

# Information matters: building government's capability in managing knowledge and information



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# Foreword

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In the twenty-first century, information is the force powering our democracy and our economy. Both the private and the public sector increasingly rely on information and knowledge, and create value through their ability to manage these valuable assets.

Successful societies and economies in the future will depend on how well they enable information to be appropriately shared while maintaining essential protection for those on whose behalf the information is held. They will depend on how well they learn from the information they hold, and how they use it to create new value, and on how well they deal with the new challenges that digital information presents, whether around security, sustainability or privacy.

Effectively managing and sharing public sector information has the power to improve individuals' lives and society as a whole, and even to drive economic growth. This opportunity comes with significant responsibilities, not least to protect individuals' data and privacy. The pace of change, and the challenges of the digital era, mean we're not only seeing new opportunities but are also facing new risks. Strong leadership, governance and professionalism in knowledge and information management will be key both to seizing opportunities, and to meeting the challenges ahead.

This strategy is designed to help government departments develop the frameworks, tools and culture needed to raise our capability. By improving professionalism in this essential field, in the same way that we have done in other government functions such as finance, IT and communications, we will be ready to seize emerging opportunities, and meet the evolving challenges, of managing information in an information age.



A handwritten signature in black ink that reads "Gus O'Donnell". The signature is written in a cursive, flowing style.

**Sir Gus O'Donnell**  
Cabinet Secretary  
and Head of the Home Civil Service

# Why information matters

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**“This is the century of information. Our ability to compete in the global economy, to protect ourselves against crime and terrorist attack, depends not just on natural wealth or on walls or fences but on our ability to use information.”**

The Prime Minister, **the Rt Hon Gordon Brown, 2007**<sup>1</sup>

1. More information is being created and held today than ever before. It is the lifeblood of virtually every service we use as citizens, whether run by the public or private sector. To deliver world-class public services and guarantee public accountability, government departments must ensure they capture and effectively manage information created and received. It is essential that information held by the government is kept securely. But this must also be balanced with the need to share information and knowledge in order to provide consistent and joined-up services to the public.
2. The benefits of good information management in day-to-day life are easy to take for granted, as illustrated by the ease with which we now renew tax discs online or use ATM machines easily across the world. Yet if information is managed badly, it can cause massive inconvenience and anxieties to those affected, or have even more serious consequences.
3. Government initiatives addressing specific aspects of information management and information security are already in place or under way. Knowledge and information management has now been formally recognised as a function of government, in the same way that finance, IT and communications are. Following the Cabinet Office data handling review<sup>2</sup>, audit committees have had their roles strengthened in this area, with a requirement to specifically address information risk (both for information and information systems). Accounting officers have had information management explicitly added to their list of key accountabilities, with a requirement to address performance within their annual statement on internal control. Formal training programmes are also now required for staff with additional focus on those handling protected personal data. Introducing a greater degree of professionalism to the knowledge and information management function is critical to underpin all of this work, and to raise the levels of core capability behind the management of information. Leadership and governance have a vital role to play, and this strategy identifies where we need to strengthen leadership capability. Everyone within government has a responsibility for knowledge and information and so everyone requires the skills and tools necessary to meet those responsibilities. Senior managers have a responsibility to ensure that

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<sup>1</sup> *Speech on Liberty*, University of Westminster, 25 October 2007 [www.number10.gov.uk/Page13630](http://www.number10.gov.uk/Page13630)

<sup>2</sup> *Data Handling Procedures in Government: Final Report*, Cabinet Office, June 2008  
[www.cabinetoffice.gov.uk/~media/assets/www.cabinetoffice.gov.uk/csia/dhr/dhr080625%20pdf.ashx](http://www.cabinetoffice.gov.uk/~media/assets/www.cabinetoffice.gov.uk/csia/dhr/dhr080625%20pdf.ashx)

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knowledge and information contribute to organisational success, to manage risk, and to provide effective leadership. Knowledge and information professionals have a responsibility to develop and implement appropriate policies, procedures, standards, training and tools. And individual staff have a responsibility as the creators, custodians, and users of knowledge and information.

4. It goes without saying that all parties responsible for holding, transmitting or otherwise using information need to be aware of their responsibilities under the appropriate legislation. But in addition to understanding the legal framework, and other mandatory requirements, each department must also support a culture that clearly values information as the business asset that it is.
5. Over the past five years, there has been unprecedented change in the way information is created, stored, disseminated and used. Over this period, there have been significant steps forward in government's information management, and there are plenty of examples of good progress in specific areas. These show improvements can be made with effective leadership and management, and they provide experience that can be used more widely (several examples are included in this strategy). Up until now however there has been no systematic way to share good practice in knowledge and information management across government widely, an essential part of a cultural change process. This strategy has been developed to help address that, and create a culture which supports strong information and knowledge management.

<b>Term</b>	<b>Definition</b>
Data	Data are numbers, words or images that have yet to be organised or analysed to answer a specific question.
Information	Produced through processing, manipulating and organising data to answer questions, adding to the knowledge of the receiver.
Knowledge	What is known by a person or persons. Involves interpreting information received, adding relevance and context to clarify the insights the information contains.

Source: *Improving information to support decision making: standards for better quality data*, Audit Commission, November 2007  
[www.audit-commission.gov.uk/Products/NATIONAL-REPORT/AE298947-73F0-4dcb-AF77-D2520EECFCFB/ImprovingInformationToSupportDecisionMaking.pdf](http://www.audit-commission.gov.uk/Products/NATIONAL-REPORT/AE298947-73F0-4dcb-AF77-D2520EECFCFB/ImprovingInformationToSupportDecisionMaking.pdf)

# The strategy

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6. The business of government reaches across organisational structures and boundaries. Information should be seen as a common asset to help achieve the government's goals.
7. The development of digital technologies has transformed the way we create and use information, the way we interact with each other and the expectations people have. This has presented opportunities as well as new challenges. Approaches developed for paper do not always work in this new environment. Information management, in a paper age, relied upon clerks and the organised storage of paper files. In an electronic age, it relies upon sophisticated technology and strategic leadership. Technology is evolving at a rapid pace, and our approach to strategic leadership in this area must evolve with it.
8. In the past, government departments have tended to develop processes individually and make separate investments in tools and technologies to deal with the specific challenges of their own customer groups. The unprecedented pace of IT growth (coupled with a changing culture) has contributed to an incompatibility of information systems between departments, and a need for investment in the strategic vision to manage information more effectively.
9. *Transformational Government*<sup>3</sup> addressed the opportunities that technological developments offer government to transform the way it provides services. There are significant, additional benefits to be gained by similarly transforming our approach to knowledge and information management. Like *Transformational Government*, the changes needed are inherently about culture and processes, not just about technology. Information management focuses on the processes used to create, capture, use and securely store information of all kinds. Good knowledge management involves maximising the value of information and turning it into knowledge, leading to more informed decision making.
10. Good information management needs to be partnered with good knowledge management. If it isn't, the value of information as an asset is undermined, and cost-effective, efficient service delivery is compromised. To maximise the knowledge government holds it needs to be shared appropriately and securely, using it to create better services. This will be critically important to the future success of government in the digital age.
11. There are already a number of significant information management initiatives under way to address specific challenges. For example, a government location strategy<sup>4</sup> will improve the way we use geospatial information to underpin both policy and delivery effectiveness. Work is also under way to simplify services to citizens, to prevent people from having to repeatedly submit the same data to several government departments. Such work, which is being led by several departments, relies on better information flows between different parts of government and on excellent information management. This strategy however, is not intended to duplicate or address the specifics of these existing projects. Instead, it aims to raise capability to create the common skill base needed across all parts of government.

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<sup>3</sup> *Transformational Government: enabled by technology*, Cabinet Office (Cm 6683), November 2005  
[www.cio.gov.uk/documents/pdf/transgov/transgov-strategy.pdf](http://www.cio.gov.uk/documents/pdf/transgov/transgov-strategy.pdf)

<sup>4</sup> *Place matters: the location strategy for the United Kingdom*, report by the Geographic Information Panel to Baroness Andrews (Minister for the Geographic Information Panel), expected to publish in 2008. [www.gipanel.org.uk/gipanel/gistrategy/index.html](http://www.gipanel.org.uk/gipanel/gistrategy/index.html)

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12. This strategy sets out how government can further develop capability in its management of knowledge and information. Over time, it will deliver significant benefits to efficient and effective decision making and service delivery. It will also add overall value to the economy through enabling the greater exploitation of public sector information. The strategy will deliver this by providing an overall framework of principles and capabilities needed to help embed a stronger knowledge and information management culture. Above all, it highlights how essential leadership and governance are if we are to raise capability and professionalism.
13. This strategy sets out the key strategic actions needed for government to:
- Improve the way departments manage information as a valuable asset, ensuring it is protected, made accessible where appropriate, and used effectively to inform decision making.
  - Build a culture that shares knowledge more effectively, and builds capability in the handling of information of all kinds.
  - Deliver this through developing the professionalism of knowledge and information management, and through supporting governance, processes and technology.

# Principles and key actions

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## **1. Improve the value of the information and knowledge held**

- Ensure the information held is used appropriately, with maximum added value.

## **2. Build a knowledge management and knowledge-sharing culture**

- Create and promote the capability to manage and share expertise and knowledge appropriately across government.

## **3. Use common standards and secure processes**

- Ensure that the whole of government is consistently using best practice and common frameworks for information management standards.
- Ensure that all civil servants understand their responsibilities for good record keeping and information management.

## **4. Build capability**

- Create a strong infrastructure to support and lead information management professionals across government.
- Develop a professionalism programme to support knowledge and information management as a key corporate function of government.

## **5. Strengthen leadership across government and within departments**

- Ensure that departments have the capability and professional leadership to support their ambitions and requirements in this sphere.
- Strengthen the role of the Knowledge Council to support capability building.

## **6. Improve technology**

- Ensure that we understand the implications of new technology for information management, and best address these challenges in a joined-up way wherever appropriate.
- Continue work to protect government's digital information assets for the future.



# 1. Improving the value of information and knowledge held

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14. Information and knowledge have significant value on many levels. Improving the way they are used and, where appropriate their availability, brings significant advantages to the public, the economy and the government.
15. Good knowledge and information management should support evidence-based policy development – both in researching new policy and evaluating the outcomes from existing policies. Using information well in decision making leads to better policy, and better services. And aggregating information (for example, over geography or time), using a range of information from different sources, and sharing information, will generate a fuller picture to enable effective decisions to be made.
16. Making the *right* information available to the *right* people at the *right* time will enable better-value and more adaptive public service delivery through reducing duplication<sup>5</sup> and error, through the personalisation of services and through the better use of customer insight. There is much to be gained from sharing information – but there are also risks and these must be proactively managed. A review commissioned by the Prime Minister of sharing information in both the public and private sector has been published by the Information Commissioner, Richard Thomas, and Dr Mark Walport, the Director of the Wellcome Trust<sup>6</sup>. The recommendations are currently being considered by the Government, and it will formally respond to the report in due course.
17. Non-personal information created by government and the wider public sector, such as mapping or school performance data, can be used to develop value-added products and services tailored to users' needs. This will boost the UK information industry, resulting in economic benefits for the UK. It will also increase the range and diversity of information products available to the public. (In-car satellite navigation is a good example of a consumer product utilising government data.) This is recognised by government and the wider public sector as both a public good and creating value for the UK citizen<sup>7</sup>. Work is under way to explore the economics of this further in relation to the role of trading funds<sup>8</sup>, and to take exemplars forward under the Government's Power of Information Task Force.
18. Most information held by government is protected by Crown copyright. Re-use of information, including downloading, copying and re-publishing, requires the permission of the content owner, often through a licence. This is facilitated through the simple, quick, online Click-Use licence system<sup>9</sup>. Standardising and freeing up such permissions are vital to encourage sharing and experimentation with information. Government needs to ensure the integrity and accuracy of data and information it creates or holds, while encouraging easy to use solutions and tools.

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<sup>5</sup> The 'Tell us once' project, set up in response to the Varney Review and led by the Department for Work and Pensions, is a good example of an initiative established to address this. See page 51 at [www.cio.gov.uk/documents/annual\\_report2007/tg\\_annual\\_report07.pdf](http://www.cio.gov.uk/documents/annual_report2007/tg_annual_report07.pdf)

<sup>6</sup> *Data Sharing Review Report*, Richard Thomas and Dr Mark Walport, July 2008 [www.justice.gov.uk/docs/data-sharing-review.pdf](http://www.justice.gov.uk/docs/data-sharing-review.pdf)

<sup>7</sup> *The Power of Information: an independent review*, Ed Mayo and Tom Steinberg, June 2007 [www.cabinetoffice.gov.uk/reports/power\\_of\\_information.aspx](http://www.cabinetoffice.gov.uk/reports/power_of_information.aspx)

*The commercial use of public information*, Office of Fair Trading, December 2006 [www.offt.gov.uk/advice\\_and\\_resources/publications/reports/consumer-protection/oft861](http://www.offt.gov.uk/advice_and_resources/publications/reports/consumer-protection/oft861)

<sup>8</sup> *Models of public sector information provision via trading funds*, Prof. David Newbery, Prof. Lionel Bently, Rufus Pollock, February 2008 [www.berr.gov.uk/files/file45136.pdf](http://www.berr.gov.uk/files/file45136.pdf)

<sup>9</sup> Crown copyright is managed centrally through the Controller of HM Stationery Office, which operates from within The National Archives. [www.opsi.gov.uk/click-use/index.htm](http://www.opsi.gov.uk/click-use/index.htm)

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## Actions needed to improve the value of information and knowledge held

19. Valuable non-personal information and expertise exists not just within government departments, but also across the public sector and beyond<sup>10</sup>. To make better use of this, the Knowledge Council will work with key groups (such as social researchers) to develop a framework for mapping the location and value of knowledge and information, supported by practical examples of business benefit.
20. Improved pan-government access to information held, for example, on individual department intranets or in libraries, would maximise their value by allowing others to benefit from previous research and lessons learned from existing and past initiatives. The Knowledge Council and the Chief Technology Officer (CTO) Council<sup>11</sup> will explore the development of a common portal to provide a single access point to published (internally or externally) information.
21. 'Data mashing' is the process of bringing together and combining information from different sources to create new information, with increased value. Information owners should make it available in 'mashable' form, so that others may easily use it in ways they choose. The Knowledge Council will work with the CTO Council and the Department for Transport Incubator project to define standards that will ease barriers to quick and easy 'mashing' and use of common reference data. This of course will be done without compromising government's responsibility for the protection of data and the confidentiality, integrity and availability of information. This work will build on standards set by the location strategy<sup>12</sup> and by the Office of Public Sector Information (part of The National Archives).

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<sup>10</sup> The Economic and Social Research Council (ESRC) funds research and training in social and economic issues. It is an independent organisation but receives most of its funding through the Department for Innovation, Universities and Skills.

*The national strategy for data resources for the social sciences*, Economic and Social Research Council, June 2006 [www2.warwick.ac.uk/fac/soc/nds](http://www2.warwick.ac.uk/fac/soc/nds)

<sup>11</sup> The Chief Technology Officer (CTO) Council is a key body relevant to this strategy. The CTO Council is the cross-Government body responsible for developing and implementing technological solutions to help deliver the *Transformational Government* Implementation Plan. [www.cio.gov.uk/chief\\_technology\\_officer/index.asp](http://www.cio.gov.uk/chief_technology_officer/index.asp)

<sup>12</sup> See footnote 4. [www.gipanel.org.uk/gipanel/gistrategy/index.html](http://www.gipanel.org.uk/gipanel/gistrategy/index.html)

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## **Case study – improving the value of information**

To improve capability to develop new information services and to demonstrate value in more complex cases, the Department for Transport and the Chief Scientific Adviser's Committee are completing work on the concept of an 'incubator' for experimentation into information sharing via 'data mashing'. The National Transport Information Incubator (NaTI) provides a secure environment that can encourage wider experimentation with data, and help persuade users and owners of data to collaborate and undertake more innovative projects. The incubator achieves this by providing a secure environment and a centre of expertise to support development of data applications from conception to prototyping and business case development.

A consortium, comprising Cambridge University, Lockheed Martin, Deloitte and Thales, working alongside Transport Direct, Southampton University and others, has carried out the work. This pilot project has scoped the concept and feasibility of a permanent incubator facility, by developing and demonstrating exemplar technical and business models. The final report is due for publication during 2008.

## 2. Building a knowledge management and knowledge-sharing culture

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22. There is a subtle yet real distinction between information and knowledge management. To date, most work within government has focused on improving information management (the processes by which we create, capture and use information). To unlock the power of the information we hold, government must also improve its knowledge management and move more towards being an organisation that builds on its collective experiences through securely sharing knowledge. This will necessitate a vital shift in culture within the public sector.
23. Knowledge management involves the effective use of information. Good leadership, culture and behaviours are crucial to this. Many commercial organisations invest significant resources into ensuring that individual behaviours support the business needs of a knowledge-based organisation. Other governments (for example in the US and Denmark) have already established knowledge management as a key internal management priority.
24. Knowledge management is not just about distilling knowledge from information and then leaving it somewhere to be discovered. Organisations which have created knowledge-sharing cultures have focused on creating environments in which people have strong networks, can find 'the person who knows' easily, thereby making the subsequent sharing of knowledge and advice both easy and valued. This can be embodied in many ways, including the design of buildings, the design of intranets and the way senior staff lead organisations.
25. As delivery of government policy becomes more devolved, and strategic challenges more complex, the importance of good knowledge capture and dissemination is rising. We increasingly work in partnership with a number of teams, departments and organisations outside of our immediate business unit. In this environment, knowledge sharing is essential for business. Poor sharing of knowledge costs us time and money. A recent evaluation of the Capability Reviews programme concluded that the findings of the reviews suggested a more professional approach to knowledge capture and knowledge transfer within government is needed. The report's authors recommended the creation of a small and highly expert central unit that could provide the infrastructure for knowledge transfer and innovation in central government<sup>13</sup>. We would add that every department needs core capability in this area.
26. Good knowledge management, alongside good information management, is fast becoming a core priority in government.

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<sup>13</sup> *Take-off or tail-off? An evaluation of the Capability Reviews programme*, November 2007  
[www.nationalschool.gov.uk/downloads/Capability\\_Review\\_Sunningdale\\_91107.pdf](http://www.nationalschool.gov.uk/downloads/Capability_Review_Sunningdale_91107.pdf)

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## **Actions needed to help build a knowledge management and knowledge-sharing culture**

27. The Knowledge Council will work with the Capability Review team in the Cabinet Office to help identify how knowledge management can be integrated into civil service models of capability. The National Archives' cross-government programme of information management assessments will be developed and extended to incorporate an assessment of capabilities in knowledge management, as well as information management.
28. Knowledge management and knowledge-sharing behaviours need to be integrated into core competencies at all levels. Clear leadership is key to ensuring that knowledge management is seen as a priority, so it is particularly important that all senior civil servants adopt these behaviours. The Knowledge Council will work to help embed core knowledge and information management behaviours, for example, by working with Government Skills (Sector Skills Council for Central Government).
29. The best opportunities for early cultural change will be where knowledge sharing is focused on enabling teams or communities to achieve a common business purpose. The Knowledge Council will promote simple, readily deployable, toolkits for such teams.
30. The Knowledge Council will explore ways to harness the enthusiasm for knowledge sharing, particularly via social networking websites, and will look for ways to establish professional and vibrant communities of interest within government, potentially using the power of wiki and internet technologies to make this easier and faster to do. We have already made significant progress. *The Power of Information Review*<sup>14</sup> recommended clearer rules on civil servant participation in wider community debate online. The Cabinet Office and the Power of Information Task Force are leading work to take this forward, and have already published guidance for all civil servants when participating online.

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<sup>14</sup> See footnote 7. [www.cabinetoffice.gov.uk/reports/power\\_of\\_information.aspx](http://www.cabinetoffice.gov.uk/reports/power_of_information.aspx)

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## Case study – culture change

Government Communications Headquarters (GCHQ) designed its new building to actively encourage networking and the transfer of knowledge, recognising that personal interaction is the cornerstone of good knowledge sharing. The design of the building has two concentric rings of open plan offices with a wide 'street' running between them.

This physical environment facilitates knowledge sharing through providing space for informal meetings and chance encounters in the 'street', encouraging people to have face-to-face meetings rather than phoning or emailing, having a coffee together to discuss issues, as well as providing plenty of breakout areas for informal meetings.

GCHQ also adopted knowledge management practices during the move, for example by implementing a 'lessons learned' approach after each stage of the move so implementation times could be improved.

GCHQ has also developed integrated knowledge and information services, providing flexible support and a core centre of expertise. This has helped to change a predominantly 'need to know' culture to one underpinned by a 'need to share'. Given GCHQ's context, the 'need to share' approach must be managed in a secure way, i.e. taking account of the fact that sensitive information is being handled, but ensuring that it is shared amongst those who need it. This cultural change has been brought about through several initiatives, including having ownership of knowledge management at board level, a senior principal adviser on knowledge and information management issues to provide overall leadership on best practice and through establishing a network of 60 knowledge-sharing stewards across the department, to promote and champion good knowledge-sharing practices.

### 3. Using common standards and secure processes

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31. The standards and processes created to manage information in paper formats have struggled to meet the challenges presented by digital information. New approaches are emerging, which we need to embrace, and do so in a consistent way. Common standards, formats and language ensure consistency in approach to the capture and collection of information, while quality assurance processes, and having appropriate metadata, ensure accuracy, validity and reliability within information systems. In combination with well-designed access and security policies, these are the elements that provide the foundations necessary for us to manage information in a digital age.
32. The legislative framework presumes openness and transparency in government's relationship with the public. Good information management processes, including regular appraisal of information, support cost-effective compliance with legislation such as the Freedom of Information Act (2000)<sup>15</sup>, the Environmental Information Regulations (2004)<sup>16</sup>, the Data Protection Act (1998)<sup>17</sup> and the Re-use of Public Sector Information Regulations (2005)<sup>18</sup>. Good information governance practices reduce corporate risk in both central and local government. (Work is also under way at local government level to improve information management, such as the Audit Commission's work on data standards<sup>19</sup>.)
33. There are many benefits to public organisations sharing information, but safeguards and privacy for individuals must also be maintained. The Walport/Thomas data sharing review<sup>20</sup> has explored the scope of personal information sharing and the protections that apply when personal data is shared in the public and private sector. The Prime Minister has also announced a review of the 30-year rule for the transfer of government information to The National Archives. Depending on the outcome of these reviews there may be resource, process and compliance implications for all departments.
34. The Data Handling Report (DHR)<sup>21</sup> published in June 2008, provides new measures that government departments and their delivery bodies must adhere to in order to give adequate protection to personal and sensitive data handled by government. The DHR<sup>22</sup> provides new guidance and mandatory minimum measures, updating and clarifying previous guidance on data security in relation to personal data.

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<sup>15</sup> Freedom of Information Act (2000).

<sup>16</sup> Environmental Information Regulations (2004), SI 2004 No.3391.

<sup>17</sup> Data Protection Act (1998).

<sup>18</sup> Re-use of Public Sector Information Regulations (2005), SI 2005 No.1515.

Revised primary legislation of the United Kingdom is available online at [www.statutelaw.gov.uk](http://www.statutelaw.gov.uk).

<sup>19</sup> *Improving information to support decision making: standards for better quality data*, Audit Commission, November 2007

[www.audit-commission.gov.uk/Products/NATIONAL-REPORT/AE298947-73F0-4dcb-AF77-D2520EECFCFB/ImprovingInformationToSupportDecisionMaking.pdf](http://www.audit-commission.gov.uk/Products/NATIONAL-REPORT/AE298947-73F0-4dcb-AF77-D2520EECFCFB/ImprovingInformationToSupportDecisionMaking.pdf)

<sup>20</sup> See footnote 6. [www.justice.gov.uk/docs/data-sharing-review.pdf](http://www.justice.gov.uk/docs/data-sharing-review.pdf)

<sup>21</sup> See footnote 2. [www.cabinetoffice.gov.uk/~media/assets/www.cabinetoffice.gov.uk/csia/dhr/dhr080625%20pdf.ashx](http://www.cabinetoffice.gov.uk/~media/assets/www.cabinetoffice.gov.uk/csia/dhr/dhr080625%20pdf.ashx)

<sup>22</sup> See footnote 2. [www.cabinetoffice.gov.uk/~media/assets/www.cabinetoffice.gov.uk/csia/dhr/dhr080625%20pdf.ashx](http://www.cabinetoffice.gov.uk/~media/assets/www.cabinetoffice.gov.uk/csia/dhr/dhr080625%20pdf.ashx)

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35. The key outcome for the DHR<sup>23</sup> is that government departments and their delivery bodies (as well as the wider public sector) will adopt good data security practice as part of their everyday business processes. As the new measures are adopted, this will instil greater confidence in government's ability to handle personal and sensitive data securely and thereby facilitate better data sharing. This will benefit a very wide range of stakeholders from the general public whom government handles data on behalf of, to small and large enterprises, the ICT industry, the wider public sector including local government, and central government departments in particular.
36. With the advent of modern technology, many government departments now work largely electronically. But departments have been left to make their own arrangements for capturing, storing and utilising information, without coherent, unified standards and processes in place. This has resulted in a divergence from common practices and in some cases a lowering of standards (for example, the inadequate management of web pages to enable easy retrieval of previously published information at a later date – an issue being addressed by the government's Web Continuity project<sup>24</sup>). The results can be costly, and less likely to enable pan-government working or engender citizen trust.
37. In the future, the information life cycle should work in a more joined-up, integrated way through:
- The business of government being supported by common processes and tools.
  - Clarity on what information needs to be kept and for how long, and what does not.
  - Making it easy and quick to re-use material, and expecting and rewarding appropriate re-use of information.
  - Clear rules to support the sharing of information while safeguarding its integrity, availability, confidentiality and authenticity.
  - Best practice in information management being aligned with business needs.
  - Capturing and managing an adequate record to be seen as a natural part of all government processes<sup>25</sup>.

### **Actions needed to help the use of common standards and secure processes**

38. The Knowledge Council will lead on the development of a new framework of common standards and processes for managing government information. Compliance with standards will be monitored and supported through The National Archives' information management assessments.
39. Departments should assess their current performance against the new framework and agree with the Knowledge Council their plans to address any gaps identified. Departments should also work collaboratively on converging processes and standards, and consider a shared service approach to drive greater commonality, efficiency and simplification.

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<sup>23</sup> See footnote 2. [www.cabinetoffice.gov.uk/~media/assets/www.cabinetoffice.gov.uk/csia/dhr/dhr080625%20pdf.ashx](http://www.cabinetoffice.gov.uk/~media/assets/www.cabinetoffice.gov.uk/csia/dhr/dhr080625%20pdf.ashx)

<sup>24</sup> See [www.nationalarchives.gov.uk/webcontinuity/](http://www.nationalarchives.gov.uk/webcontinuity/)

<sup>25</sup> To support the third principle of good administration as set out in the *Principles of Good Administration*, Parliamentary and Health Service Ombudsman 2007. [www.ombudsman.org.uk/improving\\_services/good\\_administration/index.html](http://www.ombudsman.org.uk/improving_services/good_administration/index.html)



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## Ensuring we record, capture and protect key information

40. Government needs information to function – we need accurate information to pay benefits to citizens, to model the impacts of climate change, to inform new policy, and to protect our borders. Industries and technologies are constantly developing to support information resilience, to ensure that we can protect this information securely, and to manage its flow carefully. But all of this depends upon recording and capturing the right information from the start.
41. More information is produced now than at any time in history. But given these volumes, it can be hard to ensure that the right information is captured. Poor record keeping can cause anxiety and worry to citizens, can damage reputations and cost staff their jobs. But at its worst, it can cost lives. The inquiry that Lord Laming led into eight-year-old Victoria Climbié's death cited poor record keeping as one of the contributory factors<sup>26</sup>.
42. Our systems capture and record more and more information electronically, which is critical to enable services to be delivered quickly to citizens wherever they are. But this can also raise challenges of privacy and data protection. It is essential that all institutions that hold private information on citizens protect it. The recent Cabinet Office review into data handling procedures in government<sup>27</sup> has set out clear standards for government departments to meet to ensure this happens.
43. The Data Handling Report (DHR)<sup>28</sup> provides a set of mandatory measures that departments must adhere to in order to give adequate protection to personal and sensitive data that they handle on behalf of people. The DHR states that departments need to identify sets of personal data that must have higher levels of protection and put in place the necessary protective measures once this data has been identified. For example, where data has to be put onto removable media such as discs or laptops, departments must minimise the information transferred, and use encryption. They must also ensure that all new contracts with suppliers include security clauses in line with the DHR<sup>29</sup> requirements, whilst making existing contractors apply the same controls and monitor performance against them.

## Actions needed to help ensure we record, capture and protect key information

44. Every civil servant needs to understand their responsibility for keeping records both for service delivery and to underpin government accountability. The Knowledge Council, with The National Archives, will ensure that clear standards for the keeping and capture of records, particularly in a digital environment, are available to departments and understood by all parts of government.

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<sup>26</sup> See [www.victoria-climbie-inquiry.org.uk/](http://www.victoria-climbie-inquiry.org.uk/)

<sup>27</sup> See footnote 2. [www.cabinetoffice.gov.uk/~media/assets/www.cabinetoffice.gov.uk/csia/dhr/dhr080625%20pdf.ashx](http://www.cabinetoffice.gov.uk/~media/assets/www.cabinetoffice.gov.uk/csia/dhr/dhr080625%20pdf.ashx)

<sup>28</sup> See footnote 2. [www.cabinetoffice.gov.uk/~media/assets/www.cabinetoffice.gov.uk/csia/dhr/dhr080625%20pdf.ashx](http://www.cabinetoffice.gov.uk/~media/assets/www.cabinetoffice.gov.uk/csia/dhr/dhr080625%20pdf.ashx)

<sup>29</sup> See footnote 2. [www.cabinetoffice.gov.uk/~media/assets/www.cabinetoffice.gov.uk/csia/dhr/dhr080625%20pdf.ashx](http://www.cabinetoffice.gov.uk/~media/assets/www.cabinetoffice.gov.uk/csia/dhr/dhr080625%20pdf.ashx)

## 4. Building capability

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### Professionalism

45. Professionalism needs to apply not just to those for whom knowledge and information management are the defining part of their career or job, but to most staff who also need these skills to fulfil other roles in today's environment. The effective use of knowledge and information is vital to the achievement of government objectives. It extends to:
- Senior leaders, including accounting officers and senior information risk owners, who need to ensure organisational effectiveness and manage risk.
  - Groups and functions which enable the creation, storage and accessibility of knowledge and information – such as records managers, Freedom of Information managers, librarians, archivists and knowledge managers.
  - Groups and functions which produce and apply knowledge and information – such as policy-makers, statisticians, scientists, and researchers.
  - All other staff, as knowledge and information is key to the successful fulfilment of their roles.
46. The chief executive of The National Archives is the government head of profession, knowledge and information management. A supporting team (based within The National Archives) has been created, with the remit of providing advocacy, senior level policy advice, leadership and direction.

### Actions needed to help increase professionalism

47. The Knowledge Council will unify and further develop a professionalism programme, and will work with key stakeholders and information groups to:
- Build recognition of knowledge and information professionals as experts who have key roles to play in contributing to the success of their organisations.
  - Develop a more comprehensive professional skills and competency framework, and map roles and qualifications, training courses and accreditations across government onto it.
  - Define and promote the knowledge and information skills needed by all staff, providing an overarching framework for a number of existing initiatives in this area.
48. The Knowledge Council forms the overall leadership body for the professionalism programme. It will formalise a network of communities for co-ordination of professionalism issues on a cross-government basis, reflecting the complexity and different interests of the existing professional groups.
49. The National Archives' existing information management assessment programme will explicitly assess the capability of each department's infrastructure in this area as part of each assessment.

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## Case study – professionalism

The appointment of a knowledge manager in HM Treasury recognises not only the vital importance of knowledge to the Treasury as a whole, but also the specific contribution of good knowledge management to effective policy making.

The Troup report<sup>30</sup>, published after a review of knowledge management in HM Treasury, set out two overarching aims:

- Advice to ministers should be informed by the collective expertise of the organisation.
- Every member of staff should be able to access all the knowledge relevant to their work, past and present, external and internal, and should use this knowledge in their work.

In line with the recommendations in the report, a knowledge manager was recruited. With clear reporting lines, this role provides central leadership and co-ordinates the common elements of knowledge management, with a network of knowledge managers in each directorate to develop, deliver and support related knowledge management programmes. Key initiatives include:

- Better and more consistent processes around handovers and inductions, to minimise the loss of knowledge and experience when HM Treasury staff leave their roles.
- Re-designed competency frameworks to embed key knowledge-sharing behaviours into all staff's core performance requirements within the department and directorates.

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<sup>30</sup> *Review of knowledge management in HM Treasury*, Edward Troup, January 2006.

## 5. Strengthening leadership across government and within departments

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50. Strong overall leadership and advocacy are critical for success – including ensuring the link is made between information and knowledge management capabilities and wider strategic objectives. There are significant risks associated with knowledge and information mismanagement. Therefore, ownership and leadership of knowledge and information management needs to be clear within departments and across government.

### **Actions needed to help strengthen leadership**

51. Each department must ensure that there is ownership at Board or corporate leadership level of information management risks and assurance. There is now a requirement on departments to put in place 'Information Asset Owners' to assist the Accounting Officer and Senior Information Risk Owner manage the information risks to the department. Information Asset Owners are senior individuals involved in running particular business areas within departments. Their role is to understand their information assets, and what information is held, what is added and what is removed, how information is moved, and who has access and why. As a result they are able to understand and address risks to the information. They can also ensure that information is fully used within the law for the public good, and provide written input to the Senior Information Risk Owner annually on the security and use of their asset. (The senior information risk owner may or may not be the Chief Information Officer (CIO), but if it is not then the accountabilities between the risk owner and the CIO should be made clear.)
52. There is an additional, non-mandatory role that the Knowledge Council recommends departments have: that of senior information and knowledge manager, to act as a principal adviser and lead practitioner on knowledge and information management issues. This could be an information/knowledge specialist, or someone with a related area of expertise. Working to or with the CIO, this individual will usually be responsible for co-ordinating the organisation's overall information risk approach, ensuring that professional support and advice is offered to the business, including and ensuring that information is managed as an asset. This role will provide leadership within each department and ensure the implementation of agreed cross-government programmes and standards. This should form part of the individual's core responsibilities and should not simply add responsibilities to an existing role. This role should also be sufficiently senior to be able to take both strategic and operational overviews of the department's knowledge and information management. Many departments have already appointed to this role at senior civil servant level.
53. The Knowledge Council will work with other key councils and professions to deliver this strategy. The Knowledge Council (reporting to the Delivery Council and under the authority of the Civil Service Steering Board) will work closely with the CIO Council, as well as the CTO Council, on technology requirements, standards and solutions for knowledge and information management.

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54. Members of the Knowledge Council will include those with departmental lead responsibility for knowledge and information management, representatives of the CIO and CTO Councils, information assurance practitioners and other key stakeholders in government. It will be the formal governing body for the knowledge and information management function.
55. The Knowledge Council will give cross-government leadership on knowledge and information management including:
- The appropriate capture, description, management and preservation of vital government information.
  - Nurturing a cross-government culture that recognises the value of good knowledge and information management.
  - Supporting this through the creation of strong professional capability in knowledge and information management across government.
  - Collating and communicating expertise on information and knowledge management, including research and best practice, in order to help the development and implementation of knowledge management strategies and programmes.

## Case study – leadership

The Department for Business, Enterprise and Regulatory Reform (BERR) has effected significant cultural change through developing strong senior leadership, understanding knowledge and information management, and recognising and rewarding good behaviours.

In 2003, BERR (formerly known as the Department of Trade and Industry) implemented an electronic document and records management system across all its offices. The switch from being an organisation that depended on paper records to one where the business record is largely electronic involved a massive cultural shift. A panel was established which was responsible for championing usage of the new electronic records system. The panel used league tables and awards to increase motivation as well as regular refresher training and workshops to improve skills. Leadership however proved to be the most significant factor in successfully implementing the system.

In 2006, the implementation panel held an awards event to recognise and reward people who, through their efforts and ideas, have helped to improve BERR's operational effectiveness. BERR's senior management recognises that its most important assets are people, resources and information.

## 6. Improving technology

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### **Moving beyond the paper model**

56. Many systems and processes mirror the working methods of thirty years ago. They are based around paper documents that were moved around by people (either by hand or via the postal system). Yet technology has transformed the way we now work.
57. Government is enabled by technology: policy is inspired by it, business change is delivered by it, and customer and corporate services are dependent upon it. Government views technology as a strategic asset. Technology on its own does not transform government, but government cannot transform to meet modern citizens' expectations without it. The working model for the civil service is changing in turn. The pace is faster, and there is more working across boundaries and with people outside of the civil service. There are also new working patterns including home, mobile and remote working.
58. Technology also presents new challenges and risks. Record keeping, for example, is inherently harder to do with the current technology. The volume of information in circulation is unprecedented, yet the level of technological automation is insufficient to replace the role played by the paper records clerk. Similarly, finding information can be harder when there is more information to be searched, and in far more locations.
59. Government's use of technology is changing to reflect this. Technological innovation offers a continuing source of opportunities; however, its deployment needs to be linked to real business value. The Knowledge Council will work with the CIO and CTO Councils to help realise the potential benefits of innovation. To maximise the benefits that technology can bring to information and knowledge management and to move beyond the paper model there must be a greater understanding of how people now work; the identification of potentially valuable technological developments; learning from pilots and early deployments; and early support for the increasing amount of collaborative working. It is critical that this dovetails into work on information assurance and is aligned with the National Information Assurance Strategy<sup>31</sup>.

### **Actions needed to move beyond the paper model**

60. The Knowledge Council will establish a programme of work to gain a better understanding of the explicit and implicit needs of civil servants in roles with significant knowledge and information needs, including management, analysis and policy-making functions.
61. The Knowledge Council, alongside other stakeholders such as the CIO Council, will establish a framework for identifying, monitoring and, where appropriate, influencing emerging technologies which are likely to impact on information management in government.
62. The Knowledge Council will track pilots of innovative knowledge and information management technologies, and where possible it will co-sponsor them with interested government departments. The Knowledge Council will ensure that the results (successful or unsuccessful) of pilots are communicated across government.

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<sup>31</sup> Published June 2007. Available at [www.cabinetoffice.gov.uk/csia/national\\_ia\\_strategy.aspx](http://www.cabinetoffice.gov.uk/csia/national_ia_strategy.aspx)

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## **Managing digital information: capturing and keeping it useable**

63. Recent technical solutions, such as electronic document and records management systems, have attempted to improve the management and retrieval of electronic information. However, even where the technical implementation has been successful, the business benefits have often not been fully realised. In many cases, this shortfall has been because technology has been applied without re-thinking the business requirements, processes and cultures, and in others because the technology does not yet meet the business needs of government.
64. A strategic approach to technology is needed in order to contain costs, to make the best use of scarce skills and to ensure flexibility for future business requirements. Overall, there should be a move towards the re-use of common solutions and greater consideration given to a shared service provision. To underpin the strategies on culture and process there will be particular emphasis on a degree of greater automation, but automation that is easier to use through being more intuitive.

## **Actions needed to improve the management of digital information**

65. The Knowledge Council and the CTO Council will work with The National Archives to establish a common approach to government information capture systems. It will establish benchmarks and disseminate examples of best practice that departments can use to assess their own operational performance. The National Archives will also support the development of more specific standards (e.g. metadata) to ensure interoperability between systems, building on the work already done on Machinery of Government changes.
66. The National Archives will work with government departments and other interested parties, in the UK and internationally, to give strategic leadership to the industry on future requirements. It will report annually to the Knowledge Council and the CIO Council on the state of the market and on its recommendations for co-ordinated action.
67. The National Archives will identify the likely replacement timing of existing electronic document and records management systems in departments, help departments to assess their information management system needs and co-ordinate and provide expert advice on future procurements. The varied current position of government departments means that there is unlikely to be a single shared service offering in this area for the next generation of systems. However, all future procurements should be in line with a preferred model approved by the CIO and CTO Councils.

## **Search technology**

68. Search technology is an important component of an overall knowledge and information environment. It is worth stressing however that it is not a substitute for good knowledge and information management cultures and processes.

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## **Actions needed to improve search technology**

69. The Knowledge Council will work with the CTO Council and the Cabinet Office to improve search technology by developing a better understanding of how people search for information and working to help provide services in such a way as to better meet user needs.
70. In addition, the improvement of search access to the government's public web information is being addressed in a separate project led by the Central Office of Information.

## **Digital continuity**

71. Most government information is now created and stored digitally, which brings new challenges in how it needs to be managed throughout its entire life cycle. Because of the pace at which software and hardware evolves, the average period for which most digital information remains accessible and useable, without active preservation, is around five to seven years. All government bodies have information that they need for far longer than that period. When key data becomes irretrievable it can have a major impact on finances, legal compliance, reputation, and the service delivered to the public.

## **Actions needed to ensure digital continuity**

72. The need for an integrated approach to keeping digital information accessible and useable was recognised in the *Transformational Government* implementation plan (paragraph 60)<sup>32</sup>. A digital continuity project is currently being taken forward across government, led by the Knowledge Council and The National Archives. This project will lead to a common service that all departments could use while retaining responsibility for their own information. It will also sustain access to ongoing business information by ensuring that digital content remains readable despite technological obsolescence.

## **Supporting collaborative working**

73. Collaborative working is an increasing feature of government policy making and operational delivery. There are two key areas for the use of collaborative working tools in government:
  - To support communities formed to work on particular cross-cutting policies.
  - To bring together people with relevant knowledge and experience and foster relationships for the benefit of knowledge sharing. The Government Communications Network and the Legal Information Online Network are both examples of this.

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<sup>32</sup> Available at [www.cio.gov.uk/documents/pdf/transgov/transgovt.pdf](http://www.cio.gov.uk/documents/pdf/transgov/transgovt.pdf)



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74. Some departments have already started to use collaborative working tools department-wide, while a small number have also begun doing this across specific government communities. The learning from these now needs to be turned into a systematic approach for the whole of government. This should be in line with the recommendations in *The Power of Information Review*<sup>33</sup> around the need for civil servants to understand the role of new media communities in the information market.

### **Action needed to help support collaborative working**

75. Led by the Knowledge Council, a more systematic approach to collaborative working will be explored and instigated.

#### **Case study – collaborative working**

In 2005, the Department for Culture, Media and Sport (DCMS) set up a Central Information and Briefing Unit (CIBU) to improve communications. The unit needed a mechanism whereby it could be briefed quickly on the various policy lines that it would need to provide services to the department and the public. Wiki software, which allows web pages to be created and edited using a common web browser, was chosen as the most appropriate vehicle. DCMS worked out a simple handling mechanism and structure, then commissioned a commercial company to create something attractive and simple to use.

The wiki is password-protected, but all staff members have access at various levels (read/edit/administrator). This allows selected users in policy divisions to update pages with manageable chunks of information as policy and practice evolves. Members of CIBU can search the entire site, including attached documents, and browse the detail of a single issue by following an intuitive click-path from the top to bottom of the information tree.

In practical terms, the homepage is designed to allow users to identify the most popular policy issues around the department and navigate direct to the relevant pages. On reaching the specific policy page they are presented with policy briefs, key issues and fact sheets. This means that CIBU can respond to a substantial proportion of requests for information without commissioning bespoke briefing and improve the timeliness and consistency of responses, with current performance on cases handled by them running at 99 per cent within target.

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<sup>33</sup> See footnote 7. [www.cabinetoffice.gov.uk/reports/power\\_of\\_information.aspx](http://www.cabinetoffice.gov.uk/reports/power_of_information.aspx)

## Costs, savings and timetable for change

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76. Government should regard the management and exploitation of knowledge and information as a core responsibility, supporting business objectives and delivering business benefits. This strategy builds on a number of current initiatives in relation to different types and uses of information. There should not be significant additional cost associated with delivering the strategic objectives outlined here, but there should be tangible benefits.
77. However, there is a cost to not taking collective strategic action as early as possible. A shared approach to managing digital continuity risks will cost significantly less than departments developing individual solutions. Doing nothing at all, and risking having to recover, reconstruct or do without information in future, would incur disproportionately high costs.
78. Considerable investment is already being made in knowledge and information management, through time and effort, and the procurement of tools and systems. Government can only benefit from collaborating to identify more effective processes, better use of existing investments, and optimum solutions to existing issues.
79. Moreover, government stands to benefit greatly from increasing the effectiveness of management and capitalisation of information, and turning time spent searching for information into time spent applying it.
80. Benefits-based outcomes will support investment cases in corporate planning. The Knowledge Council will work to develop common methodologies and frameworks for measuring the benefits of knowledge and information management.
81. This strategy formalises the ongoing process to improve the way in which government manages and capitalises on its information and knowledge. The Knowledge Council and head of the knowledge and information management function will take responsibility for overseeing this process, and for reviewing and revising the strategic approach at appropriate intervals. It will require time and commitment from individual government departments, both to carry out changes within departments and to play a part in the overall government policy development.
82. Priorities for 2008–2009 will be developing the essential capabilities and professionalism to deliver the programme and a strong foundation of information management processes on which to build. A detailed action plan for implementing the recommendations of this strategy will be developed by the Knowledge Council by April 2009.

This strategy has been developed by the Knowledge Council.

The Knowledge Council consists of senior leaders in knowledge and information management from across government. It acts as the professional lead for knowledge and information management on behalf of the civil service.

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