

Public services

February 2008

In the know

Using information to make better decisions:
a discussion paper

The Audit Commission is an independent body responsible for ensuring that public money is spent economically, efficiently and effectively, to achieve high-quality local services for the public. Our remit covers around 11,000 bodies in England, which between them spend more than £180 billion of public money each year. Our work covers local government, health, housing, community safety and fire and rescue services.

As an independent watchdog, we provide important information on the quality of public services. As a driving force for improvement in those services, we provide practical recommendations and spread best practice. As an independent auditor, we seek to ensure that public services are good value for money and that public money is properly spent.

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Summary	2
Checklist	4
1. Introduction for managers of public services	5
2. Better information, better decisions, better performance	7
3. Decisions, decisions	13
4. Information, information, information: relevance, quality and presentation	16
5. Only the start	39
Appendix 1: Definitions	41
Appendix 2: Examples of good use of information by the private sector	43
Appendix 3: References	45
Appendix 4: Methodology	48

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Summary

When decision makers use information well, local public services improve.

- The quality and cost of our local public services depend upon the decisions that many people make: users make choices; professionals exercise judgement; managers prioritise; and politicians allocate resources.
- Using information well in decision making leads to better local public services. Examples vary from reducing the number of young people not in education, employment or training to increasing the number of ambulances reaching incidents quickly; improvements include reducing fly-posting by 90 per cent, and increasing library membership by 58 per cent.
- Two-thirds of 3 and 4 star councils use information well, but only a tenth of 1 and 2 star councils do.

Information needs to be relevant for the decision at hand.

- Different decisions require different information, and judging what information is relevant for a decision is not easy.
- Performance indicators alone will not be adequate for important decisions.
- Aggregating information (for example over geography or time), using a range of information from different sources, and sharing information, will generate a fuller picture.

Good quality data are the foundation of good quality information.

- Data should be captured once and used numerous times.
- Data should be sufficiently accurate for the intended purpose. Highly accurate data are often neither cost-effective nor possible for many decisions.
- Decision makers need to judge how quickly and frequently they need information. Some information may need to be updated and available immediately, in real-time, but for many political, financial and strategic issues, understanding trends over time is more important than immediacy.

The way information is presented is important for accurate interpretation.

- Relevant, good quality, information will not help decision makers if they cannot understand it.
- How information is presented, and what story it helps to tell, can affect the decisions based upon it.
- The way information is presented, therefore, needs to be tailored for both the audience and the decision at hand.

Using information well requires decision makers and analysts to have particular skills.

- Decision makers need to be able to identify the information they need and to interpret it accurately.
- Those providing information need strong analytical and presentation skills.
- Evidence suggests that these skills are in short supply.

People need to think carefully about the information they use whenever they make decisions.

- Those who make important decisions about local public services should demand better and clearer information.
- Public bodies need to evaluate whether their information is fit for purpose and used to best effect.
- Relevance, quality and presentation, summarised as RQP, are the key characteristics for useful information.

This paper will be followed by further research by the Audit Commission to provide practical help to those seeking to improve the way they use information.

Checklist for managers of public services

Does my organisation have the relevant information it needs?

- How do we know that senior decision makers have the information they need? How do they judge what information is needed? Are we getting better or worse at providing it?
- Can we make decisions that affect local areas based on information about those areas?
- Do our papers for decisions contain a range of information, for example, on costs, trends, comparators, public opinion, as well as performance indicators and targets?
- Do we share data safely and productively within our organisation and with our partners?

Is my organisation's information based on good quality data?

- For recent important decisions, how confident are we about the quality of the data underlying the information?
- How do we decide how accurate and timely information needs to be?

Is my organisation's information well presented?

- Is information presented in a way that senior decision makers find easy to understand and interpret?
- How could we improve the presentation? Do senior decision makers provide helpful feedback to those presenting information?

Does my organisation have sufficient skills?

- How skilled are senior decision makers in interpreting information? How could we help them to improve?
- Do we have any skill shortages in analysing or presenting information? How are we addressing them?

How far does my organisation evaluate its information?

- How often do we evaluate whether we have the right information and use it to best effect? What have we learned?

1

Introduction

- 1 This paper is not quite the same as other Audit Commission studies. Instead of analysing issues and presenting solutions, this paper aims to encourage people to think about the information they use whenever they make decisions. And because people have different roles, different skills and different backgrounds, there is no one approach that suits every situation.
- 2 The core argument is simple: the quality and cost of our public services depend upon the decisions that many, many people make. The public, professionals, managers and politicians all make decisions that affect public services. If they could all make better use of information about those services in decision making, the services themselves would improve.
- 3 This paper has many examples of how information has been used in improving public services, including reducing fly-posting by 90 per cent, reducing the number of young people not in education, employment or training and increasing library membership by 58 per cent.
- 4 There are many examples in the private sector where companies have developed a competitive edge by exploiting information. For example, Tesco has tracked the shopping habits of up to 13 million British families for more than a decade through its Clubcard, making good use of a lot of data on customers and their behaviour (**Ref. 1**).
- 5 This simple argument is widely recognised in government and elsewhere. For example, the 2006 Local Government White Paper (**Ref. 2**) said that the new performance regime would provide:

‘clear information – for citizens, local authorities, partners and Government – about delivery in an area, including comparability with performance in other areas.’
- 6 But this simple argument hides a complex truth: the information available when a decision is made will never be as relevant, complete, accurate or timely as might be desired, and those who make decisions are often ill-equipped to draw appropriate conclusions from whatever is available. As a result, information can often mislead decision makers, and centrally driven demands for performance information can have unintended, negative consequences at a local level.

- 7 Information is expensive. The underlying data have to be accurate enough for the purpose, and then they have to be collected, stored, accessed, analysed and presented as useful information. Speed, accuracy, completeness and sharing are all desirable for the users of information, but they all add to its cost. It is widely acknowledged that information is needed to run public services economically, efficiently and effectively, but no one can say how much money is wasted on collecting data or collating information that is not well used or not fully understood.
- 8 This paper is designed to encourage those who make decisions about local public services to demand better and clearer information. The principles behind it are also valid for people who use and pay for public services, although it is primarily intended for those who make the key decisions, whether they manage public services, set the framework for them, or hold others to account. In fact the principles are just as valid for those who finance or manage private businesses, regulate them or buy their products. The examples included in the paper are, therefore, deliberately drawn from many different sources.
- 9 The theme of this paper is that better use of objective information in decision making will lead to better public services. So whatever your role in public services, you should be sceptical about the information you receive, but keen to make the most of it.
- 10 The Audit Commission seeks to help local public service bodies improve. It has had a long-standing interest in the way that information is used to improve public services, and more recently, auditors' local reports and national Commission publications have included assessments of audited bodies' arrangements to assure the quality of the data that underlies the information used in decisions. The Commission has also recently published a framework¹ to support improvement in data quality in the public sector **(Ref. 3)**.
- 11 This paper describes how the Commission is reviewing the way that information is generated, presented and used in making decisions. At present it is part theory, part experience and part research. The Commission would particularly welcome comments and feedback (see paragraph 95).
- 12 Following this paper, the Commission will undertake more detailed research and then publish practical help to those seeking to improve the way they use information.

¹ Endorsed by the Audit Commission, Audit Scotland, the Northern Ireland Audit Office, the Wales Audit Office and the Chartered Institute of Public Finance and Accountancy (CIPFA).

2

Better information, better decisions, better performance

- 13 Good information can help decision makers improve decisions, and therefore lead to improvements in public services. Because good information reduces uncertainty, it reduces some of the risk associated with decision making. There are many examples that show how better use of information leads to better local public services:
- a) In London, reductions at borough level in the numbers of young people not in education, employment or training (NEET) between 2004 and 2007 were almost all in excess of the national average. A study produced for the Children and Young People's Unit at the Greater London Authority identified several approaches to improving the information used to 'profile, monitor, review and understand the circumstances of young people NEET or at risk of becoming NEET'. These included reviewing attendance, behaviour and attainment data, monitoring information on 'at risk' pupils, and reporting the contribution of local schools to NEET numbers. The report found that these measures had 'made a tangible difference to the targeting of school support towards young people who may be at risk of NEET status', and the resultant development of tailored support packages for young people 'at risk' had contributed to a notable decline in the number of young people who were NEET in London (**Ref. 4**).
 - b) Middlesbrough Council has identified hotspots for anti-social behaviour by analysing police crime incident data, its own records of incidents including graffiti, fly-posting and abandoned vehicles and CCTV footage. The responses it has developed and targeted at those hotspots have reduced both fear of crime and anti-social behaviour – for example fly-posting has been reduced by 90 per cent (**Ref. 5**).
 - c) The London Borough of Sutton improved its understanding of library users' needs by examining information on visitor numbers and borrowing trends, and research putting the average length of library visits at just 9-13 minutes. By providing self-service lending for customers and easy access to multiple copies of its most popular books, it has increased borrowing by 15 per cent and library membership by 58 per cent, defying national trends. (**Source:** Audit Commission)

- d) Rotherham Metropolitan Borough Council has developed community profiles describing the characteristics and priorities of seven target communities. It has done so by combining qualitative information from focus groups and public meetings with quantitative information from the Census, the government's Neighbourhood Statistics, databases held by the Council and other local partners and performance information. Local partners use the profiles to inform policy and service delivery and implementation. It has improved coordination between housing and neighbourhood wardens and social workers, and provided additional support for non-English speaking children. **(Source:** Audit Commission)
 - e) Responses within 8 minutes to Category A incidents rose from 55 per cent to 64 per cent at the Welsh Ambulance Services NHS Trust and from 70 to 75 per cent at the Mersey Regional Ambulance Service NHS Trust, following the implementation of a revised approach to performance management that included using recent performance information to highlight performance issues at management meetings. **(Source: Ref. 6** and Landmark Consulting Ltd, unpublished)
- 14 There are, of course, many examples of how the private sector has exploited information to gain competitive advantage. Some are given in Appendix 2.

Poor use of information

- 15 Poor use of information can mean that improvement opportunities will not be captured, and at worst, it can lead to serious consequences. This section notes some instances where the information available is either not used or not used properly; other examples are highlighted elsewhere in this paper.
- 16 The Bichard Inquiry **(Ref. 7)** into the Soham murders was stark in its conclusions:
- 'One of the key failings was the inability of Humberside Police and Social Services to identify Huntley's behaviour pattern remotely soon enough. That was because both viewed each case in isolation and because Social Services failed to share information effectively with the police. It was also because, as the Humberside Chief Constable admitted in his evidence, there were "systemic and corporate" failures in the way in which Humberside Police managed their intelligence systems.'

17 The Audit Commission reported that, following a review at 41 NHS trusts in 2002:

‘There was evidence of deliberate misreporting of waiting list information at three trusts.... In most cases the level of inaccuracy was unlikely to affect the care of individual patients significantly. However, trusts can operate practices which are not patient-centred, for example offering short notice appointments and restarting the waiting time if patients cannot attend’ (Ref. 8).

18 There is scope for perverse incentives when performance indicators are poorly used, as **Example 1** illustrates.

Example 1

Planning applications performance

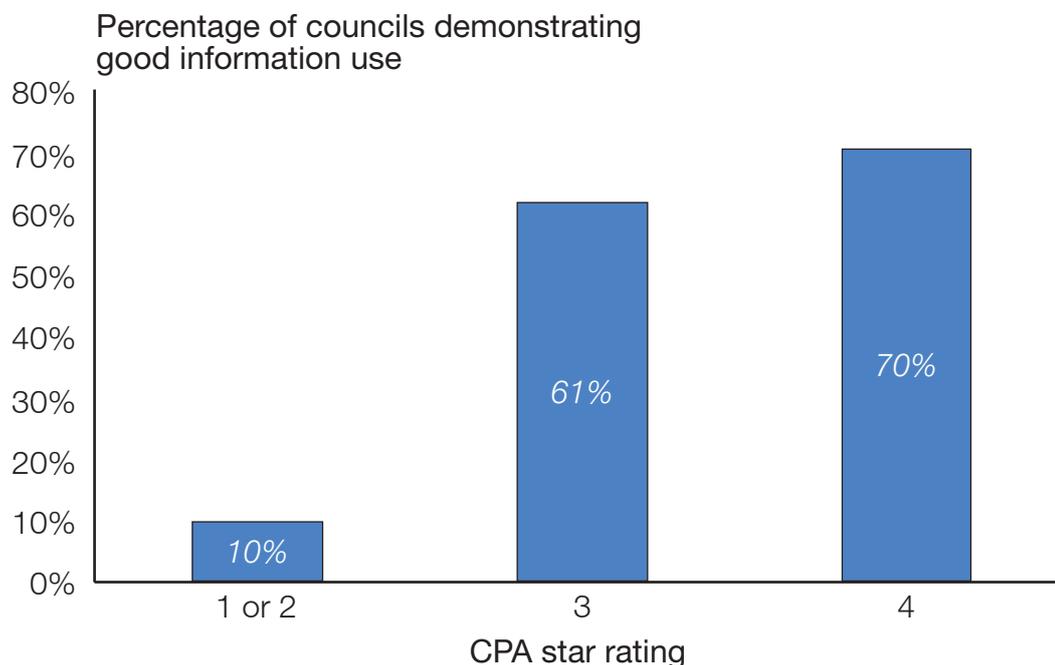
The speed of decision making on planning applications is a measure of council performance. The existence of targets to chart councils’ progress on this has had a significant positive impact on the service that applicants receive, but they have also had some negative consequences. One way to reduce the time taken to deal with planning applications is to refuse permission on applications where previously they might have initiated negotiations. Another possibility is to ask the applicant to withdraw an application where the council is unlikely to meet the 8- or 13-week target. Neither is helpful for applicants or for the overall efficiency of the system. However, the Commission found evidence of growth in both practices, again suggesting that, in some councils, the current focus on speed is reducing the level of service to users (Ref. 9).

Source: Audit Commission

Information could be used better

- 19 The use of information could be improved. In the 2006 Comprehensive Performance Assessment, strongly performing councils typically make better use of information than those with a lower star rating. In the corporate assessments^I of single tier and county councils^{II}, there is evidence of some good or excellent use of information in 45 per cent of authorities. However, this rises to 70 per cent for those gaining 4 stars, against 61 per cent of those rated 3 star, and only 10 per cent of those councils rated 1 or 2 star (Figure 1).

Figure 1
Strongly performing single tier and county councils demonstrate good information use



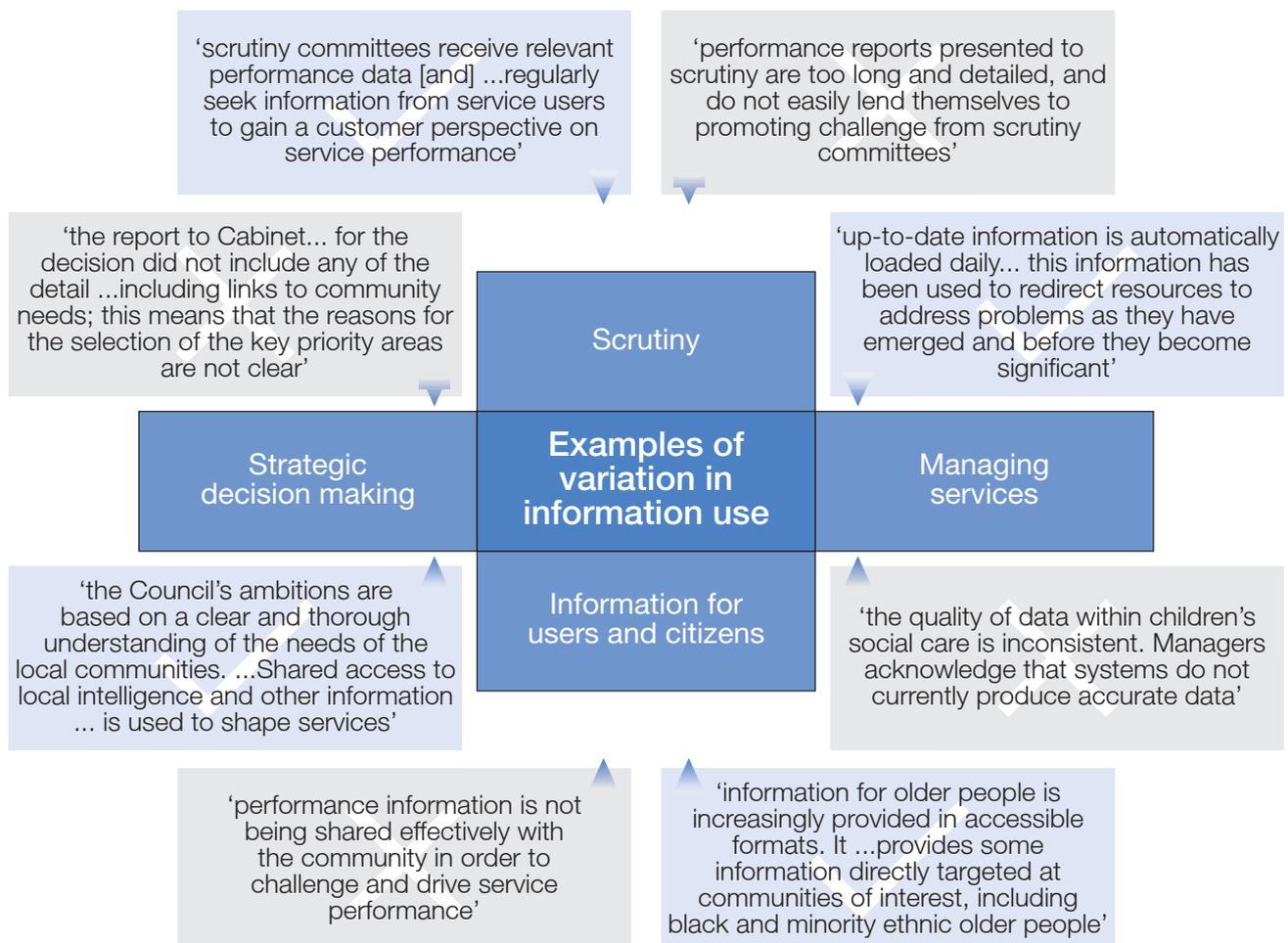
Source: Audit Commission: analysis of corporate assessments from December 2005 to June 2007

^I See **Appendix 4** for more detail on the methodology.

^{II} The number of district councils that have undertaken corporate assessments in this period is too small for an assessment of their use of information to be made.

- 20 Corporate assessments also show that in over half of authorities there were some examples of poor or mixed use of information, and only 8 per cent of assessments noted examples of extensive use of information to support the corporate centre of the organisation. While over 70 per cent of councils were taking positive steps to meet the information challenges set by shared priorities, the evidence suggests that there is substantial scope for most councils to be better at exploiting information.
- 21 The variation in information use is illustrated in **Figure 2** by examples of both good and weak practice in information use from corporate assessments.

Figure 2
Examples of good and weak practice in information use from corporate assessments



Source: Audit Commission: analysis of corporate assessments from December 2005 to June 2007

- 22 Audit Commission reports on a diverse range of subjects highlight the opportunities to exploit information more successfully. In 2007 alone it was a central theme in reports on: managing the local impact of migrant workers (**Ref. 10**); road safety (**Ref. 11**); children with special education needs (**Ref. 12**); engaging clinicians in financial management (**Ref. 13**); preventing unintentional injury to children (**Ref. 14**); commissioning services from the voluntary sector (**Ref. 15**); and the scope for competition and contestability to improve local government services (**Ref. 16**).
- 23 The examples in this paper show how much can be achieved if local public bodies have the right information and exploit it to the full. The research that follows this paper will explore in more detail how to do just that.

3

Decisions, decisions

- 24 Each of the many decisions made about local public services has the potential to have a positive or negative influence on services. Decisions include users exercising choice, professionals exercising judgement, managers improving processes and politicians allocating resources.
- 25 Different decisions will have unique elements, depending on the circumstances in which they are made, as well as on the individual or group making them. For example, councillors make decisions about what social care services to provide, social care workers and managers make decisions about how to provide those services, and the public makes decisions on whether to use the services. The information that each needs for these different functions will, inevitably, be very different.
- 26 Clarity about the decisions being taken is the first step to ensuring that they are supported by appropriate information. **Table 1**, overleaf, which is not exhaustive, illustrates the variety and diversity of decisions about local government and the information required. Although these are focused on local government, the principles apply more widely.
- 27 The framework in Table 1 is largely descriptive of a single service delivery organisation. However, many decisions are made in, or by, partnerships. Following the Local Government and Public Involvement in Health Act 2007 this will increasingly be the case, with the development of local (and potentially multi) area agreements and the need to work regionally. This can create further complexity in decision making processes:
 - a) understanding partners' issues, the different strategies, and even the language used;
 - b) navigating the different processes and governance arrangements that partners have;
 - c) reconciling the different priorities that will exist, and prioritising among them;
 - d) sharing information among partners, and analysing it jointly; and
 - e) for users, in knowing from whom to obtain the information they need.
- 28 In summary, different decisions require different information, and the first step to providing appropriate information is to understand the decision being taken.

Table 1
Examples of decisions about local public services

Type of decision	Example varieties	Taken by	Example decision	Examples of some information required
Strategic	Establishing entitlement	Elected politicians	Determining eligibility for local services	Data on performance of services on meeting needs
	Priority setting	Elected politicians	Determining budgets for services	Evidence about the priorities of local people
	Revenue raising	Elected politicians	Establishing balance of council tax and charges for services	Information on potential of charges to raise revenue
	Service configuration	Local managers	How to configure service for local needs	Information on variety of different service models and providers
Scrutiny	Electoral accountability	Voter	Voting in local election	Experience of council performance
	Holding to account for performance	Scrutiny committee	Reviews of intractable problems	Complaints and calls for redress
	Assessing performance	Inspector or regulators	Audit Commission corporate assessment	Performance information
	Providing assurance	Internal or external auditors	Auditors' judgements on accounts	Accounts

Type of decision	Example varieties	Taken by	Example decision	Examples of some information required
Management	Performance assessment	Managers	Assessing if the service is delivering desired outputs / outcomes (including value for money)	Performance against targets and expectations
	Performance improvement	Managers	Where and how to devote resources to achieve service improvement	Performance comparisons
	Service design and delivery	Professionals	Choice of approaches for individuals and groups of users	Awareness of needs of diverse groups within the community
	Operational	Operational managers	How to deliver the service locally	Comparative performance
Engagement with and use of services	Participate (or not) in service delivery	Citizens	Whether to become a school governor	Details of role and time commitment
	Use service	Users	Whether to use optional services (for example transport, leisure, library services)	Charges for using services
	Choose service	Users	Choice of school	OfSTED reports
	Access service	Users	Which service delivery channels to use	Directory of services published by the council
	Misuse service	Citizens	Wasting resources (for example missing appointments)	Penalties for misuse of service

Source: Audit Commission

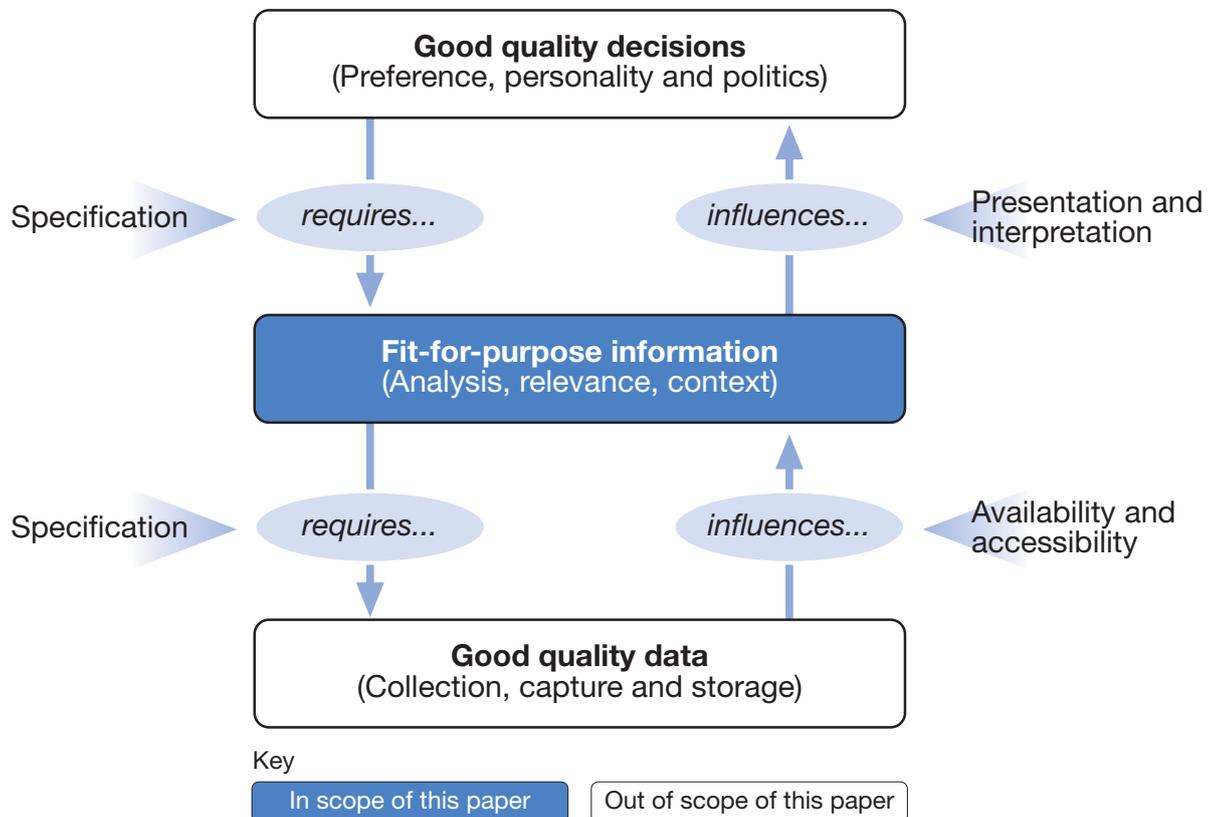
4

Information, information, information: relevance, quality and presentation

- 29 As Chapter 3 explained, different decisions require different information. Information that is useful when making decisions varies greatly in nature. For example, it can be about the context, individual service users, management processes, costs, inputs, outputs or performance. Information, and the data on which it is based, comes in many forms: quantitative or qualitative; measurable or impressionistic; real-time or delayed; raw or interpreted; isolated or aggregated. And words like performance indicators, measures, targets, management information, data, outcomes and standards are often used interchangeably¹. Selecting the right information for any particular decision is not straightforward, and warrants careful consideration.
- 30 However, the information needs for decisions do have some things in common. Some of the main processes involved in collecting data, creating information and using information for decision making are illustrated in simple terms in **Figure 3**.
- 31 This paper focuses on how information can be used to improve decisions. As Figure 3 shows, it does not, therefore, discuss the issues associated with data quality in detail, nor does it consider the information systems needed to collect, store and communicate data. Equally it does not go into the complex issues associated with decision making processes in a democracy. All these are major topics in their own right.
- 32 Under the Wednesbury principles (which come from a court case in the late 1940s that defined the principles for lawful decision making by public bodies), administrative decisions should take account of all relevant factors, but not take account of irrelevant factors. They also need to pass a 'reasonableness' test, that is, they must not be so unreasonable that no reasonable decision maker could so decide. Decision makers
-
- 1 There are many different views about what specific words mean, and semantic arguments tend to be fruitless. For those who want to be more precise, the Public Administration Select Committee report (Ref. 17) provided a helpful glossary of terms, which is reproduced at Appendix 1. This also includes the definitions of data, information and knowledge as used in this paper. Essentially data are facts, information is structured data and knowledge includes the conclusions built up from information.

should apply these principles when considering the information that they need, how they can ensure it is available to them, and whether they have the right information presented in a way they can interpret easily. This means they need to become more demanding of those who provide them with information, as Example 2, overleaf demonstrates.

Figure 3
Stages in producing and using information



Example 2

Politicians can be too tolerant of poor information, and need to challenge those who provide their information

A public interest report (PIR) is a report on a significant matter that has come to an appointed auditor's attention in the course of an audit. Several PIRs have emphasised that the information presented to councillors before key decisions was inadequate, limited or delayed. In one case councillors took key decisions with oversimplified information that did not allow proper consideration of the risks involved in a renovation and construction project, contributing to a project overspend of over £15 million.

Another PIR notes inadequate and incomplete reporting to members, including an instance where members were given an hour to read a 31-page report with 47 pages of appendices, and a lack of challenge and a critical approach by members to the information provided. This contributed to an overspend of £2 million on a joint venture between the council and its private sector partners.

Source: Audit Commission

- 33 Information used in decisions must therefore be fit for the specific decision being made. This means it must be relevant and of a sufficient quality for the decision at hand. It also needs to be presented in a way that decision makers will understand, taking account of their personal preferences, skills and available time. Relevance, quality and presentation (RQP) are key characteristics for useful information.

What is relevant information?

- 34 Information needs to be relevant to the decision at hand. Ideally it should cover all significant factors that might influence the outcome. But, in practice, only partial or incomplete information is likely to be available, and therefore the risks associated with using such information need to be understood. Otherwise decision makers may limit their options or misjudge the potential implications of any proposed course of action. Irrelevant information can distract or mislead.

- 35 Judging what information is relevant is not easy. The Commission will carry out research to provide some examples of how these judgements are made. However, considerations to bear in mind include: the level of aggregation (whether that is over geography, time or by type of information); using a range of information to provide a fuller picture; not relying exclusively on performance indicators; and sharing information within and between public and other bodies.

Aggregating information to make it relevant

- 36 Some decisions rely on local information, whereas others are not so dependent on geography. Information needs to be aggregated at the right level. The Commission's study on *Neighbourhood Crime and Anti-Social Behaviour* (Ref. 18) found that most data on low-level crime and anti-social behaviour are aggregated across too large a geographical area, making it difficult to understand the pattern of crime in different neighbourhoods and target crime prevention activities effectively. Example 3 highlights some of the existing good practice in the use of information at different geographic levels.

Example 3

Managing and using geographic information

Manchester Salford Partnership Housing Market Renewal Pathfinder has in place a suite of analytical tools to monitor and understand housing markets at different geographical levels. The tracking Neighbourhood Change Model plots indicators of neighbourhood conditions using a geographical information system and is linked to another system, Mapping Neighbourhood Interventions, that plans and monitors investment in each area.

Source: Ref. 19

- 37 Data may need to be aggregated over time in order to create meaningful information. Long-term trends reveal patterns over time and drive decisions about designing new services. Decision makers need to consider over what time period they require information. The opportunity for using trends to generate relevant and important insights was exposed in the cases of both Dr Harold Shipman and Bristol Royal Infirmary, as shown by Example 4.

Example 4

Shipman and Bristol Royal Infirmary

Research has identified that using longer-term trends could have indicated an alarm in the Shipman and Bristol Royal Infirmary cases (Ref. 20). The research looked at adverse clinical outcomes for patients aged 65 years and over under the care of Harold Shipman between 1979 and 1997, and patients under one year of age undergoing paediatric heart surgery in Bristol Royal Infirmary between 1984 and 1995.

The research showed that monitoring annual and 30-day mortality rates, set within reasonable boundaries, could have indicated an alarm in Bristol after the publication of the 1991 data, and in 1985 or 1997 for Shipman, depending on the data source and the comparator.

Source: Ref. 20

- 38 But it is not just across geographies or time that information can be aggregated. It is generally desirable to compare and analyse different types of information about any issue.
- 39 All sorts of information can be highly relevant to a particular decision – and useful information isn't always numerical. A few of the potential sources of information that can be useful to decision makers include: surveys; collated administrative data; qualitative research (such as focus group views on service quality); local knowledge about culture and attitudes; front line intelligence; budgets and accounts; evaluation and monitoring (information that provides feedback, allowing decision makers to judge, after a decision, whether the expected impact has occurred); and audit and inspection reports. They may be spoiled for choice as often as they find themselves short of relevant information.
- 40 In a democracy, politics is also a legitimate and often a defining consideration in designing and delivering local public services. Elected politicians make assessments of the views of their electors every day, and these may be the best available information on what electors want or would accept. But politicians also have to weigh up competing priorities, and they rely on relevant, objective information to help them understand the consequences of the trade-offs inherent in the decisions that they have to take.

Using a range of information to provide a fuller picture

- 41 Frequently, relevant information is not available. For example, the Commission's study of *Out of Authority Placements for Children with Special Educational Needs* (Ref. 12) found that many councils cannot track children's progress from case files. These contain information on the statutory assessment process, but rarely indicate which other services are in contact with children, their ethnic backgrounds, or link to information on outcomes. Similarly, decisions on public sports and recreation services are often made in the absence of full information (Ref. 21). They often focus on financial performance and ignore other relevant information, such as participation levels or customer satisfaction.
- 42 Some of these problems can be overcome by improving information flows and finding better information. Where this is not possible, public bodies need to be creative in using a range of potentially imperfect information to help them make decisions, as shown in Example 5. Although some of the information sources in this example cannot, by themselves, paint the whole picture, looking at them together helps to build useful information on which decisions can be based.

Example 5

Information on migrant workers

The Commission's Crossing Borders national study in 2007 (Ref. 10) found that:

'National data are not a good enough base for planning local policy responses. Current local population projections and diversity data do not fully reflect the recent increases in migration for work. There is little evidence on who stays where or for how long, and limited information on the intentions of migrant workers, especially those from the accession states.'

'Since national data are poor, local partners need to research their own new arrivals if they are to respond appropriately, but this is not straightforward. Local administrative records are poor at tracking transient populations. Some migrant workers will not appear on any local databases. They do not all register with GPs or go on electoral registers, even if entitled to do so. Only those using education services will definitely be recorded.'

To understand what is happening locally, agencies need to use intelligence from a variety of local sources, including that held by major employers, employment and recruitment agencies, and private landlords.'

Source: Audit Commission

43 Where service users are making the decisions, similar considerations apply. A parent choosing a school can access the school's public examination results, collected by the government. But professionals and politicians hotly dispute the conclusions that can be drawn from the results. A prospectus prepared by a school will provide valuable further information, for example on its ethos and priorities, but it is designed to show the school in the best possible light. An OfSTED report provides an independent and generally trusted view on the quality of teaching and learning against nationally applied standards, and provides a further basis for comparison. Each source has a unique value, although the combination of all three contributes to a more informed decision by a parent. But the views of friends, teachers and other parents may be just as important, as might the frequency of buses between home and school or a school's attitude to sport, languages, science or drama.

More than just performance indicators

- 44 Successive governments have imposed requirements on local public services to collect and report information about their performance. For example, performance information for local authorities was published under the Citizen's Charter (1992), while the current government introduced public service agreements (PSAs) in 1998 (**Ref. 22**) and best value performance indicators in 2000 (**Ref. 23**). PSAs initially set targets for central government departments to deliver improved public services in return for resources, but they have increasingly been applied to locally delivered services.
- 45 By making local public bodies report performance indicators (PIs), central government has forced them to improve their performance management, by focusing on their priorities and bringing a disciplined approach where it may have been lacking. For example, the current government's initial approach to aspects of public services that were poor, such as primary school standards and health waiting times, had strong elements of command and control^I, including PIs and targets mandated by government that clearly focused the attention of both managers and professionals. Mandated PIs and targets, together with pressure from organisations such as the Audit Commission, have led to many acknowledged improvements in services (**Ref. 25**) and much better use of information across the public sector.

^I It has been argued that command and control may be right at this initial stage in the improvement journey but not in other stages (**Ref. 24**).

- 46 But mandating PIs and targets from the top down has also brought problems. Some of the issues identified are:
- the difficulty in getting the measures right. Even if outcomes are identified, agreeing on the right measures of achievement is notoriously difficult;
 - top down measures and targets allow little room for adaptation to local circumstances;
 - the potential conflict with the values held by professionals. When looking at government targets, the Public Administration Select Committee (PASC) received evidence from ‘medical colleges, headteachers’ associations and others concerned with professional standards, much of it expressing concern that targets failed to take account of their special expertise and judgement’ (**Ref. 17**); and
 - the potential for unintended consequences, including distorting service priorities. The PASC reported that ‘in some cases creativity is being directed more to ensuring the figures are right than to improving services’ (**Ref. 17**).
- 47 The Comprehensive Spending Review 2007 (**Ref. 26**) seeks to respond to the criticisms of previous approaches, without losing the benefits of PIs that focus attention on priorities needed to achieve outcomes. Under the new performance regime, while councils will report 198 PIs for their areas to central government, they will only agree in local area agreements up to 35 of them as targets for local improvement (plus the statutory targets on educational attainment and early years) alongside locally determined priorities.
- 48 By definition, performance indicators only indicate performance and no one indicator tells the whole story; despite this, too much weight is often attached to them. By themselves, PIs and targets, whether determined locally or centrally, do not provide all the information needed to understand, manage and improve services. Decision makers need the ability to ask and answer questions about the reasons for particular levels of performance, drawing on other sources of information and knowledge. For example, businesses need management information on processes that they can directly influence, which is very different from the account they need to give to shareholders for their profits and prospects. This can lead to some interesting conclusions about where to focus attention: one private sector supplier of an outsourced public service actively manages staff absences, which influence profitability and can be directly managed. Local authorities will therefore want to ensure that they have the management information they need to make

decisions, as well as PIs to track progress. This task will be more complex in future because they will be jointly responsible for meeting the targets with other public bodies in local strategic partnerships.

- 49 All this points to the conclusion that decision makers should not simply rely on performance information, whether mandated by someone else or decided locally – other forms of information are necessary for interpreting changes in PIs and driving improvement. Decision makers need the right metrics, designed for the specific purposes at hand, and enriched by other information that helps people draw appropriate conclusions from them. The secret is to understand how the relevance and quality of the available information affects the decisions based on it.

Sharing data and information

- 50 The Local Government and Public Involvement in Health Act 2007 is intended to usher in an increase in partnership working in local areas, through local strategic partnerships. This will encourage public bodies to share information, provided they comply with data protection and other legislation.
- 51 If organisations fail to share data and information, both internally and with partners, they are less likely to have a complete understanding of an issue, as the Bichard Inquiry (**Ref. 7**) illustrated. With proper protection for personal data, sharing information can also contribute to improving local public services more generally (**Ref. 27**).
- 52 Silo working remains too common. In some councils, information is not shared internally, let alone with partner organisations. The adverse effects of partners not sharing information is illustrated in Examples 6 and 7.

Example 6

Data not shared on crime and anti-social behaviour

The Commission's national report on *Neighbourhood Crime and Anti-Social Behaviour* (**Ref. 18**) found that establishing neighbourhood approaches to reducing crime and anti-social behaviour required up-to-date information and that local partners did not always have a full picture of neighbourhood problems.

Over two-thirds of local crime and disorder reduction partnerships and police basic command units were recording anti-social behaviour within their own agencies, but coverage was patchy from other sources. For example, only 60 per cent were using information from neighbourhood wardens and only 46 per cent had information from housing officers. Even where the data were shared, they were often presented in a form that made risk analysis impossible.

Source: Audit Commission

Example 7

Data not shared on unintentional injury

The Audit Commission and Healthcare Commission study on preventing unintentional injury to children, *Better Safe than Sorry* (Ref. 14), found that decision makers were unclear about what data were available and which organisations held them. Data were held and collected by several local agencies including the NHS, the police and local councils, which resulted in duplication of effort. Agencies perceived that partners were unwilling to share data, even where it could be anonymised. Consequently, agencies held data in isolation, making it more difficult to create targeted, effective strategies to prevent unintentional injury across a local area.

Source: Audit Commission

- 53 Where it is appropriate to do so, sharing information that has already been collected and aggregated represents good value for money, helping organisations avoid potential duplication of effort and conflicting interpretations. It also enables them to get a much richer picture of many issues, whether they are centred on individual users or areas. The example from Middlesbrough in paragraph 13 (b) shows how use of information from a variety of sources, when shared, can improve services. A recent study found that 69 councils (together serving nearly half of the English population), had established a local information system to support their economic regeneration activities (Ref. 28). The ready availability of data and information places a premium on good judgement about what to use and how, but also creates opportunities to make good use of information across whole areas.

Information quality depends on data quality

54 Information is derived by combining data in ways which create meaning, often alongside contextual information. Good quality information depends on good quality underlying data. This section outlines the key characteristics of data quality, explores in more detail the issue of accuracy and considers how using a range of information can help decision makers form better judgements from data that is not as accurate as they would wish. It also explores the issue of timeliness and the potential for making multiple uses of single data sources.

Defining data quality

- 55 The Audit Commission has published standards for data quality, for adoption on a voluntary basis by public bodies (**Ref. 3**). The six key characteristics of good quality data are set out in the publication, but in summary are:
- accuracy – data should be sufficiently accurate for their intended purposes;
 - validity – data should be recorded and used in compliance with relevant requirements;
 - reliability – data should reflect stable and consistent data collection processes across collection points and over time;
 - timeliness – data should be captured as quickly as possible after the event or activity and must be available for the intended use within a reasonable time period. Data must be available quickly and frequently enough to support information needs and to influence service or management decisions;
 - relevance – data captured should be relevant to the purposes for which they are used; and
 - completeness – data requirements should be clearly specified based on the information needs of the body and data collection processes matched to these requirements.

56 It is worth bearing in mind that using information well can have positive effects on data quality; for example, as the Commission noted in *Improving Information to Support Decision Making: Standards for Better Quality Data* (Ref. 3):

‘a common obstacle to achieving consistently high data quality is the perception that this is not an important part of a person’s job. Staff who record data need to obtain some benefit for their effort in securing the quality of that data, for example by receiving relevant performance information, at an appropriate level of disaggregation, in return.’

Fit for purpose accuracy

- 57 As the Commission’s data quality standards specify, data should be sufficiently accurate for their intended purposes. Highly accurate data are often simply not cost-effective and not possible for many decisions, though high accuracy can be important in, for example, financial accounts or providing medical care. Information that depends on assumptions, such as forecasts, will rarely be very accurate. Their value lies in being accurate enough, the best estimate given the constraints, to guide decision making.
- 58 Decision makers need to be aware of the accuracy of the information that they are considering, decide whether it is fit for purpose, and consider whether they could or should seek to improve it.
- 59 The time it takes to achieve complete accuracy means that precise data will often arrive too late to be turned into useful information. Some decisions need to be taken very quickly, and therefore rely on less accurate information and less analysis. There will therefore often be a trade-off between accuracy and timeliness. For example:
- month end accounts may be generated quickly for initial management monitoring purposes, but then revised as the figures become firmer to inform longer-term decisions;
 - for a police force, daily figures on alleged crimes will be timely and should drive short-term priorities, but as investigations continue, further evidence will come to light which will affect whether alleged crimes are real ones. To be useful for other purposes, such as planning an operation on particular crimes in a particular locality or longer-term resource allocation decisions, accurately recorded real-time data may need to be amended in the light of experience; and

- the Office for National Statistics (ONS) publishes many provisional statistics. For example, getting timely data on growth in gross domestic product (GDP) is important for customers of the ONS. Publication of the first estimate of GDP quarterly growth is around 25 days after the end of the quarter, based on 44 per cent of the data. This ‘initial estimate of quarterly GDP growth is, on average, 0.18 percentage points below the latest estimate. This is statistically significant.’ **(Ref. 29)** Revisions are published as more data become available.

60 Inaccurate information can have significant consequences, and decision makers need to be aware of what they can do about it. For example, council funding partly depends on the number of residents in an area. Westminster Council successfully challenged the size of its population recorded by the 2001 Census **(Ref. 30)**. Audit Commission studies have identified, for example, where failings in crime recording hindered police forces’ efforts to improve performance management **(Ref. 31)**.

Using a range of information to improve accuracy

- 61 Decision makers often rightly question whether evidence points to clear and unambiguous conclusions. Some ambiguity is inevitable, but that reinforces the need for decision makers themselves to weigh evidence from different sources if they are to reach well founded conclusions. In many cases, using several different bits of information can help mitigate the risk that any one element is so inaccurate that it is misleading.
- 62 Even where most information is created by others and some of it may be of suspect accuracy, decision makers can gain insight by comparing similar information from different sources. Where sources with different perspectives agree, more faith can be placed in the areas of agreement, provided the material comes from different places, even though two sources seldom address exactly the same issue.

How timely does the information need to be?

- 63 While real-time information (information that is updated and available immediately as events occur) is needed for some decisions, others will not require this level of sophistication. Information should be timely for the decision at hand. For any given decision, it is important for decision makers to be clear how quickly and frequently the supporting information needs to be available, and ensure that data collection and information systems can provide it.

- 64 Real-time information is needed for controlling real-time processes. In grocery retail, managers need daily, near real-time information on sales of perishable goods, to match orders to consumer demand, minimise waste and maximise profit. Many public services also need real-time, or close to real-time, information. For example, the emergency services need real-time information on fires, crimes and health emergencies. The police need to know quickly if a spate of burglaries is occurring. Housing managers need to know the number of outstanding maintenance requests. Hospital managers need real-time information on stocks of blood available for transfusion.
- 65 The quick feedback that real-time information provides can be used to good effect. The Commission's national report on value for money in emergency ambulance services (**Ref. 32**), published in 1998, showed that response times could be improved by implementing 'dynamic standby': the control room directs crews to wait at points that are selected according to the likely pattern of calls over the next few hours, determined by analysing recent data, and comparing the likely pattern with hour-by-hour changes in the crews available.
- 66 Real-time information is not only valuable to managers. Service users may also find it useful, for example on opening hours and waiting times, in deciding, whether, when and how to access specific services.
- 67 In the Ministry of Justice Green Paper *The Governance of Britain* (**Ref. 33**), the government has committed itself to working with local authorities and public service providers to increase the use of publicly available, local, real-time data. The aim is to:
- 'provide communities with regular and accessible information on their local services, helping citizens judge the effectiveness of those services and giving them evidence on the performance of service providers.'
- 68 But not all information needs to be real time. Scrutiny decisions will generally not require real-time information, nor will many political decisions. HM Treasury's devolved decision making review (**Ref. 34**) reported that:
- 'in crime and health, daily and weekly data for most areas should be available, while in schools, best practice suggests a half-termly refresh rate for pupil performance.'

- 69 Evaluation and monitoring, as with all useful information, will be more useful if they are timely. Close to real-time feedback and monitoring is required if processes need to be adjusted quickly, while larger projects may require formal research evaluation over a longer period.
- 70 Therefore, while real-time information may help users and managers make real-time choices, judgements of performance and decisions on strategy typically require information analysed over a longer time period and set in context.

Capture once – use numerous times

- 71 Different information can be derived from a single common dataset. Common datasets are collected once, ideally at the point where services are delivered, but shared and used many times by different users for different purposes (**Ref. 35**). For example, operational data collected and used by professionals working with service users can also be anonymised and aggregated for managers to help them make resource allocation and strategic decisions, and elements communicated to the public to inform them about performance.
- 72 The principle applied to data of capture once – use numerous times (COUNT) has implications for information processing systems; they need to be designed to deliver sufficiently timely, as well as accurate, data to be turned into information that can support a variety of decisions, while complying with data protection and other legislation.

Presentation that helps interpretation

- 73 Providing relevant, good quality, information will not help decision makers if poor presentation is a barrier to interpretation. How information is presented can affect the decisions based upon it. Those presenting information need to consider exactly what they are trying to communicate, as well as how best to communicate it to their, potentially multiple, audience. This section explores the importance of tailoring presentation for the audience and for the decision at hand.
- 74 Different people have different ways of absorbing and understanding information. It therefore needs to be presented in a way that takes into account the skills of decision makers, the cultural context (**Ref. 36**), their preferences and learning styles, and the amount of time they have to consider the information. Otherwise important information will be ignored or misunderstood, or inconvenient information may cause an unhelpful

reaction. Information overload is commonplace; synthesising issues to bring out the key points is an important presentational skill. More does not mean better.

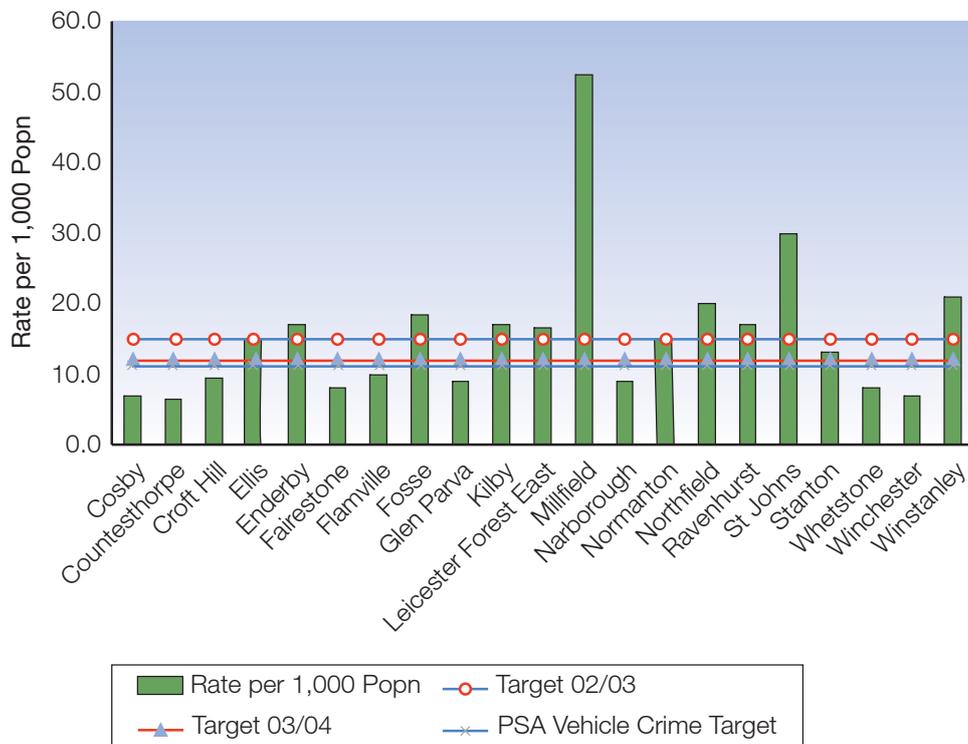
- 75 Equally, different ways of presenting information are suitable for different sorts of decisions. A picture will paint a thousand words if a tenants' group is challenging a social housing provider about the quality of the stock or the environment, but a rather different form of presentation is required when the budget for repairs is under review. And tenants, as service users with different interests from those setting the budgets, need accessible financial information, for example related to their rents.
- 76 A wide variety of literature exists on how to convey messages in a persuasive and understandable way¹. Presenting information in the form of a compelling narrative is also a useful way of engaging an audience, as the literature reviews commissioned for this study highlight (**Refs 36 and 37**). Narratives allow people to understand the messages more easily, and can help them draw their own conclusions. However, in developing a narrative, the authors need to be aware that they are themselves engaged in interpreting the core information.
- 77 Messages based on numerical information can be conveyed very powerfully in charts, as Examples 8 and 9 show. However, good presentation for one set of users will not be good presentation for all users. While many people absorb numerical information well from a chart, others prefer tables. Some people absorb information better through the written word, others by looking for relationships in diagrams. Some people understand issues better when they are set in their historical context, others relegate such matters to an annex, if at all. But how information is presented also depends on the nature of the information itself: graphs show relationships or trends over time, bar charts are good for illustrating comparisons and tables are useful when precise numbers are important.
- 78 Getting these stylistic points right for different decision makers in different forums can help people understand what the information is telling them, reduce the need for paper, and lead to more productive meetings.

¹ For example, Tufte E, *The Visual Display of Quantitative Information*, Second Edition, Graphics Press, 2001.

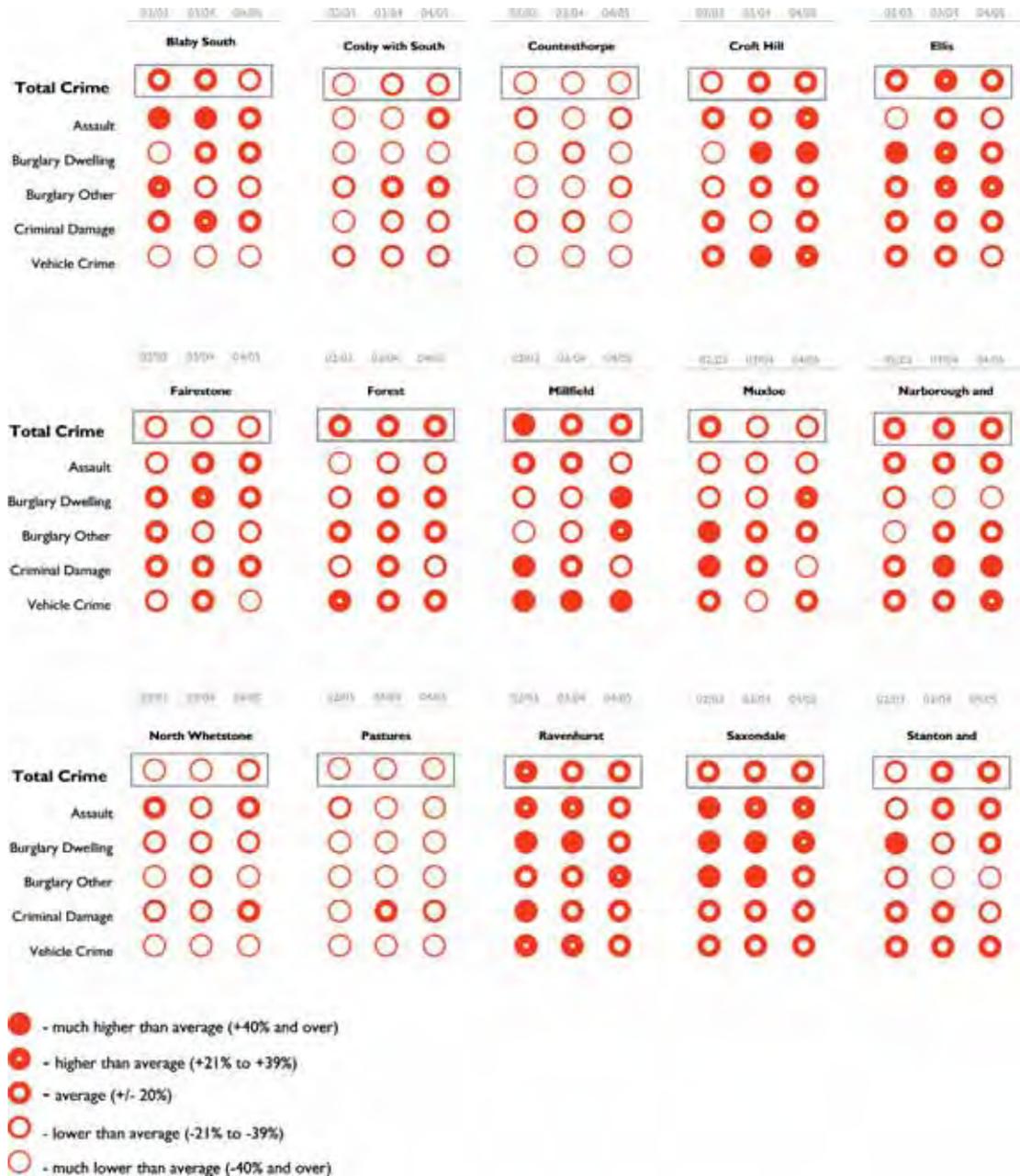
Example 8

Presenting information in Leicestershire County Council

Researchers at Leicestershire County Council have improved the graphic presentation of geographical data to help local decision makers. Crime data were previously presented in a bar chart by ward (as below). While it was easy to pick out the tallest two bars, it was less obvious what the rest of the data shows. It also just shows one crime type for one year.



Leicestershire has recently switched to using a 'dot' graphic to present comparative performance of 6 crime types, over 3 years for 15 wards. This graphic (opposite) shows 270 pieces of data on one piece of paper: it is data rich and shows meaningful comparisons over time. Although there is a key, all the viewer needs to know is that more orange means more crime.



The presentation of the information meets the needs of users. Discussions at Leicestershire’s Crime and Disorder Reduction Partnership meetings now focus on this information. Rather than trying to make sense of crime figures ward by ward, decision makers talk about overall trends and outliers, which contributes to an informed debate about what they should prioritise.

Source: Audit Commission/Leicestershire County Council

79 Two charts from the Commission’s report on the financial impact of the 2007 floods (Ref. 38) show how graphics can tell a story very powerfully: although East Riding District Council was one of the councils worst hit by the 2007 summer floods (Figure 4), most of its bill will be paid by central government or external insurance policies (Figure 5).

Example 9
Presenting information on the cost of flooding

Figure 4
Total cost of flooding to most severely affected local authorities

Seventy per cent of the total cost of flooding to the most severely affected areas was incurred by just four local authorities: Hull, East Riding, Gloucestershire and Sheffield.

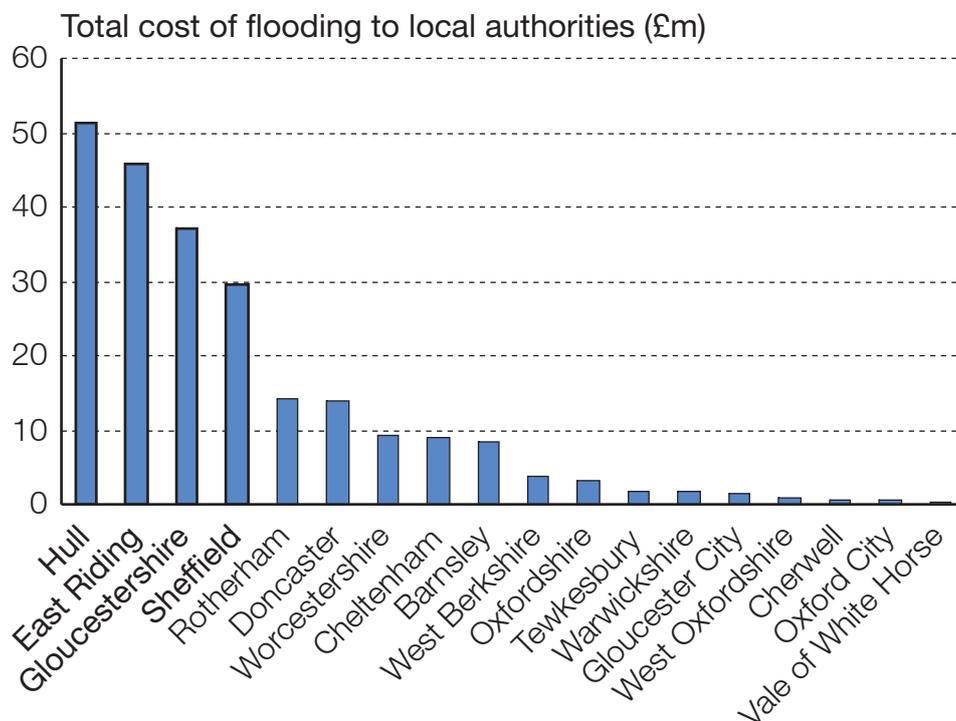
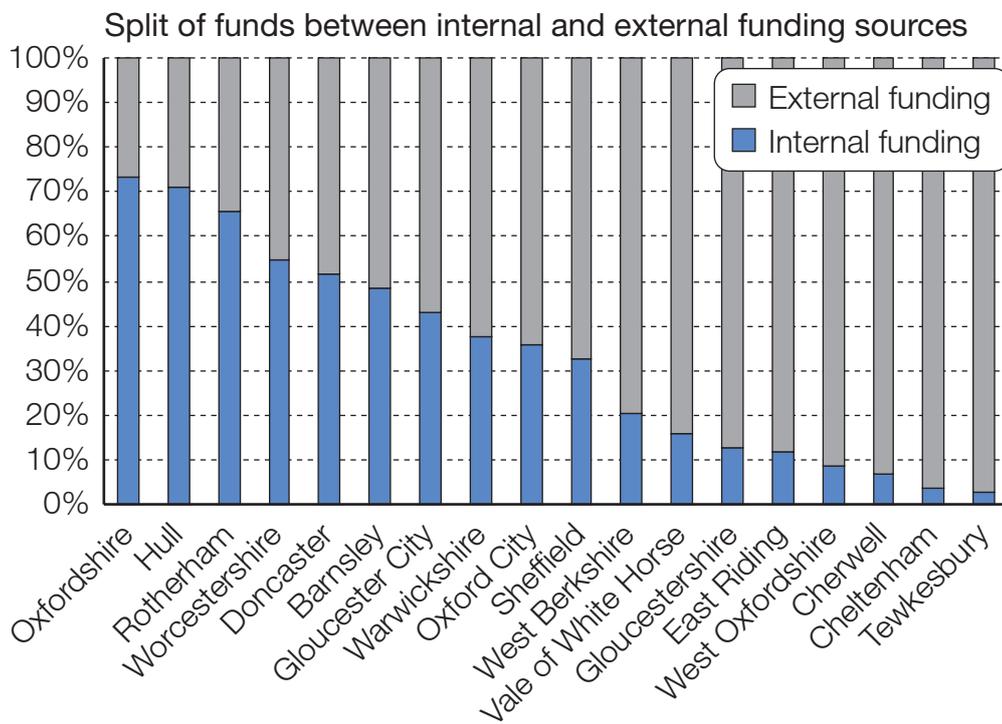


Figure 5
Proportion of the total costs that will have to be met by each of the most severely affected local authorities

Local authorities will fund between 3 and 73 per cent of the costs.



Source: *Staying Afloat: Financing Emergencies*, Audit Commission 2007

Balancing act

80 Obtaining information that is relevant, of sufficient quality and well presented is not a simple task. There are many stages to collecting data and creating useful information, with choices at each that affect its validity for any given decision¹. In practice, information conforming to the ideal characteristics is rarely, if ever, available, so decision makers must make allowances for the imperfections.

¹ There are complex issues involved at every stage, many of which are outside the scope of this paper. For example, organisations may invest in large-scale IT solutions to gather and store data and information, or use spreadsheets for smaller sets of information. IT and information management is not addressed in this paper.

- 81 Information is inherently expensive. The resources invested in gathering, storing, aggregating, analysing and presenting information should be proportionate to the benefits it delivers (**Ref. 39**). Speed, volume, accuracy, and depth of analysis are all cost drivers. Local public bodies therefore need to make choices about how much information to collect, and when enough is enough. They should ask themselves hard questions about whether they know how much they spend on information and get value for the money.

Skills

Skills for decision makers

- 82 When it comes to using information, decision makers require important skills: an ability to judge what is relevant and what quality is required; and an ability to interpret the information provided. The skills in judging what information is required were considered earlier in this chapter; this section briefly considers interpretation.
- 83 By itself, fit-for-purpose and well presented information is of little use. It needs to be considered by people with a range of skills that include analysis and interpretation. Many decision makers will lack some or all of these skills; a study carried out on the public sector in New Zealand reported that there was a:

‘shortage of people with the skills needed to act as an intelligent customer for research and to understand or interpret available information’ (**Ref. 40**).

Decision makers may also lack the will to use the information, relying instead on judgement based on instinct or experience, or even luck.

- 84 Even when good information is available, people have limited information-processing skills (**Ref. 41**), or limited time to consider it. Organisations can have large quantities of information about different processes, and staff at all levels will find it difficult to absorb and comprehend everything that could be available (**Ref. 37**). Decision makers may therefore rely on rules of thumb to interpret information, or interpret it selectively. This can especially be the case if they are overwhelmed with information (**Ref. 37**), or if the information backs a view that they already hold.

The right analytical and presentational skills

- 85 Those providing information need two particular skills: analytical skills to identify key messages from information and an understanding of how to present information in a way that is easy for others to interpret.
- 86 Analytical skills are vital both for providing the right information for decision makers, and for extracting meaning from data and information in a proactive fashion that may be far from obvious, providing important and surprising insights to decision makers, as Example 10 shows. Greater use of technology means that those with the right analytical skills are able to answer more of the questions asked by decision makers.

Example 10

Extracting surprising insights from data

Analysis of information enabled British Airways to develop a model explaining linkages between employee satisfaction, customer satisfaction and financial performance. The model showed that cabin crew service was crucial to customer satisfaction, which in turn was crucial to the willingness of customers to recommend British Airways.

Even when flights departed late, good cabin crew service could generate high levels of customer satisfaction. The discovery of such unexpected correlation gave a rare opportunity for management learning, questioning assumptions about what keeps the customers satisfied, and how British Airways could respond.

Source: Audit Commission based on Refs 42 and 36

- 87 Public bodies often lack analytical skills. A survey for the Department for Communities and Local Government found that 80 per cent of neighbourhood renewal partnership managers identified a shortfall in analytical skills, with 40 per cent considering that this hampered partnership performance:

‘Much time in partnerships is absorbed in sourcing data, sorting out data quality issues, and performance reporting – not in higher value added analytical work to help drive improvement’ (Ref. 43).

- 88 The Commission's study on unintentional injury, *Better Safe than Sorry* (Ref. 14), showed that a lack of skills, and the complexity of identifying cause and effect in an area as diverse as unintentional injury, inhibited managers in one area from establishing whether a 21 per cent decrease in A&E attendance for children under five was related to injury prevention initiatives. But it also showed how they used links with the local university to carry out evaluations and monitor projects.
- 89 Presenting information in an understandable way is a skill in its own right, and one that is in short supply. In particular, the combination of analytical and strong communication skills is not widespread (Ref. 36).

5

Only the start Evaluate and improve

- 90 This paper is intended to encourage those with a responsibility to improve public services to think about how they could exploit information more fully. It has shown that information is not used as well as it could be, and that organisations in both the public and private sectors can substantially improve what they achieve by using information more effectively.
- 91 Public bodies should actively consider whether they have the right information to hand and use it to best effect. They should ensure feedback loops enable a continual learning process, with formal evaluations after key decisions. Evaluations should include assessing whether the information available at the time of decision was fit for purpose.

Multiple strands of work

- 92 The Commission's work does not cover all the aspects of this issue. Rather, it complements work being done by other bodies. While this paper looks at improving the use of information for decision making in local public services, the forthcoming publication *Why Information Matters* from the National Archives and the National Audit Office considers the importance of improving information management from a central government perspective. Other examples include the *Power of Information Report (Ref. 44)* by Ed Mayo and Tom Steinberg for the Cabinet Office, the ongoing work on data sharing by the Ministry of Justice. The Local Government White Paper (**Ref. 2**) also notes the development of local information systems to collate and analyse data about local areas and citizens.
- 93 The Freedom of Information (FOI) Act 2000 has increased the pressure on public bodies to use information well. As part of this study the Audit Commission asked University College London to provide a report (**Ref. 45** – available on the Commission's website) on helping local authorities to develop good practice in the context of the FOI Act. The report commented that:

'decision makers must recognise that the means to access evidence on which their decision making is based has been broadened by the FOI Act and more information than previously may now be made public. Decision making is therefore going to be subject to closer scrutiny and challenge.'

Next steps for the Audit Commission

- 94 Improving the use of information is one of the Audit Commission's five strategic objectives. This paper has described the philosophy that the Commission will apply in seeking to complement existing work. This will be further developed and strengthened by a programme of work that includes the use of information in Comprehensive Area Assessment, where the risk assessment will include an assessment of the use of information locally to inform national and local targets for improvement, and further research under the Commission's national study powers. In this research the Commission will examine how better use of information can help deliver improved local public services. It will also aim to help those making decisions specify the relevant information, and the quality of information, that they need, and aim to help those who are asked to provide better information to decision makers do so.
- 95 If you have any comments on this paper, or have examples of notable practice which you would like to share please contact:
Alastair Evans alastair-evans@audit-commission.gov.uk.

Appendix 1 – Definitions

The Language of the Measurement Culture – A Glossary

Inputs: the resources used by an organisation.

Outputs: the services, goods or products provided by the organisation with the inputs.

Outcomes: the benefits or value generated by the organisation's activities.

Performance indicators (PIs): quantifiable measures used to monitor performance and report on it to the public.

Management information, which usually includes both numerical and non-numerical ways of monitoring and understanding performance.

Performance management, which is used in a wide variety of ways and usually at least includes: identifying objectives; allocating them to individuals or teams; and monitoring progress.

Targets: usually desired or promised levels of performance based on performance indicators. They may specify a minimum level of performance, or define aspirations for improvement.

League tables: intended to enable comparisons of performance between different service providers to be made.

Public service agreements: (PSAs), first introduced in the 1998 Comprehensive Spending Review as an integral part of the government's spending plans. Each major department has a PSA, setting out the department's objectives and the targets for achieving these.

Service delivery agreements: (SDAs), introduced in the 2000 Spending Review, set out lower level output targets and milestones underpinning delivery of the PSA.

Standards: may be used for a variety of purposes, including indicating to the public the minimum standard of service it can expect from a public body, or to a service provider the standard which should be achieved (and against which they may be assessed for compliance). Targets can be based upon standards – for example to achieve a minimum standard consistently, or to improve over time so that the standard is achieved.

Benchmark: normally involves a detailed analysis of comparative performance to help identify what underlies differences between two similar bodies.

Source: Public Administration Select Committee, Fifth Report 10 July 2003, based partly on Audit Commission submission PST 31A

Definition of data, information and knowledge

Terminology	Definitions
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: Audit Commission

Appendix 2

Examples of good use of information by the private sector

- 1 A literature review commissioned from Cranfield University (**Ref. 37** – available on the Commission’s website) describes innovative good practice in the private sector. Cranfield looked at the way DHL and EDF Energy use information after both companies:

‘made significant shifts in the way that they use their performance measurement systems’.
- 2 The areas of good practice identified by Cranfield include:
 - a) establishing appropriate performance management infrastructures, including teams of analysts with the skills to challenge colleagues as well as analytical skills;
 - b) changing senior managers’ roles to encourage them to question the quality of the analysis and make more informed decisions; and
 - c) analysing data and presenting information to add value, instead of the majority of effort being spent on gathering data and dropping it into standard templates.
- 3 There are also many examples in management literature of companies improving performance principally by using information better. Among the most commonly cited are:
 - a) Tesco’s Clubcard has tracked the shopping habits of up to 13 million British families for more than a decade. Clubcard data on Tesco’s customers and their behaviour has informed a series of strategic decisions, such as the move into smaller-store formats and the launch of the internet shopping site (**Ref. 1**);
 - b) Experian collects and maintains credit history information on consumers and businesses, and uses analytical tools to help business clients make decisions on potential customers’ creditworthiness. Experian’s annual report for 2007 reported a fifth consecutive year of double-digit profit growth (**Refs 46, 47**);

- c) Capital One conducts more than 30,000 experiments a year, with different interest rates, incentives, direct mailing packages, and other variables. Analysts design credit card and other financial offers to customers based on the results of these experiments. In 2006 Capital One had exceeded 20 per cent growth in earnings per share every year since it became a public company (**Ref. 48**); and
- d) UPS can accurately predict potential customer defections by examining usage patterns and complaints, enabling salespeople to contact the customer to help resolve identified problems. This has dramatically reduced customer attrition (**Ref. 48**).

Appendix 3

References

- 1 Rigby E, *Eyes in the Till*, Financial Times, November 11 2006.
- 2 Department for Communities and Local Government, *Strong and Prosperous Communities The Local Government White Paper*, 2006.
- 3 Audit Commission, *Improving Information to Support Decision Making: Standards for Better Quality Data*, November 2007.
- 4 Greater London Authority / Research as Evidence, *What Works in Preventing and Re-engaging Young People NEET in London*, 2007, www.london.gov.uk/mayor/children/index.jsp.
- 5 Audit Commission, *Seeing the Light: Innovation in Local Public Services*, 2007.
- 6 Meekings A and Povey S, 'Plumbed-In Performance Improvement': *Accelerating Improvement and Adaptation in Organisations*, Fourth International Conference on Performance Measurement and Management, PMA, July 2006.
- 7 Bichard, Sir Michael, *The Bichard Inquiry Report*, House of Commons, 2004.
- 8 Audit Commission, *Waiting List Accuracy*, 2003.
- 9 Audit Commission, *The Planning System*, February 2006.
- 10 Audit Commission, *Crossing Borders*, 2006.
- 11 Audit Commission, *Changing Lanes*, February 2007.
- 12 Audit Commission, *Out of Authority Placements for Special Educational Needs*, 2007.
- 13 Audit Commission, *A Prescription for Partnership: Engaging Clinicians in Financial Management*, December 2007.
- 14 Audit Commission, *Better Safe Than Sorry*, February 2007.
- 15 Audit Commission, *Hearts and Minds: Commissioning from the Voluntary Sector*, July 2007.
- 16 Audit Commission, *Healthy Competition*, November 2007.
- 17 Public Administration Select Committee, *On Target? Government by Measurement*, HC 62-1, 22 July 2003.

- 18 Audit Commission, *Neighbourhood Crime and Anti-social Behaviour: Making Places Safer Through Improved Local Working*, May 2006.
- 19 Audit Commission, *Housing Market Renewal Annual Review 2005/06*, 2006.
- 20 Spiegelhalter D et al, 'Risk adjusted sequential probability ratio tests: applications to Bristol, Shipman and adult cardiac surgery', *International Journal for Quality in Health Care*, Volume 15, Number 1, 2003.
- 21 Audit Commission, *Public Sports and Recreation Services*, 2006.
- 22 *Modern Public Services for Britain: Investing in Reform, Comprehensive Spending Review: New Public Spending Plans 1999-2002*, HMSO, 1998.
- 23 *Local Government Act*, TSO, 1999.
- 24 Barber, Sir Michael, *Three Paradigms of Public Sector Reform*, McKinsey & Company, 2006.
- 25 Audit Commission, *Targets in the Public Sector*, 2003.
- 26 HM Treasury, *Meeting the Aspirations of the British People: 2007 Pre-Budget Report and Comprehensive Spending Review*, 2007.
- 27 Office of the Deputy Prime Minister, *Data Sharing for Neighbourhood Renewal: Lessons from the North West*, 2005.
- 28 Foley P, Alfonso X, Wiseman I, *Local Information Systems: A Review of Their Role, Characteristics and Benefits*, Department for Communities and Local Government, 2007.
- 29 David Obuwa and Heather Robinson, *Revisions to Quarterly GDP Growth and its Production (output), Expenditure and Income Components*, Economic Trends 637, Office for National Statistics, December 2006.
- 30 Office for National Statistics, *2001 Census: Manchester and Westminster: Matching Studies Summary Report*, July 2004,
- 31 Audit Commission, *Crime Recording 2005: Improving the Quality of Crime Records in Police Authorities and Forces in England and Wales*, 2006
- 32 Audit Commission, *Life in the Fast Lane*, 1998.
- 33 Ministry of Justice, *The Governance of Britain*, CM 7170, TSO, 2007.
- 34 HM Treasury, *Devolving Decision Making 1 – Delivering Better Public Services: Refining Targets and Performance Management*, 2004.

- 35 Audit Commission, *Delivering Efficiently: Strengthening the Links in Public Service Delivery Chains*, 2006.
- 36 Kennerley M and Mason S, *The Use of Information in Decision Making, Literature Review for the Audit Commission*, Centre for Business Performance, Cranfield School of Management, 2007.
- 37 Van de Walle S, Bovaird T, *Making Better Use of Information to Drive Improvement in Local Public Services: A Report for the Audit Commission*, Institute of Local Government Studies, School of Public Policy, University of Birmingham, 2007.
- 38 Audit Commission, *Staying Afloat – Financing Emergencies*, 2007.
- 39 Royal Statistical Society Working Party on Performance Monitoring in the Public Services, *Performance Monitoring in the Public Services: Performance Indicators: Good, Bad and Ugly*, 2003.
- 40 Cabinet Office, *Professional Policy Making for the Twenty First Century: Report by the Strategic Policy Making Team*, 1999.
- 41 Walsh J P, *Selectivity and Selective Perception: An Investigation of Managers' Belief Structures and Information Processing*, *Academy of Management Journal*, 31(4), 1988.
- 42 Neely A and Al Najjar M, *Management Learning not Management Control*, *California Management Review*, May 2006.
- 43 Johnstone D et al, *Supporting Evidence for Local Delivery National Research and Evaluation: Key Findings and Recommendations*, Department for Communities and Local Government, (forthcoming)
- 44 Mayo E, Steinberg T, *The Power of Information: An Independent Review*, Cabinet Office, 2007.
- 45 University College London, *Report for the Audit Commission, Improving Access to and Use of Public Sector Information, Helping Local Authorities to Develop Good Practice in the Context of the Freedom of Information Act 2000*, 2002.
- 46 Hagel III J, and Rayport J, *The New Infomediaries*, *The McKinsey Quarterly*, Number 4, 1997.
- 47 Experian Ltd, *Annual Report 2007*, 2007.
- 48 Davenport T, 'Competing on Analytics', *Harvard Business Review*, January 2006.

Appendix 4

Methodology

The study on using information to make better decisions, of which this paper is a part, is being conducted under Sections 33 and 34 of the Audit Commission Act 1998. Section 33 places a duty on the Commission to undertake studies to support recommendations for improving economy, efficiency and effectiveness in the provision of local authority services. Section 34 enables the Commission to report as to the impact of the operation of legislation or ministerial directions or guidance on the economy, efficiency and effectiveness of local authority services.

Our research to date has included:

- fieldwork in 5 local councils and telephone interviews with 12 more;
- reviews by INLOGOV (**Ref. 36**) and Cranfield University (**Ref. 37**) of the literature on information in the public and private sectors respectively (both literature reviews are available on the Commission's website); and
- a seminar in partnership with the Advanced Institute of Management Research (AIM) enabling other leading academics and practitioners in the field to comment on our emerging findings.

We have also analysed corporate assessments (CA) from December 2005 to June 2007. In CAs, the Audit Commission looks at how well single tier and county councils use information to improve services and deliver improved outcomes for local people. These examine whether:

- a) data requirements are agreed between councils and partner organisations, and information is shared between them to inform a joint understanding of local needs;
- b) providers work together to develop and consider relevant performance information, including trends over time and comparisons with both similar areas and the national picture; and
- c) data collection and analysis includes reference to the needs of groups at risk of disadvantage and geographic areas.

Alastair Evans is the Research Manager for this study, Simon Mahony is the Head of Studies and John Kirkpatrick is the project director.

Seminar attendees

The Commission thanks all those who were involved in the seminar. However, the views expressed in this report are those of the Commission alone. The seminar took place in March 2007, and the roles indicated are those occupied by the individuals at the time of the seminar.

Adrian Barker, IDeA

Alan Meekings, Managing Director, Landmark Consulting

Andrew Collinge, Research Director, Social Research Institute, Ipsos MORI

Andy Neely, Cranfield University School of Management & Deputy Director of Advanced Institute of Management Research (AIM)

Christopher Hood, Professor of Government All Souls College, Oxford and Director of the Economic & Social Research Council's (ESRC) Public Services Programme

Denise Lievesley, Chief Executive, The Information Centre

Mike Kennerley, Research Fellow, Cranfield University School of Management

Neil Prime, Head of Analytical Support, Healthcare Commission

Nick Sloan, Director Performance Measurement, National Audit Office

Paul Aliyn, Clinical Lecturer, Imperial College

Rosalyn Harper, Statistical Researcher, Statistics Commission

Simon Jones, Head of Analytical Services, Dr Foster

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