Regular independent reviews which reconcile the software in use with the licences held can help manage this risk. Four departments carried out manual checks at least every three months and 18 departments did this once a year. For the remainder the frequency of reviews is more mixed with nine departments carrying out no checks. Checks can be done electronically using specialist software and 23 departments carried out electronic checks at least annually. Four departments carried out neither regular manual nor electronic checks of software to reconcile it with the licences held.

Conclusions

- 14** When there is a relatively small number of suppliers there is a significant risk that departments increasingly come to rely on one or two companies. This inevitably makes it more difficult to be sure that value for money is achieved. Where, however, suppliers receive a significant amount of revenue from departments, there is opportunity for departments collectively to exercise their purchasing power to secure better deals. OGC, therefore, has done well in working with departments and the wider public sector to negotiate agreements with Microsoft and other IT suppliers from which all public sector organisations can benefit. So far, ten departments have estimated savings of £5.4 million but some will be waiting for the optimum time in their purchasing cycle to sign up to the agreement and it remains possible that the savings from direct price reductions of £36 million across the whole of the public sector will be achieved. The full realisation of the discounts on offer to departments will depend on the extent to which they use the agreements to purchase software. From their returns, OGC estimated that savings of £31 million from direct price reductions had been achieved across the public sector by January 2003.
- 15** Most software companies offer discounts for purchasing larger volumes but for commercial reasons they do not publicise details of the discounts they agree with different customers. It is, therefore, often difficult for departments to assess whether the prices they are charged reflect, and continue to reflect, the best market rate. This emphasises the importance, if value for money is to be achieved, of both departments and OGC having reliable data on the level of actual discounts achieved from suppliers in accordance with the arrangements negotiated. In addition, they also need to have reliable market intelligence on IT suppliers and their overall performance together with information on the costs which other purchasers of software are incurring.

Recommendations

- 16 To support OGC's and departments' drive to improve the value for money from software licences, we make the following recommendations.

For departments

- 1 **Maintain reliable information to assess the extent of their expenditure on software and supporting licences** so as to be able to consider fully the implications of different deals available and assess the full costs of different types of software or of changing suppliers.
- 2 **Consider in the first instance using the Memoranda of Understanding negotiated by OGC with suppliers.** The significant cost savings will only be realised if departments purchase software in sufficient volumes. Departments need, therefore, to purchase from suppliers through the arrangements agreed by OGC. Alternative procurement routes should be the exception and only followed where there is very clear evidence that this will deliver better value for money. Departments also need to be alert to the risks and opportunities of spreading business among more suppliers.
- 3 **Check regularly to ensure that no unlicensed software is being used on their systems.** Departments need complete and accurate records of the licences they hold and to reconcile these to their software in use. To ensure the accuracy of reconciliations, departments should use electronic software that is now available to carry out checks. At least twice a year, departments should carry out a more detailed inventory of the software and licences they hold.
- 4 **Consider the total cost of ownership when purchasing major upgrades or new systems.** Often the initial purchase price of new software or an upgrade will be only a small proportion of the total cost of ownership. Other costs are likely to include installing the system, retesting, resolving problems caused by using different software and the resources and time needed to train users. If all these are not taken into account in purchasing decisions the cost of the investment is likely to be understated.

For the Office of Government Commerce

- 5 **Monitor carefully take up of the Memoranda of Understanding and the discounts received by departments.** Although OGC published the Memoranda when they were signed, OGC cannot direct departments to use the Memoranda it has negotiated but has emphasised to them that it is in their interests to do so. OGC has been actively discussing the benefits of the Memoranda with around 20 organisations in the wider public sector that it identified as likely to benefit from using them. Our discussions with departments indicated that not all were aware of the agreements with suppliers. OGC needs **(i)** to publicise the Memoranda more widely and demonstrate how all public sector organisations can benefit; **(ii)** monitor take up of the arrangements and target organisations that are not procuring software through the Memoranda so as to identify the reasons why and how any obstacles can be overcome; and **(iii)** establish a means of receiving sufficiently reliable information on the extent to which savings are being achieved so that the appropriate remedial action can be taken if it becomes apparent that planned savings are not likely to be realised.

Key questions for departments to ask when determining whether they are achieving value for money in purchasing and managing their software licences

- **Is the need for the software fully justified?**

Departments should be confident that the software will contribute to improving its business processes and service delivery, that total ownership costs have been taken into account, that the software will be compatible with existing systems and the timing of the acquisition is right - to minimise the risk of new software quickly becoming redundant or overtaken by developments in technology.

- **Is there opportunity to aggregate purchases to secure discounts?**

Departments should have sufficient central control to ensure that, whenever possible, their purchases can be aggregated to secure discounts from suppliers.

- **Are the Memoranda of Understanding negotiated by OGC with software suppliers going to be used?**

In the first instance departments should always consider using the Memoranda established by OGC to purchase software. If a decision is taken not to use the Memoranda this should be clearly justified on the basis that the alternative procurement route will clearly deliver better value for money in the short and longer term.

- **Are there systems in place to obtain reliable information to report and monitor the discounts received from suppliers?**

Departments should have information which enables them to report and monitor the volume of business they do with each supplier and the discounts they receive to ensure that this is in accordance with the terms of the Memoranda negotiated by OGC and other agreements.

- **Is there reliable information on all software currently in use and licences that have been purchased?**

Departments need to have the equivalent of an asset register which maintains a record of all software held together with the supporting licences. This information should be regularly updated.

- **Are regular checks carried out to ensure that all software is supported by an appropriate licence?**

Regular independent manual and electronic checks should be carried out to reconcile the software in use with the licences held. This is important to ensure that departments are not exposed to non-compliance with contractual obligations should they not have sufficient licences. Alternatively, checks should identify instances where departments have more licences than they need.

Part 1

Introduction

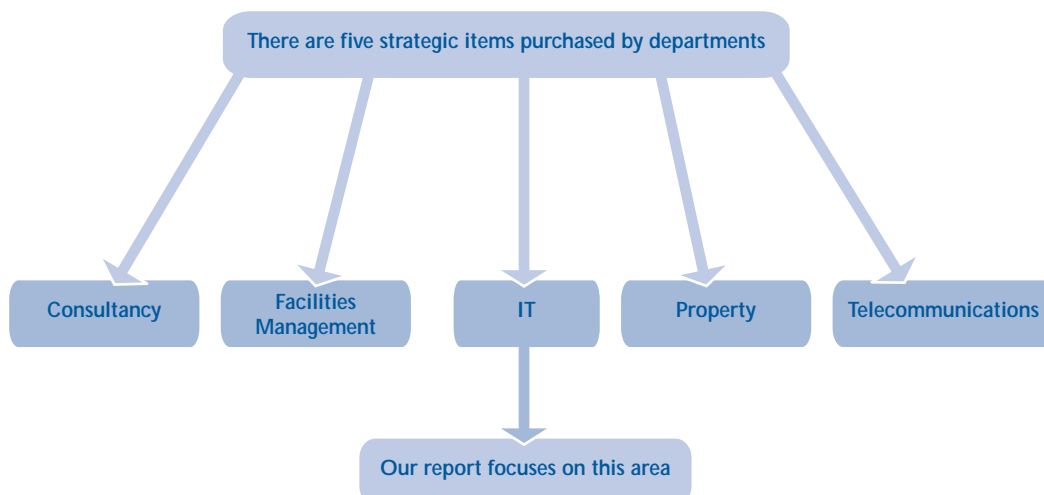
- 1.1 Procurement is becoming more complex. Some goods and services are of strategic importance to government such as IT and communications because they are purchased by nearly all departments and without them it would not be possible to deliver key public services. Typical risks that need to be managed are ensuring continuity of supply, quality and fit for purpose, and long term cost effectiveness. At the same time, globalisation and contracting markets mean that in some cases there may be only a small number of suppliers - thus making it difficult to rely on traditional forms of competition to achieve value for money.
- 1.2 The Office of Government Commerce (OGC) exists to promote value for money in how departments undertake procurement. One way it is seeking to do this is to identify strategic suppliers to government, to monitor their performance and to represent the collective interests of departments where prices appear excessive or quality is less than satisfactory (Figure 4). Departments are responsible for their own procurement but for some strategically important items, such as IT, OGC seeks to take advantage of departments' collective buying power and negotiate favourable agreements with

suppliers which all departments can benefit from. This report considers the approach adopted in purchasing and managing software licences which are an essential component of IT which itself is strategically important to the delivery of public services.

Why departments use software

- 1.3 Departments and agencies are heavily dependent on IT systems, comprising a wide range of hardware, software and telecommunications equipment, to deliver services to the public. Most public servants now have a computer on which they rely for word processing, e-mail, access to the internet and to provide access to more complex data systems, for example payroll, accounting and sharing information. In addition there are increasingly complex technical uses within departments or for linking different departments. For example the Met Office uses software to provide forecasts of severe weather, such as heavy rainfall which are used by the Environment Agency when assessing the risk of flooding, or severe cold which alert hospitals to possible increases in demand for beds.

4 Key strategic supply items for departments and agencies



All software requires a licence

- 1.4 The majority of software used by departments is produced commercially by software companies. Companies sell software subject to conditions governing its use; these conditions are set out in a licence. The licences are legally binding agreements between the software companies and the user of the software. They set out how the software should be used, outline any technical support to correct faults and how the supplier may provide improved versions (often known as upgrades) and set out restrictions to prevent the abuse of copyright by illegal or unauthorised copying. In common with all other organisations, departments must comply with licence agreements, which may also include an arrangement for suppliers to audit users to ensure that they are complying with the licence terms.
- 1.5 Software licences are sold in a variety of forms with companies offering different types of licences (Figure 5). A company may offer various alternatives, for example Microsoft has licences for perpetual use, without any further payment, as well as licences which need to be renewed each year. Companies selling licences for perpetual use often include technical support and upgrades for a limited period. After that period expires, the customer can continue to use the software but will need to purchase new software and associated licences to receive any improved versions. Some companies may only sell particular types of licence, for example a concurrent user licence (limiting the use of the software to a maximum number of staff at any one time) rather than a machine specific licence or a site licence (which allows everyone on the site to use the software).

5 Software companies sell a variety of different types of licences and not all are available on all software

The main types of software licences are:

- A **site licence** allows all users at a particular location to use the software;
- An **organisation specific licence** allows all users within the organisation to use the software;
- A **per processor licence** allows an unlimited number of users to use the software, sometimes held on a central processor;
- A **machine specific licence** allows software to be used only on a particular PC, this is sometimes known as a per seat licence;
- A **number of users licence** specifies the maximum number of users permitted to use the software; and
- A **concurrent licence** allows the software to be used concurrently by a specified maximum number of users.

All the above licences may be **annual**, for a **fixed period** of time or **perpetual**.

Source: National Audit Office

- 1.6 Departments use many different types of software all of which may require separate licences. Figure 6 shows the wide range of software and different types of licence that are provided by suppliers.
- 1.7 Ten companies provide the majority of licences purchased by departments. Ninety-five per cent of departments and agencies use some form of Microsoft software. While Microsoft is by far the largest supplier, accounting for 775,000 licences, 70 per cent of all licences held by departments, many are for desktop software and have separate licences for each machine. In contrast other suppliers, such as Oracle, have other licencing arrangements that provide flexibility for the licence holder, for example per processor licences where the payment depends on the number of processors and is independent of the number of users; or per user licences where users may access many databases across many different processors.
- 1.8 Departments can also write their own software or customise software packages (often called bespoke software) which will involve using commercially produced software development tools. Departments use these types of packages, for example to assess claims for benefits and for processing passports and driving licences. When using software tools, departments and their contractors need to have licences to develop the systems that run the software in order to create and manage databases.
- 1.9 An alternative option, as yet not widely used in the public sector, is open source software, which is freely available to download over the internet. Programmers develop open source software, often collaboratively, and groups of users provide mutual support when using the software. Open source programmes do not have any warranty or require users to have licences², and any department using open source systems has to provide its own technical support and would often be reliant upon user groups. Since July 2002 all public sector organisations have been required to consider open source software solutions, alongside proprietary software packages when procuring IT³. Open source software is expected to become an increasingly viable alternative to proprietary software packages.

Who is responsible for purchasing and managing software licences

- 1.10 Departments are responsible for determining their software requirements and, depending upon their business needs, generally purchase software and software licences in three main ways (Figure 7).

² Open source software should be distinguished from free to download software, such as Adobe Acrobat Reader, which does have a licence for which users are not charged at present.

³ "Open Source Software Use within UK Government", Office of the e-Envoy and Office of Government Commerce, July 2002. Further guidance on appraising open source software is set out in "Guidance on implementing open source software", Office of Government Commerce, September 2002.

6 Departments use a wide range of software with different sorts of licences

Server Application Software

- Internet access
- Firewall software to block hackers eg Checkpoint
- E-mail eg Exchange
- Databases eg Oracle
- Software facilitating collaborative working eg Lotus Notes
- Anti-virus management software
- Desktop audit software eg Epolicy orchestrator



Types of Licences

- per server
- per processor, some servers have more than one processor
- per user connected

Network software

- Network management software such as Compaq and Novel
- Monitoring tools



Types of Licences

- per processor
- per user connected

Standard user



Desktop software

- Operating system eg Windows XP
- Word processing and spreadsheets such as MS Office, Star Office
- Anti-Virus software such as McAfee
- Image manipulation such as Photoshop
- Voice recognition software such as Dragon
- Web browser software such as Netscape
- Software to format documents such as Adobe Acrobat

Types of licences

- per user
- per seat
- concurrent user

User of more complex systems



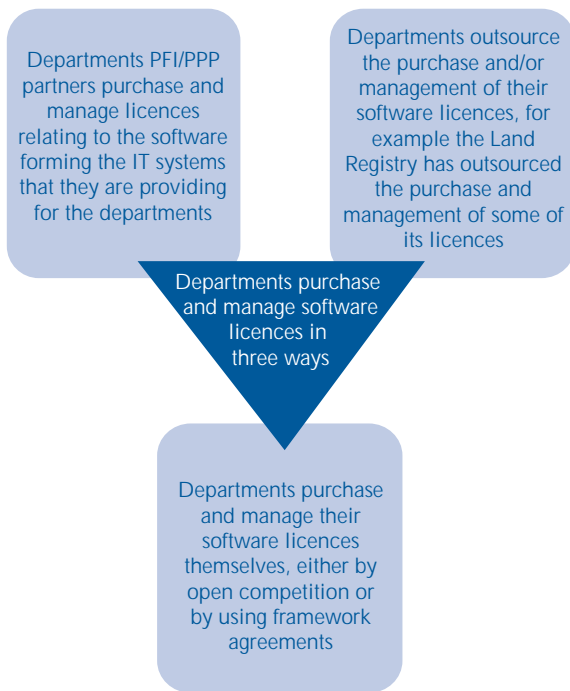
Desktop software and application software

HR, payroll, accounting applications and data sharing and management systems using applications and databases from companies such as SAP, Oracle, Peoplesoft, Baan

Types of licences

- per user
- per seat
- concurrent user

7 Departments purchase and manage software licences in three main ways



Source: National Audit Office

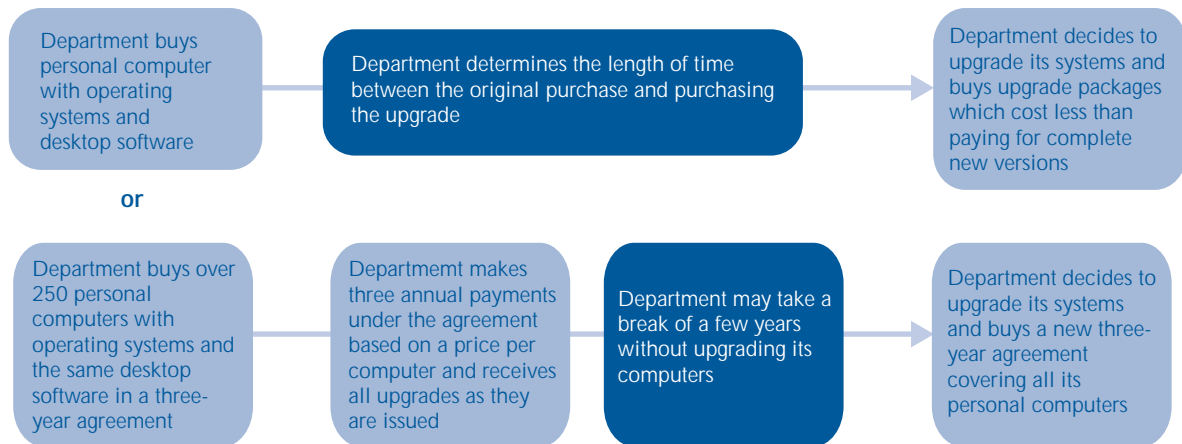
Why OGC negotiated Memoranda of Understanding with IT suppliers

- 1.11 Departments have always bought software and licences from Microsoft's approved retailers under individual deals that they negotiated. In addition to the worldwide licence terms that Microsoft offers to businesses, they also offer reduced price software and licences to academic users in schools and universities including those central and local government organisations responsible for education in each country.
- 1.12 In May 2001 Microsoft announced their new licencing arrangements to operate worldwide from August 2002 (Figure 8). Departments considered that the main impacts of the changes were:
- **To increase their costs** either by having to pay annually to receive future software upgrades when they were released (Microsoft's new Software Assurance) or having to pay for full versions of the software packages when they decided to upgrade their software.
 - **To produce pressure for more frequent upgrades** which, if they materialised, could have significant resource consequences for departments in terms of staff involved in upgrading systems, training costs, support services and possibly new computer equipment.
- 1.13 OGC, departments and local authorities assessed the likely additional costs they would incur from these changes as being in the region of £40 million to £60 million per year. In response OGC started negotiations with Microsoft to secure more favourable terms. In February 2002, OGC and Microsoft agreed a Memorandum of Understanding to run for three years from March 2002. The Memorandum sets out the principles under which Microsoft will conduct business with the public sector⁴ including software licencing, and the pricing and discount arrangements it will offer.
- 1.14 Microsoft considers that it has been able to offer significant discounts to the public sector because of the volume of purchases it makes, in excess of any other customer in the UK. The level of discounts depends on the volume of software which the public sector purchases, including any purchases under deals negotiated prior to the Memorandum. Once the volume of purchases has triggered a certain discount rate all departments subsequently purchasing software can benefit from it - in effect paying lower prices than those who purchased earlier. Microsoft does, however, charge these lower prices in subsequent annual payments made by departments who purchased earlier.
- 1.15 Microsoft requires its customers not to reveal the level of discount received by third parties and, in the absence of any comparative information, we are unable to determine whether the levels of discount being offered are significantly better than those Microsoft gives to other customers. Departments are not obliged to use the Memorandum; for example if they have outsourced contractors purchasing software on their behalf they can use any agreements that the contractor has negotiated with Microsoft. Thirty-one departments have already signed up to the Memorandum and others may be delaying signing up until the second and third year of the agreement to coincide with their own purchasing cycle. OGC has emphasised, however, that it is in the interests of all departments to use the Memorandum so as to increase the overall levels of discount and value of savings that can be achieved for the public sector as a whole.

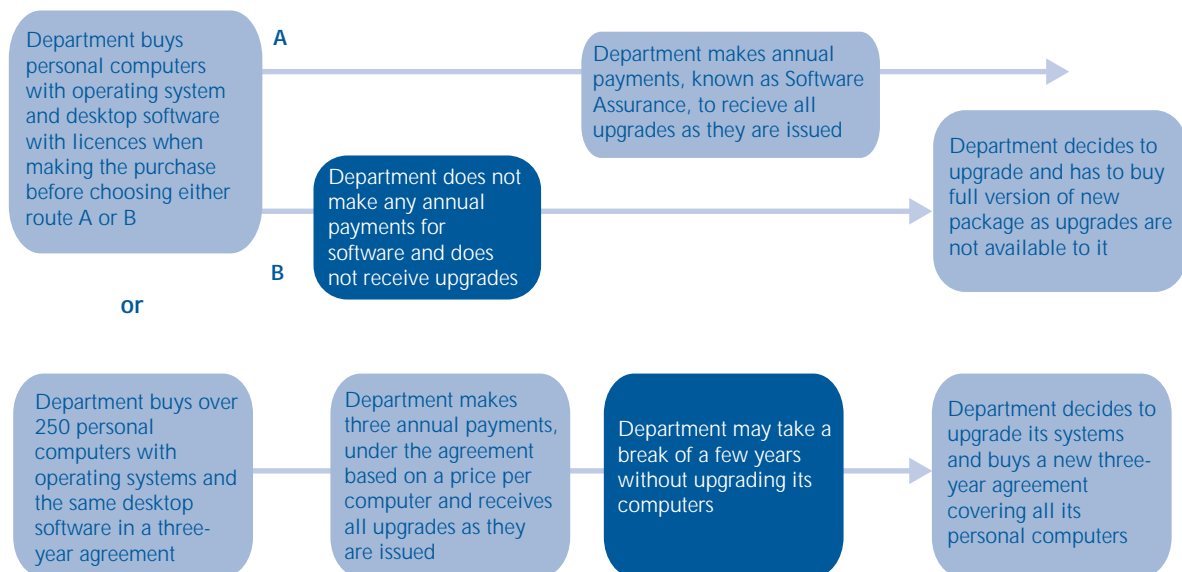
⁴ OGC negotiated the Memorandum on behalf of the whole public sector and it can be used by central departments, agencies and non-departmental public bodies, the NHS, local authorities, police authorities, fire authorities, the House of Commons, the House of Lords, the National Assembly for Wales, the Scottish Executive and the Northern Ireland Devolved Administration. Companies such as EDS, who are PFI or PPP partners providing services to departments, can purchase licences under the terms of the Memorandum unless it is clear that the department involved would not take ownership of the assets at the time or at some future date.

8 The changes in Microsoft's licencing arrangements from August 2002

Microsoft's licencing arrangements before August 2002



Microsoft's licencing arrangements after August 2002



Source: National Audit Office analysis of the change in arrangements

1.16 OGC also secured similar agreements with Sun Microsystems, and Lotus/IBM. OGC estimated that if departments and agencies took advantage of these Memoranda, there would be a total saving of some £100 million in the three years from March 2002 through a combination of direct price reductions, productivity improvements and efficiency gains and that most of the saving would be generated by the deal with Microsoft. It estimated the savings from direct price reductions alone as £36 million. Should departments purchase their software from suppliers other than Microsoft, or use open source software, there would be a consequent impact on the estimated level of savings

delivered by the Memorandum with Microsoft. The lower cost of these alternative sources of supply would, however, result in savings to departments.

1.17 In June 2002, OGC secured a further agreement with another supplier Corel. OGC's aim in negotiating these agreements is **(i)** to take advantage of departments' and agencies' considerable collective buying power to secure favourable terms, and **(ii)** encourage departments to procure from a range of companies where practicable to do so, to reduce their reliance on single suppliers. All the agreements place an obligation on suppliers to offer the negotiated terms to departments and agencies. To

promote awareness and take up of the arrangements, OGC has issued guidance and provided advice through central contact points and through its website.

1.18 Corel, IBM and Sun told us that the response to the Memoranda so far had been disappointing, and that it had made very little impact on the amount of business that they received from departments and agencies. Only Sun considered that there could be a significant increase in the future as several public sector organisations were evaluating the Office package which the company offered.

1.19 In February 2003 OGC agreed a three year Memorandum of Understanding with Oracle to work together on ways of developing standardised IT systems based on common requirements so as to cut back on duplication of effort and costly customisation of systems. The deal guarantees best overall prices and terms on Oracle software to the public sector. OGC expects the agreement to secure a reduction of 11 per cent on average in the cost of purchasing products and support both directly and indirectly from Oracle. It is too soon for us to be able to assess the impact of this Memorandum.

How we approached the study

1.20 Most organisations depend heavily on software to deliver their services and run their business processes. Purchasing software licences is no different from any other form of procurement and standard principles of good practice should be followed. Departments should

(i) justify the need for the purchase - including having reliable information on the number of software licences they hold to avoid any duplication or unnecessary procurement; (ii) adopt the most cost effective procurement route including taking advantage of centrally negotiated agreements, and (iii) ensure that expenditure delivers value for money. This study assesses how departments purchase software licences and manage their use of them to meet these principles.

1.21 Our findings are based on:

- A survey of 66 departments⁵ and agencies to obtain comparative quantitative and qualitative data on the number and type of licences held, what the licences permit the departments to do, the cost and performance of the software and whether departments and agencies are beginning to use the OGC's Memoranda of Understanding with software suppliers;
- More detailed case examinations of how four departments purchase and manage their software licences - Department for Education and Skills, HM Land Registry, the Ministry of Defence and the Ordnance Survey; and
- Interviews with software suppliers - Microsoft, Lotus/IBM, Corel and Sun Microsystems - to obtain their views on how the Memoranda of Understanding were working in practice.

Appendix 1 sets out our approach in more detail.



⁵ Our survey excluded the Inland Revenue and the Valuation Office Agency as the IT supplier partnerships which provide the majority of their IT systems are being retendered under the ASPIRE project. The Inland Revenue considered that public disclosure of any material could jeopardise their negotiations.

Part 2

How departments purchase software licences

- 2.1 To assess how software licences are purchased we surveyed 66 departments, agencies and non-departmental public bodies (departments) in October 2002. Of these, 55 departments were responsible for purchasing at least some of their own software and provided us with information on how they did so⁶. Our findings are set out in this part of our report.
- 2.2 Analysts⁷ estimate that the total amount spent by the public sector on software each year is around £1.6 billion and estimate that central government spends annually some £610 million on software. Not all of this expenditure is on software licences, and from their responses to our survey we estimate that in 2001-02 departments⁸ spent just over £100 million on licences. This represents some five per cent of their £2.1 billion expenditure on information technology as a whole. Whilst this proportion is relatively small, operating appropriate and effective information technology, including licenced software, is essential for nearly all departments to deliver public services.
- 2.3 In responding to our survey, nine departments were unable to provide data on the cost of their software licences or their total IT expenditure because of the way in which they record and categorise expenditure. For example, in some cases licences had been bought as part of an overall package of software, hardware and support from companies; departments could not identify separately the proportion that they spent on the licences. If departments are not able to identify their expenditure on licences, it is much more difficult for them to be able to assess fully which of the various deals available for purchasing licences is likely to be the most cost effective. It is also more difficult for them to consider the costs of different types of licences and whether it would be more cost effective to change suppliers.
- 2.4 In 2001-02 departments' individual expenditure on software ranged from £4,000 to over £60 million. The level of expenditure is largely explained by two factors:
- **Number of staff and locations** - those responding to the survey had staff numbers ranging from just over 100 to 140,000, and almost a third were located in over 50 sites - the majority of which were using some form of software. The size of an organisation can have a direct impact on the software used and the licences needed; and,
 - **Type of use made of software** - almost all organisations used software for standard desktop functions and administrative support systems, but many also used more specialist software, such as for telecommunications or statistical analysis.
- 2.5 All departments were able to provide details of their licences, what they covered, and who they were purchased from. Several departments with large numbers of staff working in a wide range of separately located business units, such as the Ministry of Defence, which have traditionally used devolved arrangements for the purchase and management of software are now introducing centralised arrangements, where appropriate, to improve the information they have on the location of their licences, what they cover and who they were purchased from. **Figure 9** shows that almost all departments (95 per cent) have purchased Microsoft software licences. Of the other nine major software suppliers the percentage of departments using the supplier varied from six per cent (Corel) to 53 per cent (Oracle).
- 2.6 The most important factors influencing the costs of software licences are the terms offered by suppliers, the number of users and sites, and business requirements, for example the need to upgrade software or to have different security requirements across an organisation.

⁶ The information provided through the survey was validated through more detailed examinations of the Ministry of Defence, Department for Education and Skills, Ordnance Survey and the Land Registry.

⁷ Kable Ltd - Public Sector Overview Spend Forecast, 2003.

⁸ Excluding the Inland Revenue.

9 The majority of departments use software from Microsoft and Oracle

Supplier	Proportion of departments using supplier (%)	No. of licences held by departments (000)
Microsoft	95	775
Oracle	53	20
Adobe	32	6
IBM	32	39
Sophos	30	161
Symantec	30	5
Novell	29	61
Winzip	21	36
Sun	21	5
Corel	6	1
Total		1,109

NOTE

Many of the licences are for desktop software and separate licences are purchased for each product on each machine. In contrast other suppliers supply single licences that allow many users to use the product, for example network software, or one licence for a single product used concurrently by many users, for example a database.

Source: National Audit Office survey of departments. Sixty-three departments provided information on this question.

Risks to value for money in purchasing software licences

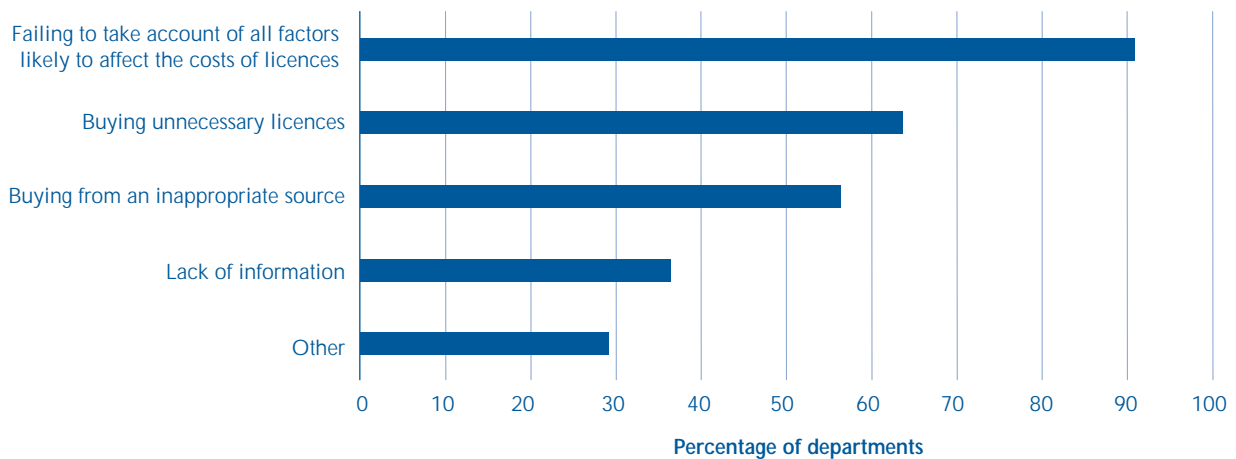
2.7 Our survey found that departments recognise they face a number of risks when they purchase software (Figure 10). These are:

- Failing to take account of the full range of factors likely to affect the cost of licences**, such as extra costs of maintenance or upgrades, compatibility with existing software and the likely level of demand for the software (including both having insufficient IT capacity or having too many software licences);
- Buying unnecessary licences**, for example through failure to maintain proper records or duplicating IT applications already in place in other parts of the organisation;
- Buying from an inappropriate source**, for example how departments purchase licences with the risk of failing to take account of discounts negotiated by OGC or continuing to use unreliable suppliers; and
- Not having reliable market intelligence**, for example requiring sufficient knowledge and understanding about IT and what is a reasonable cost so that departments can be intelligent customers in dealing with suppliers.

2.8 The remainder of this part of the report sets out how successfully departments have dealt with these risks.

10 The main risks to value for money when purchasing software licences

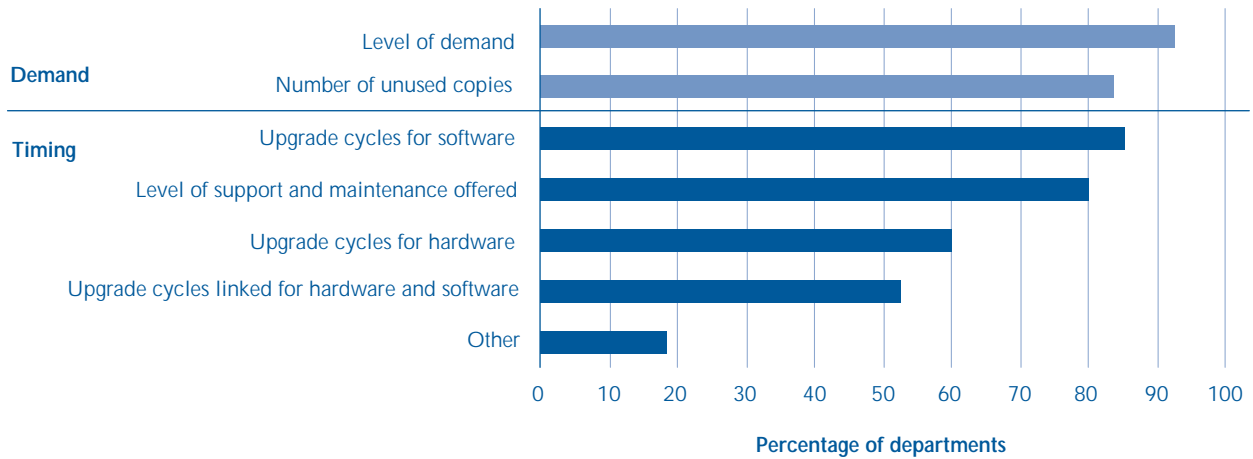
The main risks to value for money that departments face when purchasing software licences are: failing to take account of the full range of factors that affect price, buying unnecessary licences and buying from an inappropriate source.



Source: National Audit Office survey of departments. Fifty-five departments provided information on this question and could tick more than one option.

11 The most common factors that departments consider before purchasing

When purchasing software licences, the most important factors departments take into account are: the level of demand within the organisation; upgrade cycles for software, and the number of unused copies of licences already purchased.



Source: National Audit Office survey of departments. Fifty-five departments provided information on this question and could tick more than one option.

1 Factors considered before purchasing software

2.9 Our survey found that departments take account of a number of factors before they decide to purchase software licences (Figure 11). The two most common are:

- **The level of demand** throughout the organisation for the software a department plans to purchase and the use that it can make of any existing unused licences; and
- **The timing of the purchase** - for example departments seek to co-ordinate their purchasing of new and improved software with their purchase of new computer equipment. This is largely to avoid purchasing upgraded software that cannot operate effectively with existing equipment.

2.10 Decisions to purchase new software are largely influenced by (i) the business needs of the department, for example whether the software will improve its operational efficiency or effectiveness and whether it will be compatible with existing software; (ii) the scope for obtaining price discounts especially through purchasing in large volumes, and (iii) opportunities to use pre-existing deals such as IT catalogues and framework agreements (Figure 12).

2.11 Often the cost of new software or upgrading it may only represent a small proportion of the total cost of ownership. Additional costs will be incurred in installing the software, retesting the entire system to ensure that the new software is fully compatible and works as intended, and in retraining users. Less than 45 per cent of departments (24 of 55) said that they considered the total cost of ownership before purchasing new or upgraded software.

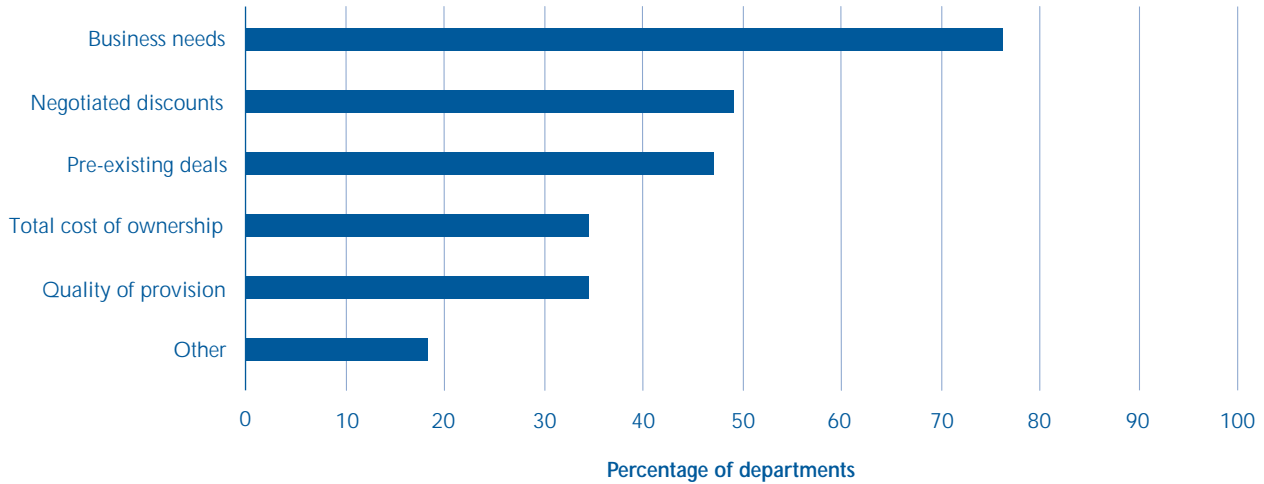
2 Avoiding buying unnecessary licences

2.12 Departments generally manage the risk of buying licences for which there is no demand, and would therefore add little value, in two ways: (i) most commonly, departments exercise central control over the procurement of licences, for example by using an expert group such as an IT Committee to review and approve the purchase (40 departments adopted this approach); (ii) a business case is required to justify the expenditure (52 departments did this).

2.13 The advantage of controlling the purchase of software centrally is that it should provide greater assurance that expenditure is fully justified and that the wider needs of the organisation are being considered. By centralising the purchase of software, departments may, however, face the risk of failing to be sufficiently responsive to their business units' needs. Some 46 departments (84 per cent) have either a single person or a centralised unit responsible for purchasing software licences. The size of some organisations, such as the Department for Work and Pensions and the Ministry of Defence, however, can make it impractical to centralise all control in this way. The Ministry of Defence, for example has delegated responsibility for purchasing licences to operational units such as the Warships Support Agency, the Defence Bills Agency and the Defence Geographic Imagery Intelligence Agency. In addition, these Agencies may have specialist software and associated licences which are not used elsewhere in the Ministry. While these Agencies and others have delegated responsibility for purchasing licences and having reliable data on them, the Ministry retains overall responsibility for ensuring that it has valid licences for all software used by its staff.

12 The most common factors that departments consider when they seek to obtain the best price for software that they purchase

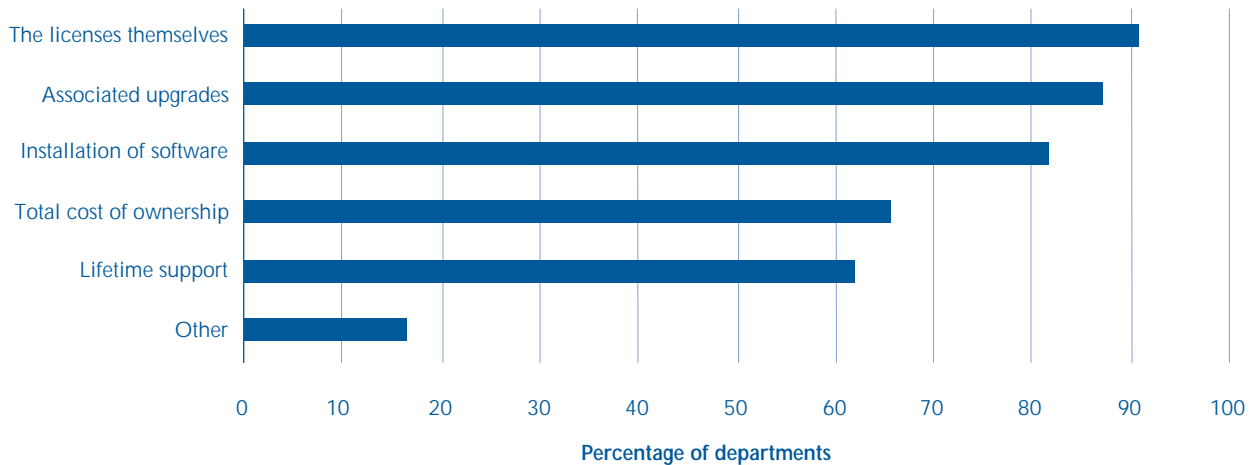
The most common factors that departments consider when they seek to obtain the best price are: business needs; the possibility of negotiated discounts, and pre-existing deals.



Source: National Audit Office survey of departments. Fifty-five departments provided information on this question and could tick more than one option.

13 The costs that departments consider when making business cases for the purchase of software licences

Departments tend to put more emphasis on short-term rather than longer term costs such as maintenance and support.



Source: National Audit Office survey of departments. Fifty-two departments provided information on this question and could tick more than one option.

2.14 The threshold value which determines whether the proposed purchase of software requires a business case ranged from £1,000 to £100,000. The wide range in value reflects the relative size of different departments' expenditure on IT. A sound business case should ensure that all costs are taken into account or that the proposed expenditure will support a strategic or operational objective. The business case should also consider whether the software supports the

department's overall IT strategy. Our survey results suggested that departments tended to give more emphasis to short-term costs such as the price of the software licences needed, installation costs, and upgrading existing software. Less consideration was given to longer term costs such as maintenance and support with the potential risk that the full cost of investment in IT may be understated. (Figure 13)

3 How departments purchase licences

2.15 Departments may purchase software and associated licences themselves, or use private sector partners to undertake the purchases on their behalf. Forty-four (67 per cent) of the departments responding to our survey undertook their own purchases, while twenty-two (33 per cent) had PFI/PPP partners responsible for acquiring the software needed for the service they were contracted to provide. Eleven of these departments had handed over full responsibility, including ownership of the licences, to their private sector partner.

2.16 In addition, departments may use outsourced contractors for their software purchases. Eighteen (27 per cent) of departments responding to our survey used outsourced contractors to purchase some or all of their software licences, for example the Land Registry has used Compaq to purchase licences on its behalf. The main benefits that departments consider they obtain from using outsourced contractors are: reduced administrative costs; transfer of assets (and accompanying risk); faster procurement, and being able to take advantage of the increased purchasing power of the contractor.

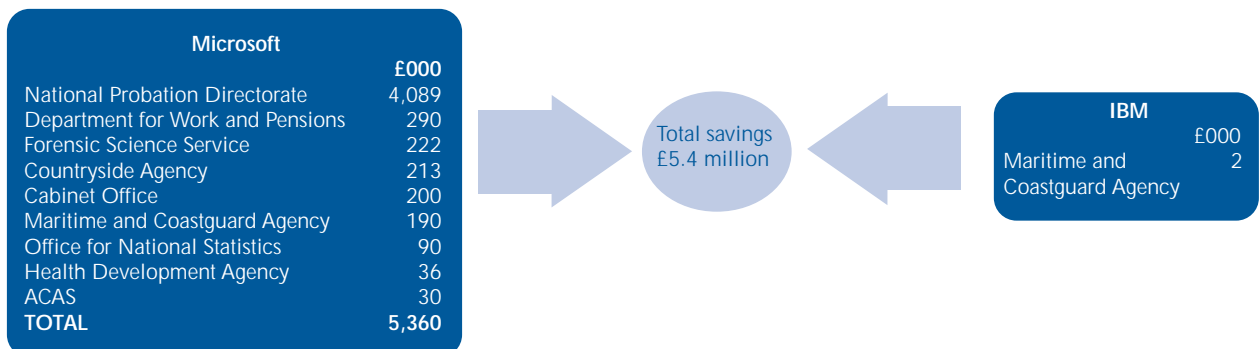
2.17 There were three potential drawbacks that departments considered they sometimes encountered in using outsourced contractors: a lack of clarity about which costs related specifically to licences; the fact that liability for non-compliance with licencing requirements may still rest with the department (since over 80 per cent of departments own the licences purchased in this way), and an increased risk of purchasing licences that are not required. While there may be benefits from using outsourced contractors, departments need to ensure that they have reliable and sufficient information on the costs, numbers and content of the licences that contractors purchase on their behalf.

Around half of the departments have made use of the Memoranda of Understanding established with software suppliers

2.18 The main methods used to purchase software and licences were:

- Thirty-one departments had so far used the Memorandum of Understanding that OGC had negotiated with Microsoft to upgrade their software for desktop computers and to upgrade their operating systems; five departments had used the Memoranda that OGC had negotiated with other suppliers;
- Ten departments were able to estimate the likely savings which they should realise from using the Memoranda; responses to our survey suggested that, to date, savings of around £5.4 million were being achieved almost all of which had come from Microsoft (Figure 14);
- The remaining departments had largely purchased their software and licences - mainly through separately negotiated agreements with suppliers - before OGC had established the Memoranda of Understanding; these departments may be waiting until their existing agreements expire before taking advantage of the new arrangements - there can be a cost in changing suppliers before an agreement has expired; and,
- Some departments, such as the Ministry of Defence, had taken the opportunity to negotiate their own agreements with Microsoft before their new licencing arrangements became effective in August 2002; others used agreements negotiated by their outsourced contractors which they considered provided better value for money than the arrangements established by OGC, for example the Land Registry has used an agreement negotiated by its outsourced contractor - Compaq.

14 Estimated savings made by using the Memoranda of Understanding



Source: National Audit Office survey of departments. Ten departments provided information on this question.

2.19 Although OGC monitors the value for money gains from procurement reported by departments, it does not have a formal process whereby departments are required to report specifically the level of savings they achieve from using each of the Memoranda. As departments have been unable to provide OGC with sufficient accurate data to monitor the take up of the Memoranda, the OGC has to rely on suppliers to report the level of discounts they have given to the public sector. From their returns, OGC estimated that savings of £31 million from direct price reductions had been achieved across the public sector by January 2003.

2.20 Where outsourced contractors achieve savings by using the Memoranda of Understanding there is a risk that these will be retained by the contractor with the result that the department does not benefit. Eighteen departments used outsourced contractors and five of these departments had arrangements for ensuring that savings were identified and that they received their share of them. The arrangements included open book accounting - giving departments access to the contractor's financial records - and using cost models to predict the likely level of savings prior to agreeing to a purchase; in this way departments have a good estimate of the total level of savings which should be achievable. The risk of departments not receiving savings also applies to deals that outsourced contractors agree with suppliers separate to the Memoranda of Understanding negotiated by OGC. Four departments (22 per cent) were able to specify how they ensured that they received savings from these separate deals for example, the Department for Work and Pensions requires EDS to submit cost models that demonstrate the savings secured.

4 Having reliable market information and intelligence

2.21 Departments need to have reliable market information on IT suppliers, their overall performance, the types of software products they can provide as well as some understanding of likely longer term technological developments. Such information and knowledge is important if departments are to be intelligent customers in their dealings with suppliers. For example departments need to ensure that the costs they are incurring are reasonable and comparable with the market average for similar deals - and that the IT products they purchase are appropriate and will not go quickly out of date.

2.22 Fifty-nine departments (90 per cent) indicated that they did seek reliable market information particularly on suppliers' performance. In most cases, this was through information networking or scanning of the specialist press. More proactive measures included accessing data from research organisations on latest developments in IT (four departments did this) and requiring software suppliers to confirm that a deal is at least as good as those that the company had agreed with other clients within a certain timeframe (four departments did this). Subscribing departments can access information, experience and support networks for those procuring and managing IT through the OGC Foundation which provides market intelligence on the IT industry including software licences. Less than half of the departments (43 per cent) we surveyed said that they explicitly drew on this information.



Part 3

How departments manage software licences

3.1 The value for money departments receive from software licences can be adversely affected by a number of risks:

- **Using software that is not appropriate to a department's work or compatible with its IT systems** - such an instance might arise where staff purchased software for a specific use, such as data analysis or records management, which was not consistent with its IT strategy or had limited use because it could not be integrated with other software applications;
- **Not ensuring that all software is covered by a licence** - for example by failing to detect and prevent staff from using unlicensed software resulting in the breach of contractual and legal obligations;
- **Wasting money by paying for more licences than is needed** - for example by continuing to pay for licences covering software which is no longer used or which is now technically obsolete; and,

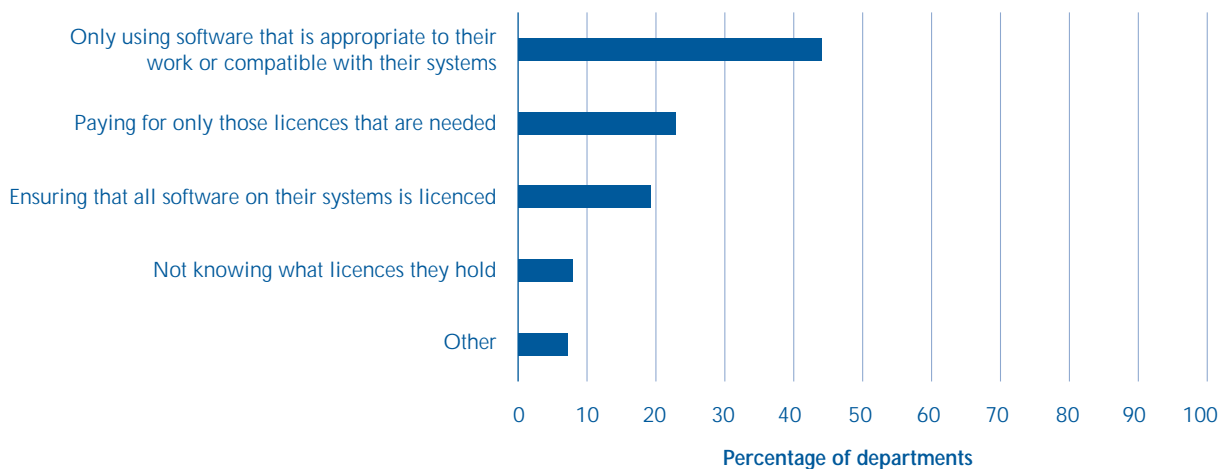
- **Not knowing what licences are held** and so being unable to determine, for example, whether a department is paying for too many or has too few licences or whether there is scope to have a site licence rather than individual licences which allows all staff working on the site to use the software.

3.2 **Figure 15** shows that departments consider that ensuring that software is appropriate to their work and compatible with their systems is the most important requirement.

3.3 Managing these risks to value for money requires **(i)** having reliable and up to date information on software in use and licences held; **(ii)** reviewing how software is used, and **(iii)** regular checks to ensure that software is covered by an appropriate licence.

15 The most important factors affecting the approach of departments to managing their software licences

Departments are most commonly influenced by the need to use only software that is appropriate to their work and compatible with their systems, paying for only those licences they need, ensuring all their software is licenced and knowing what licences they hold.



Source: National Audit Office survey of departments. Fifty-five departments provided information on this question.

1 Having reliable and up to date information

3.4 When they purchase software, departments do not own it - they only acquire the right to use it. A requirement of the licence is that they must be able to account for the location and movement of the software covered and this responsibility can only be met if adequate and appropriate records are kept so that software and supporting licences can be regularly reconciled. If departments fail to keep accurate records of their software and licences, they may waste money by, for example, purchasing more sophisticated software than they require or buying software licences when unused copies are available elsewhere in the organisation. Departments may also not be in a position to negotiate the best deals for technical support through, for example, aggregating their requirements because they are unaware of how many licences they hold with each supplier.

3.5 Departments adopt a combination of approaches (Figure 16) to ensure that they have complete and accurate information on the software in place and supporting licences purchased:

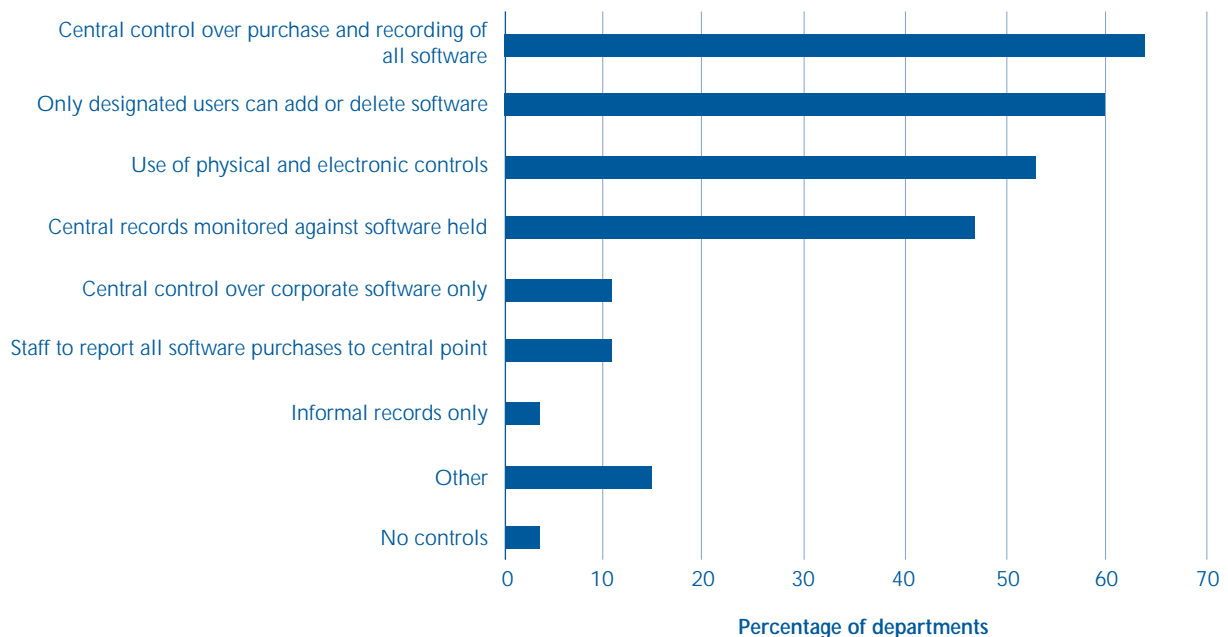
- Requiring software to be purchased centrally so that information can be more easily captured on the number of licences held; such an approach depends on staff informing the central point when a licence is no longer necessary because the software has ceased to be used (35 departments adopted this approach);

- Only allowing authorised users to access systems to add or delete software - those authorised are also responsible for maintaining accurate records of changes to software (33 departments did this for some of their software); and,
- Monitoring central records to ensure that they are amended as new software is purchased or deleted (26 departments did this).

3.6 All of the 55 departments that purchased their own software had some form of approach, which included a combination of the above, to ensure the accuracy of their records. Several departments that have traditionally used devolved arrangements for the purchase and management of software are now introducing centralised arrangements to ensure the accuracy of their records. The Ministry of Defence, for example holds its records within its business units rather than centrally. Within the Ministry, the Defence Communication Services Agency is introducing a project to provide central control of software, where appropriate, rather than having numerous systems that are each tailored to support specific and individual user business needs.

16 Departments use a range of approaches to maintain complete and accurate records of software licences

To ensure they have complete and accurate software records, departments most commonly centralise the purchase and recording of their licences and only allow designated users to add or delete software.



Source: National Audit Office survey of departments. Fifty-five departments provided information on this question and could tick more than one option.

2 Reviewing how software is used

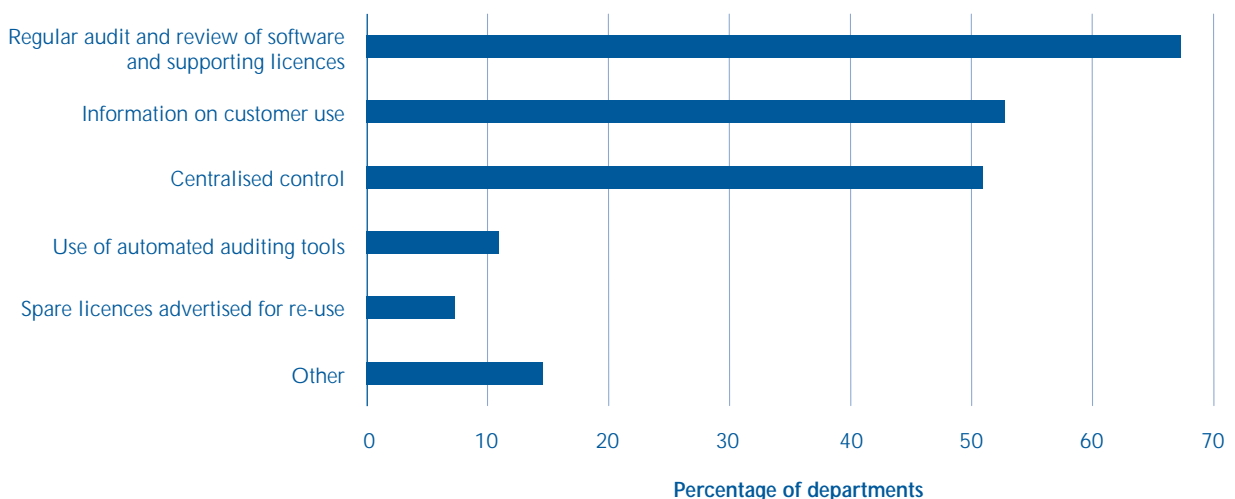
- 3.7 The justification for purchasing software will inevitably be wide ranging. In some cases the need may be well established, such as the introduction of a new financial management system or patient record database. In other instances, the justification may be less clear or its timing less critical; for example deciding when to upgrade existing software or integrate a supporting system making possible more advanced data analysis. Part 2 of our report emphasised the importance of a sound business case that sets out the total ownership cost of any proposed software. In addition, however, departments should keep under review how frequently they use software and for what purpose, so that they can identify spare capacity which may indicate scope to have fewer licences or where existing software is not meeting user needs. The latter could indicate that service delivery may be at risk if software cannot handle demand.
- 3.8 The most common methods that departments adopt to monitor how software is used - and by association how many licences are needed - are: **(i)** regular audit or review of software and supporting licences conducted at least on an annual basis - reviews typically checked whether the software was still being used before the department made any annual payment for the software licence - 37 departments adopted this approach; **(ii)** monitoring the use of different software - for example asking users to confirm that they still used software packages allocated to them and for what purpose - 29 departments did this, and **(iii)** exercising central control over the purchase and use of software and in obtaining the necessary licences - 28 departments did this. Only six departments used automated audit tools to identify the use of software and only four advertised spare licences which had been identified as available for use elsewhere within the organisation (Figure 17).

3 Carrying out regular reviews to ensure that all software has an appropriate licence

- 3.9 As well as needing to know what software is in use on their IT systems departments need to reconcile this information with the licences they hold. This is important to ensure that only authorised software is being used, that all software has a valid licence and to identify unused licences. Regular independent reviews which facilitate such reconciliations are essential, particularly in large organisations having a number of dispersed business units with a wide range of functions where it may be difficult to keep track of software purchased. Departments carry out such reviews in different ways and with varying degrees of frequency. Four departments carry out manual checks of software and supporting licences at least every three months and 18 departments do this at least once a year. For the remainder, the frequency of reviews is more mixed with nine departments carrying out no checks (Figure 18).
- 3.10 Electronic checks can be carried out - for example a software package, Microsoft SMS 2003, can identify and locate all software currently in use on Microsoft systems for which a licence is required. Other tools also exist, such as Zenworks from Novell. Twenty departments undertake electronic checks of their software every three months and 23 departments do so at least once a year. Four departments - Companies House, the Foreign and Commonwealth Office, the Lord Chancellor's Department and OFSTED - carry out neither regular manual nor electronic checks of their software to reconcile it with the licences they hold. Companies House, however, is currently evaluating software packages that will allow it to perform electronic checks.

17 The most common approaches used by departments to review how effectively software is used

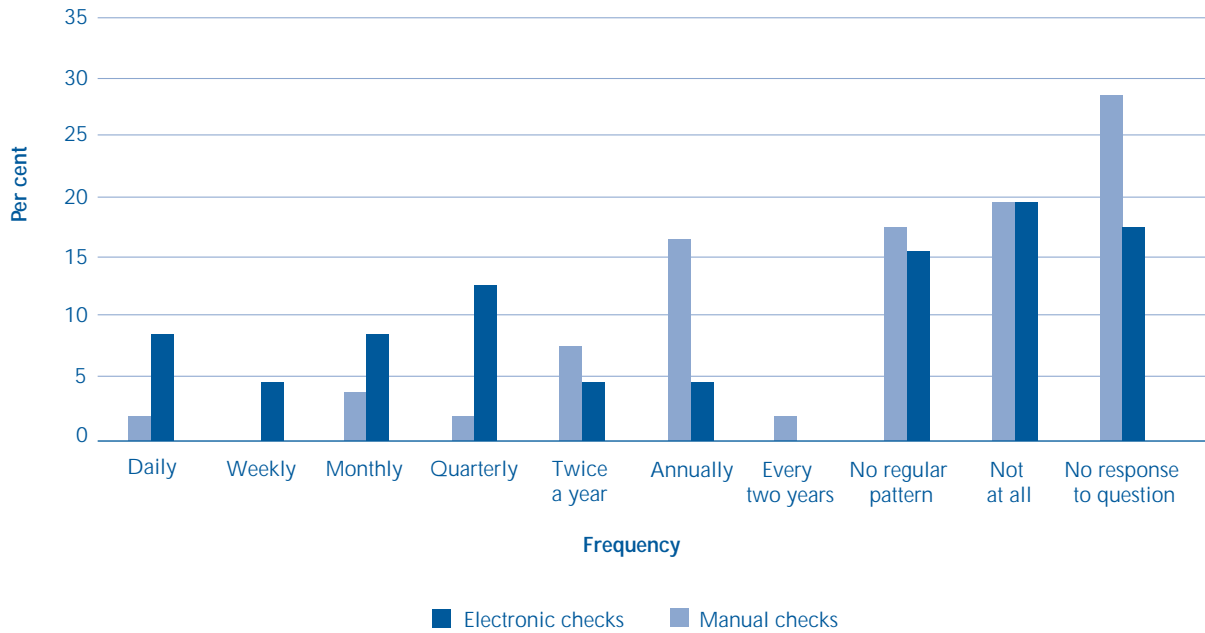
Departments most commonly use audits and reviews, customer information and centralised control to ensure they retain only the licences they need.



Source: National Audit Office survey of departments. Fifty-five departments provided information on this question and could tick more than one option.

18 The frequency with which departments check the software being operated on their systems with the licences they hold

Those departments using electronic checks on a regular basis most commonly do so each quarter and those using manual checks do so annually.



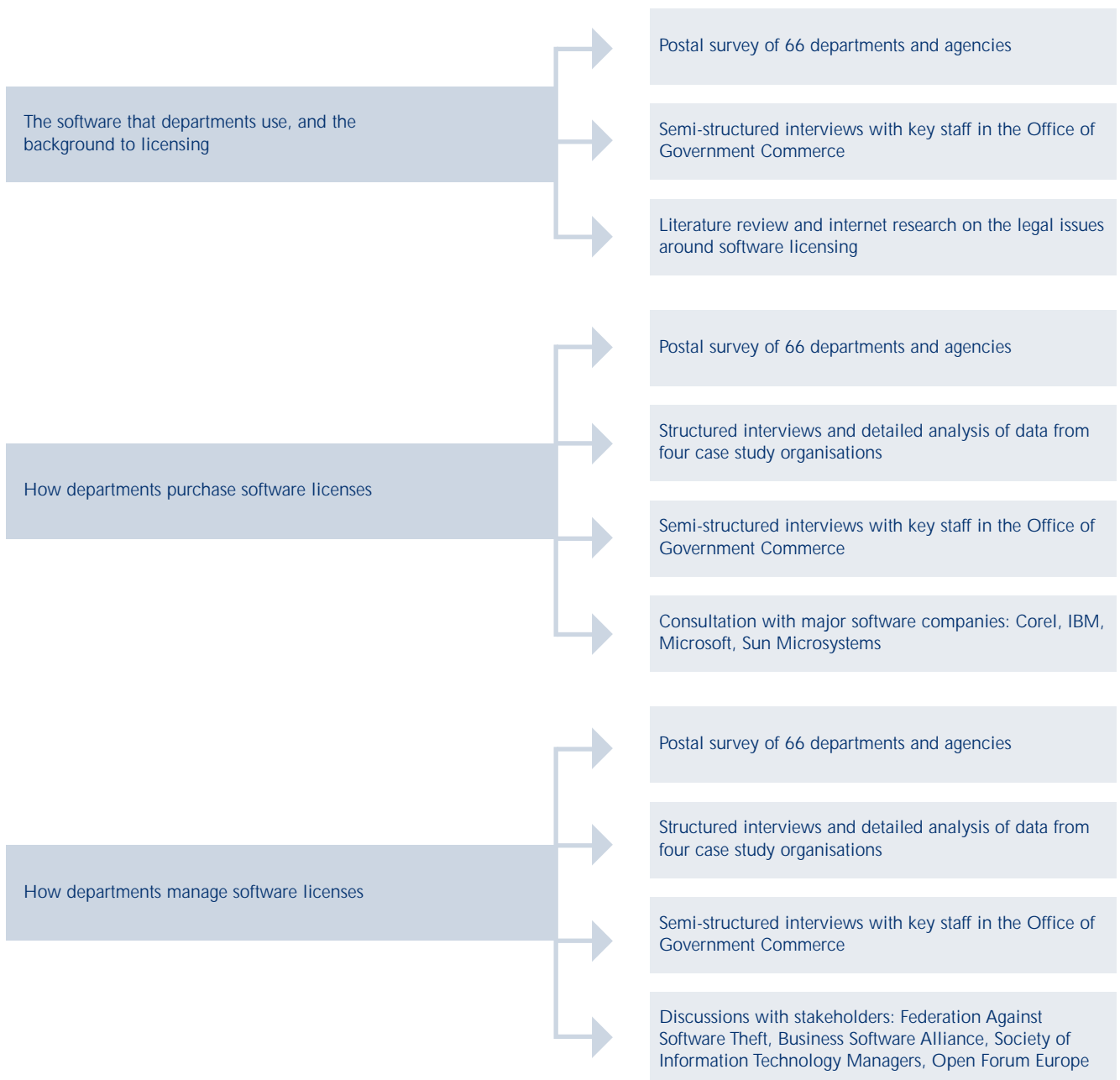
Source: National Audit Office survey of departments. Fifty-five departments provided information on this question.

Appendix 1

Our methodology

What we examined

What we did



Appendix 2

Department for Education and Skills

How the software supports the Department's activities:

To provide desktop operations and standard functions such as payroll and to operate financial systems.

How many staff use software:

Approximately 4,600.

How much the Department spends on software licences:

£1.7 million in 2001-02 including upgrades, maintenance and support and the cost of new purchases - approximately eight per cent of its total expenditure on IT.

Who are the main software suppliers:

Microsoft.

Does the Department use the Memoranda of Understanding negotiated by OGC:

No, the Department buys licences with discounts offered to academic organisations.

- 1 The Department for Education and Skills develops and implements policies and programmes in education and sets a framework of standards to be achieved by schools, colleges and universities. All staff use IT support and licenced software to carry out their work for desktop operations such as word processing and e-mail; to operate standard administrative systems such as financial systems and to run the Department's payroll system. The Department also uses specially designed software to allow it, for example to track all correspondence from the public and MPs.
- 2 The Department operates from five sites in four different locations: London, Sheffield, Darlington and Runcorn. The Department purchases and manages all of its software itself and is introducing an increasing amount of centralisation to enable it to have greater control over its software licences, for example to monitor the amount and type of software in place and to be more effective in protecting its data and managing information.

What software licences cost the Department

- 3 The Department cannot identify the proportion of its expenditure which was specifically on software licences. In 2001-02 it spent £1.7 million on software, including new packages, upgrades, maintenance and support as well as licences. Around eight per cent of its total expenditure was on IT.

How the Department ensures that the expenditure on licences is justified

- 4 The main means by which the Department controls expenditure on software licences is to monitor current usage of software and likely future demand influenced, for example by new systems and processes being introduced, upgrades of existing IT packages and changes in the number of staff required to use different software. The Department also requires a formal business case to be prepared before any software can be purchased.

How the Department achieves value for money when purchasing software licences

- 5 The Department requires business cases for new software to consider the longer term costs of future upgrades, other potential modifications and associated costs such as training and maintenance. This requirement is intended to ensure that procurement decisions do not focus unduly on the lowest price at the expense of achieving longer term value for money.
- 6 The Department has taken advantage of the prices for licences that Microsoft offers worldwide to those customers who work in and provide support to education, from schools, colleges and universities to central and local government organisations. These

prices are significantly lower than those available under the Memorandum of Understanding negotiated by the OGC but are not applicable to other departments.

- 7 With relatively small expenditure on software, the Department has less opportunity to use its buying power to negotiate discounts. Instead, the Department has used the G-Cat framework agreement negotiated by OGC to buy smaller items of software. Some IT suppliers such as Lotus and Plumtree/Semio are appointed through competitions under G-Cat to secure the best deal.

How the Department controls existing licences

- 8 When rolling out new software the Department will automatically remove from users' computer equipment any existing software that is no longer covered by the new licences or is incompatible with the new software. In this way, the Department can be confident that redundant software is no longer in use. The Department is undertaking a programme of work to reconcile information it has on the number of licences purchased with data on the actual number of licences held. Consequently, it is already confident that its software licence database is complete and accurate in around 75-80 per cent of cases. The Department recognises, however, that it needs to improve its control by identifying the location of software licences (ie who holds them within the organisation), the precise details of their terms and by improving tracking of changes.
- 9 The Department is a test site for Microsoft SMS 2003 - a software package which organisations can apply to identify and locate all the different software currently in use on their systems for which a licence is required. The Department plans to use this package to identify licences and associated software that it can re-deploy to avoid obtaining more software licences than required.

How the Department only retains those licences it needs

- 10 There is a risk that, collectively, the licences purchased by different parts of an organisation may exceed the number required in total. This is because separate divisions may purchase some copies of software and use it for a limited amount of time and other divisions may then subsequently buy the same package without realising there are spare copies. It is important, therefore, that an organisation has a central record of the licences in use, what they cover and when they are no longer needed. The Department is currently reviewing the different types of licences held by its five sites to ensure that in total it only holds those for which there is a clear legal and operational need.

Conclusions

- 11 The Department has taken advantage of favourable deals offered world-wide by Microsoft to organisations working in the education sector. As a result, it has been able to secure significant savings on each copy of the software which it purchases. The saving on Microsoft Office is around 70 per cent. This significantly exceeds savings in the pricing structure offered by the arrangements negotiated with Microsoft by OGC.
- 12 The Department is undertaking a programme to reconcile its purchases of software with its licence holding. It is, so far, confident that information on the software licences it holds is accurate in 75-80 per cent of cases. The Department recognises, however, that it needs better information on the location and terms of its software licences and on changes which affect them.

Appendix 3

The Land Registry

How the software supports the Land Registry's activities:

To maintain a register and map of land ownership in England and Wales and for standard office functions such as word processing and records management.

How many staff use software:

Around 8,000.

How much the Land Registry spends on software licences:

£10.1 million (including £1.9 million on software element of partnership contract with Compaq).

Who are the main software suppliers:

Microsoft, IBM, BMC, CA and Oracle.

Does the Department use the Memoranda of Understanding negotiated by OGC:

Yes.

- 1 The Land Registry is responsible for registering ownership of land in England and Wales and recording dealings, such as sales and mortgages, once the land is registered. Its more specialist software is used to update its Register and allow staff to carry out mapping functions. The Land Registry also has software to support typical office activities such as word processing, e-mail and financial management.
- 2 The Land Registry maintains all corporate data centrally. It has local offices around the country and its IT functions, including the purchase and management of software, are carried out by its IT Directorate, based in Plymouth, which works with a team from Compaq (its Private Finance Initiative partner) to purchase most desktop and server software and provide maintenance and support.

What software licences cost the Land Registry

- 3 In 2001-02, the Land Registry spent some £2.5 million on new licences and £5.8 million on maintenance. Together, these two items constitute just over half the £15.5 million total expenditure on IT. The Land Registry's contract with Compaq entails a total expenditure of £12.6 million each year, of which some £1.9 million relates to software.

How the Land Registry ensures that expenditure on licences is justified

- 4 The Land Registry requires a business case for all software purchases, including whole-life costs relating to ownership, installation and associated upgrades.

How the Land Registry ensures that it achieves value for money when purchasing software licences

- 5 Although the Land Registry recognises that it cannot be certain that any deal it secures is the best possible, it uses commercially available research data (from the Gartner Group) and belongs to technical forums and benchmarking clubs to obtain assurance that the costs of its software are reasonable.
- 6 By using a partner to deliver its desktop infrastructure services, the Land Registry benefits from reduced administrative costs, the increased buying power of its partner and a stronger link between hardware and software purchases - to ensure they are fully compatible - and to secure better prices by combining computer hardware and software purchases. Where possible, the Land Registry combines or links its purchase of desktop software with its procurement of computer equipment to negotiate a better deal. It considers that, as a result, it has obtained similar cost savings to those available through OGC's framework agreements.

How the Land Registry controls existing licences

- 7 The computers provided by Compaq come with a standard set of software, and central controls ensure that no external software can be loaded onto networked computers. Compaq uses an online tool to check for rogue items on the network and this has allowed the Registry to identify cases where staff have used incompatible software. The Registry has around 100 standalone computer packages, for which a local systems administrator ensures that relevant licences are maintained.

How the Land Registry only retains those licences it needs

- 8 The Land Registry conducts regular reviews of the software on its mainframes - revisiting each product annually when the maintenance invoice is received. It also seeks to identify those employees who use specialist software and to remove such software if their responsibilities change.

Conclusions

- 9 The Land Registry has developed a clear method for purchasing and managing software, built around the principle of centralised control. Its partnership with Compaq has the potential to offer savings. In addition, the Land Registry checks if other procurement routes (for example OGC-negotiated deals) provide better value for specific items. The practice of preventing non-standard software from being loaded onto networked computers is a powerful method of controlling existing licences.

Appendix 4

Ministry of Defence

How the software supports the Department's activities:

To provide standard desktop operations, such as word processing; to operate administrative systems, such as payroll; for specific applications such as stores, vehicle and property management, and to deploy and support armed forces personnel and equipment.

How many staff use software:

The activities of around 300,000 personnel either directly involve, or are supported by, the use of software.

How much the Department spends on software licences:

In 2001-02 the Ministry of Defence spent some £543 million on information technology of which around £60 million was on software licences.

Who are the main software suppliers:

Microsoft and Oracle.

Does the Department use the Memoranda of Understanding negotiated by OGC:

No, the Ministry uses an earlier agreement with Microsoft.

- 1 The Ministry of Defence (the Ministry) is responsible for the control, administration, equipment and support of the Armed Forces. The Ministry has some 100,000 civilian personnel and over 200,000 armed forces personnel whose activities either directly involve, or are supported by, the use of software. Without software the Ministry would be unable to carry out the vast majority of its functions ranging from operating standard administrative systems, such as payroll, to deploying and supporting the service personnel and equipment of the Army, Navy and Royal Air Force.
- 2 The Ministry's activities are based at over 1,800 locations in the United Kingdom and abroad ranging from its Headquarters in Whitehall to smaller sites dealing with support services such as storage, supplies and logistics. The Ministry has a large number of staff and agencies - and other defence organisations - and requires a co-ordinated approach to purchasing and managing software licences to harness the potential of obtaining discounts for bulk purchases. It has, therefore, developed a centralised approach to the purchase and management of software licences through the Defence Communication Services Agency.

What software licences cost the Ministry

- 3 In 2001-02 the Ministry of Defence spent some £543 million on information technology including around £60 million on software licences. In general, the Ministry holds details of software licences at business unit level rather than centrally.

How the Ministry ensures that expenditure on licences is justified

- 4 The Defence Communication Services Agency (the Agency) has established Integrated Project Teams responsible for the provision of information systems capabilities to the Ministry of Defence. Currently, individual business units procure their own software under established commercial arrangements negotiated centrally by the Agency, that are put in place following competition and that meet its value for money criteria. Each proposal to procure software has to be supported by a business case, based on whole life costs, that identifies how the software will be used and the benefits it is expected to deliver in terms of improved service delivery. Some systems are purchased and managed centrally and others are managed on a delegated basis.

All, however, have to follow the same business case process. The Agency is also putting in place a Defence Information Infrastructure project that will include for providing software under a central arrangement rather than under individual business areas and will be fully implemented by 2007.

How the Ministry ensures that it achieves value for money when purchasing software licences

- 5 One of the key risks the Ministry focuses on managing is staff purchasing new software on a piecemeal basis. When this occurs, new licences may be purchased which might not be necessary - for example because the software is covered by existing licences. To manage this risk, the Ministry has strengthened its central control over software purchases through the Integrated Project Teams. As a consequence, by minimising piecemeal software purchases, the Ministry should be in a better position to take advantage of discounts for bulk purchases.
- 6 In May 2001, the Ministry negotiated a three-year agreement with Microsoft based on the number of desktop computers it holds. This agreement was negotiated with the knowledge and agreement of OGC and the Ministry estimates that the agreement has the potential to save some £17 million over four years on expenditure on Microsoft software licences of £69 million. Microsoft subsequently changed its standard set of products and, as with all departments, the Ministry was given the opportunity to cancel its existing agreement and sign up to the Memorandum of Understanding negotiated by OGC in February 2002. If the Ministry had signed up to the Memorandum, however, it would have incurred additional costs through having to purchase extra software that is no longer offered in Microsoft's standard set of products. The Ministry found that its agreement provided greater value for money to meet its specific needs when compared to that negotiated by OGC. It therefore decided to remain with its existing agreement.
- 7 The Ministry also seeks to ensure value for money by appointing suppliers of non-specialist software through competition. Whenever possible, the Ministry has sought to include potential software upgrades and technical support in the fixed prices it agrees for software. At the same time, it seeks to retain flexibility so that the price it pays is not unduly influenced by the volume of software and associated licences it purchases.

How the Ministry controls existing licences

- 8 The Ministry undertakes regular electronic checks of the software held on its corporate systems and, for non-corporate systems, the Ministry applies a combination of manual and electronic checks. By using software packages, such as Microsoft SMS, the Ministry should be in a stronger position to identify and locate all the software currently used on its computer equipment and ensure that it has the appropriate number and type of licences. The Ministry does, however, recognise that, at present, it has only limited information, held centrally, of the types of software it has and where they are used in the organisation. To strengthen control, the Ministry only allows designated users to access systems to add or delete software; users who do not have appropriate authority are denied access by physical and software controls.

How the Ministry only retains those licences it needs

- 9 The Ministry conducts regular audits and reviews with users to establish whether there is a continuing demand for specific software, although it recognises that it needs to be more able to identify and locate the types of software that are operated on its systems. By introducing a greater degree of central control and using software packages, such as SMS, the Ministry considers it should be in a stronger position to identify and locate its software.

Conclusions

- 10 The Ministry has not used any of the Memoranda of Understanding established by OGC with software suppliers. The Ministry, with the knowledge of OGC, set up its own agreement with Microsoft to meet its specific business needs and estimates it will save £17 million over four years on software expenditure of £69 million. The Ministry is responsible for a large number of staff working in a wide range of separately located business units and has in place a number of centrally negotiated contracts to meet its business needs. It is, however, seeking to exercise more central control as a means of rationalising the number of licences it holds, and to develop a more co-ordinated approach to purchasing new licences.

Appendix 5

Ordnance Survey

How the software supports Ordnance Survey's activities:

Ordnance Survey uses specialist illustration and mapping software, along with a spatial database management system, to support its key business activities, and has standard office software to support its general functions.

How many staff use software:

Around 1,800.

How much Ordnance Survey spends on software licences:

£2.1 million.

Who are the main software suppliers:

Microsoft, SAP, Oracle.

Does the Department use the Memoranda of Understanding negotiated by OGC:

Yes.

- 1 Ordnance Survey is responsible for the definitive surveying and mapping of Great Britain. It aims to maximise the benefit of geospatial information for organisations and individuals. While well known for its paper maps, around 80 per cent of its revenue is earned from products accessed via electronic means.
- 2 The organisation manages the purchase of almost all software licences through one central point and considers it has significant buying power because of its reputation and the volume of many of its purchases.

What software licences cost Ordnance Survey

- 3 In 2001-02, Ordnance Survey spent almost £2.1 million on software licences, which constituted around ten per cent of its £20.6 million total expenditure on IT.

How Ordnance Survey ensures that demand exists before purchasing licences

- 4 An Investment Group, consisting of the Director of Strategy, Head of IT and Director of Finance, is tasked with ensuring that, for each proposed purchase above £10,000, there is a suitable business case, a statement of whole life costs, and clear evidence that the software is compatible with its longer term IT strategy.

How Ordnance Survey ensures that it achieves value for money when purchasing software licences

- 5 Ordnance Survey considers that the software marketplace is complex and that it is unlikely to develop sufficient knowledge to conduct negotiations from a position of strength. It therefore uses Computacenter, an outsourced contractor, to purchase on its behalf software, hardware and IT consumables. Computacenter provides a dedicated team to support Ordnance Survey's IT requirements, and undertakes to match or beat the best price available under the G-Cat framework agreements negotiated by OGC.
- 6 Ordnance Survey considers that it receives other benefits from this relationship, including technical advice, an opportunity to test products in business scenarios before purchase, and mini-competitions for higher value products run on its behalf by Computacenter. In order to ensure some on-going competition, it conducts some competitive procurement between Computacenter and other G-Cat suppliers when appropriate - for example when new servers are required.

How Ordnance Survey controls existing licences

- 7 In 2001, Ordnance Survey realised that it did not have a proper central record of its licences and decided to employ a software librarian to manage the licences for all off-the-shelf software. It also plans to carry out monthly cross-checks from its central record to software held on the network. It will do this by using Microsoft's SMS package which delivers a real-time display of software being used. This package will not, however, work in other operating systems such as Unix or Apple Macintosh which represent three per cent of Ordnance Survey's software applications, although Unix represents 60 per cent of the server operating systems.

How Ordnance Survey only retains those licences it needs

- 8 Ordnance Survey issues standard software with each computer, which is relatively straightforward to manage, and conducts periodic software audits to ensure the return or reissue of unwanted licences. It recognises, however, that in the absence of accurate records, and purchases being directed through an outsourced contractor, there has been a heightened risk of unnecessary purchase or retention of licences.

Conclusions

- 9 Ordnance Survey has developed a strategic partnership with Computacenter which is designed to provide purchase cost savings and technical or market knowledge which might otherwise be lacking. Within the organisation, the work of the Investment Group and the software librarian is helping to impose centralised control over licensing. Ordnance Survey is confident about its control of existing licences and the very low level of unauthorised software being used. It will, however, be important for the organisation to develop its checking procedures and ensure that staff are fully aware of their responsibilities with respect to software use.